USDA

Data Users' Meeting

Summary of Open Forum and Breakout Sessions

Tuesday, April 24, 2018

University of Chicago – Gleacher Center
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United States Department of Agriculture (USDA), National Agricultural Statistics Service
April 24, 2018

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National Agricultural Statistics Service (NASS)

Question & Answer Summary

Note: The following write-up presents a topical summary of issues discussed during the afternoon open forum. Material is presented in chronological order. Questions and answers have been lightly edited for clarity and readability.

Attendee: This question is for Warren regarding the specific price estimate. Are you changing the methodology by which you come up with that expected price? Second I understood from last fall's Data Users' Meeting that you would be including these probability estimates at the back [of the publication] in some sort of a range. Today you said "could". Does that mean they're not doing that initially in the May [WASDE] and you're waiting for a request from users to get that in there or you're starting with it and if people don't use it you're dropping it?

WAOB: In response to your first question the processes that the Interagency Commodity Estimates Committees (ICEC) use to come up with the price projections will be the same. What will be different is that we will be posting the point estimate and not putting around a distribution with some of that historical information.

WAOB: Initially with the May WASDE we will not be doing ranges but will hopefully be added at a later time. To my understanding it is not something that will be in the WASDE but will be on the OCE website. But that is something that still has to be worked out. The way we forecast prices is not changing, each committee comes up with its own point forecast. What was different among the commodities was how we were assigning the ranges and it was providing perhaps a false assumption about the probability distributions. By going to the point estimate that we were originally forecasting in our meetings, we are simply providing that information.

Attendee: I actually think you're losing information when you do this. I appreciate that often in published articles or even a University Extension outlook people are using the midpoint, which is inappropriate given the way the range is actually constructed.

But if you go back and look at the October WASDE for example, at the all wheat price, I think nine out of ten years or eight out of ten years, by the end of the marketing year on May 31, it has fallen between that range. If you get rid of that information and you go with the midpoint, I'm concerned, one, about what the midpoint means, but more importantly I'm concerned we are going to lose some information. That's why I'd like to see at least the probability range in the back of WASDE even if you want to report the midpoint on the balance sheet or the original range you would have come up with given the different ways that different groups come up with their price expectations.

WAOB: This is something of an evolutionary process and our objectives are to provide as much good information as possible, but not to provide misleading signals. Hopefully as we work forward we will come up with a program or way of doing it that's agreeable to the majority of people.

WAOB: I think the intention particularly on the crop side is to post, not necessarily with the balance sheet, but to post probability ranges or just ranges.

WAOB: We were working on probability ranges and a person at ERS was doing a lot of work on that, and then my understanding is that he was detailed to the Council of Economic Advisers and that put a hold on things. They're working on corn, wheat and soybean probability distributions.

Attendee: To eliminate the probability ranges, from a research standpoint, starts to degrade the past data too. When you look back at past data from when they start, let's say in May, and start moving forward with their S&D's [supply and demand estimates], we know where their range is at, we know where their midpoint's at we can ultimately tell where they end up. The question then becomes as we move through that period of time, what if we go outside of that probability range or what if we go to one extreme or another. It's a matter of being able to look back at past history and understand there was something similar today compared to, let's say, 1973.

Attendee: This is a question for NASS. On behalf of our members we've had some concern over the report release times from livestock reports and particularly with the 3:00 p.m. Friday release. When there's multiple reports it makes it very difficult to digest and disseminate that information across all market participants. That is amplified when you have multiple reports coming out that late in the day. We request that NASS consider moving those reports to a Thursday and possibly not stacking them up on the same day.

There's also some concerns over the policy on noon release times ahead of holidays. Some of our members have expressed that this is an additional challenge for them in terms of risk mitigation and the major impacts that has on the market when there is a noon release time. Whether it's artificial or imagined or real those

things do matter and are highly visible at that time. In addition, moving that type of report, Cattle on Feed has been brought up multiple times, to a Thursday release after hours we believe would fix that problem. We request that you look at that in future scheduling.

NASS: We understand that too. In fact, I was talking to somebody from Montana this morning concerning the Cattle on Feed releases. NASS tried, on this last calendar, to take a conscientious look at what's coming out on Fridays. You'll notice that June Acreage and June Grain Stocks are coming out on Friday so we moved the Hogs for that time period to Thursday. We've tried to accommodate that so not all of those reports are coming out at the same time. Sometimes there's really nothing you can do because of the fact that we only have so many data collection days and that's what really makes it tough on Cattle on Feed. But that's one thing that we are looking into.

Attendee: When will RMA be releasing the county yield data?

FSA: We get our yield data from NASS and RMA. NASS, I think they start out maybe in February with the small grains and we will have them over the next couple of months. RMA, we don't get that data until August, so for the 2017 crop, we will get that this August. There's some lag between when the producers have to report it to their agents and the agents have to submit it to RMA. We've worked with RMA and August is when we feel the data are almost complete. So we get it in August, look at it, and then make that data available in September then we make payments in October.

NASS: Small Grain County Estimates actually come out in December now. Corn and soybeans in February and then it kind of rolls from there.

NASS: One of the challenges with using RMA data is the current lag between when we publish and when that data ultimately become available from RMA and through their insurance provider.

FSA: We have a big payment cycle in October and that's why we get the RMA data in August when it's virtually complete. We look at it, make sure it's correct and use that to make payments the first week in October.

Attendee: This is mostly for AMS but may need to be answered in collaboration with NASS. The weekly broiler and slaughter data shows year to date is down slightly, while NASS data shows it is up more than 2%. These say very different things about industry trends. I know the weekly data is preliminary, I'm just wondering what can be done to improve accuracy and make sure those numbers line up a little bit better. And is there use for the weekly if it's not going to reflect the data that's released later by NASS.

AMS: Ours are preliminary estimates and NASS's would be the actual. We get that this is a constant challenge whether it's poultry or cattle or hogs. I hope it's not misleading, we don't want that, we do know there's a lag. I think people want an estimate now to get an indicator of what the slaughter numbers are. I'm not sure what the lag is on the slaughter data for poultry but for other livestock it is two weeks, and sometimes that does come in with some slightly different numbers.

NASS: Are you referring to the difference between NASS final poultry data and AMS or are you talking about the weekly broiler report?

Attendee: When I talk about the AMS weekly I am talking about the weekly broiler report that comes out on Thursday's at noon. That data has continuously shown year to date is down by 1% for broiler slaughter. NASS data has continuously showed up over 2%. Those are very different as far as what the industry is doing.

NASS: I think one thing you'll see, there's a closer following in our livestock data. I think there's more sampling done by AMS and a little bit more truing up there. I think we do a pretty good job on the poultry side. We looked at this with Mike Sheats a few years ago and it's a little bit of the way AMS does some of their modeling. I know about 10 years ago we noticed a deviation between NASS and AMS and the two agencies worked together to true that up. So that's something that we could look into, I am glad you pointed that out.

Attendee: Part of the difference is at AMS. They're using a week to date, so one day is a big deal and it makes 2% easily for many weeks. AMS does not start on January 1, it's a week so they can have three or four days in there or not in there from one year to the next on all their reports. It's not a true year to date, they're using a weekly so when you have one day in a month that's 5% difference, so your 2% difference is mostly how they're doing it. There are these rules of thumb. They're always wrong on weights on hogs and cattle because it's a prior 5 week average. When weights are going down they are always too high, when weights are going up they always too low. Most of what you're talking about is just because the first full week can have a different number of days every year to the next. Which is 1% or 2% or 3%, you have to get four or five months into the calendar year until this washes out.

Attendee: I guess the question is how to even use that weekly preliminary data?

Attendee: You adjust for slaughter days for all livestock to a daily average slaughter basis.

Attendee: I'm surprised we're now moving towards RMA data. I put fall yields in for my farm and others but RMA and insurance companies can't give a final number until August of next year?

FSA: It has to do with our reporting requirements. When producers don't have losses, they're not required to report production until the following year when they report

their acres. If they're planting corn in May that's when they report their production to an agent if they don't have a loss. In May, June, and July all the data trickles into us and that's when we use it.

It can be reported by the producer earlier. When they harvest they can report it to their agent and be done with it. But according to the current rules they don't have to report it until they report their acreage data the next year. That can be changed, I actually think the House Ag Committee is looking at that, so we can get the data sooner.

Attendee: Are there any changes in the 2018 methodologies that we should be aware for corn yield or soybean yield or anything related to crops specifically? Secondly, making a request to push the reports out earlier in the month. Finally, the chasm between the final spring wheat crop and the conditions last year.

NASS: We'll go in reverse order. The condition versus yield, whether it's spring wheat, corn, or whatever, the discussion is the same. Two different processes two different things entirely. When you look at crop condition we're talking to roughly 2300 county extension agents and FSA employees and we're asking them to give us their opinion week by week of what the crop looks like in those five condition categories. When we go to forecast yield, we're going to producers and asking them to tell us what they expect their yield to be and then we are also putting enumerators in fields and they're counting and ultimately weighing portions of those fields and getting yields that way. So again, two different processes. Most of the time they sync up pretty well sometimes they don't. Last year was a prime example for more than one crop.

When we scheduled the crop production reports the mandate that we have is basically written into law that we have to publish on or before the 12th of each month. We try to schedule them as early as we can. You'll notice that those vary month to month depending on the content of those reports. There are two factors that we have to consider. One is we need to make sure we have enough time to collect the data. The second is we have to make sure we have enough time to compile and analyze the data. The bigger the report or the more crops that we're forecasting, typically you'll see those dates closer to the 12th than those that don't have as many crops to work through.

And then last but not least, any new methodology for crop forecasting? In general, I would say no. Although I would say that we continue to look at the procedures that we use. We spent a lot of time looking into different modeling approaches we can use to effectively use the same information that we're using now. We've done a lot of work in recent years trying to figure out is there a better way to pull that together that would make things more transparent for all of you. So instead of me saying that's the magic that happens when we get together in the room, we can actually point you too a mathematical formula that says this is how all those

different pieces of information we have get put together to result in that yield at the end of the day.

Attendee: From what I understand this is quite a packed situation for you to get together a combination of all these different things and to get it in the hands of the committee people. It seems like it's going to be very difficult to move earlier [the dates of the Crop Production reports].

NASS: The forecasts in the Crop Production reports are based on conditions as of the first of the month. So that means that we can't start collecting that data too early. We start a couple of days prior to the first normally. Our goal is to try to get that data collection centered around the first because if you start collecting it a week before the reference period and a hailstorm comes through or weather drastically changes then your forecast, you might say it's based on conditions as of the first but it wouldn't be anymore. We're collecting data up until the fourth or fifth of the month. That leaves a real short window to get it out any sooner than we are now.

NASS: On some months we also have remotely sensed yield indications as well and there's some time period to get that imagery and then the processing associated with it. There are some constraints between the eighth of the twelfth getting the necessary data collected to be able to come down.

Attendee: How much are you utilizing remote sensing when putting together your crop estimates?

NASS: The way I describe the remote sensing information is that it helps you interpret the other data you have. We're not at a point where we are ready to standalone on remotely sensed yield information, but as I mentioned, we've got data we're getting from producers, we've got data we're getting from putting enumerators in the fields, it can be really nice to have a third independent set of data that helps as well. It's particularly useful when you look at more specific situations that may have occurred. It can be really helpful to see how big the impact from some of those weather events have been. It's very beneficial but as I've said before, there's not a precise number that we put on how we weight each of these together. In fact, it varies month to month, crop to crop, state to state.

NASS: I think one thing to understand too is that with remotely sensed yield models different crops perform differently and you get different performance across the growing period as well. Having data that emanate from a completely different source, from the plots in the fields, from farmer reports and then from remotely sensed data is very valuable. They don't always agree and I think understanding what's going on in each of them can help you understand what's going on overall a little better and a little quicker.

Attendee: I've got a question for Patrick, you talked about updating the PS&Ds (Production, Supply and Disposition) back at the end of 2016, and you don't have any planned changes or updates coming anytime soon?

FAS: Not for PS&D online. We are looking to address issues that we have with our internal PS&D system. PS&D online is where it's going to be for a while but we're always open to input and suggestions that might help improve the system.

Attendee: You were talking about putting out a historical database on the WASDE S&Ds. Is that going to include the world numbers on the historical S&Ds as well as the domestic numbers?

WAOB: It's a compilation of everything that is published.

Attendee: I have a question on mandatory price reporting for beef. As select production continues to decrease and trade volume goes down, is there any way to improve price discovery?

AMS: As we see such a high percentage of the cattle grading choice, the choice select spread is becoming somewhat antiquated. We have been looking at choice/high choice spreads as we're seeing a lot more choice cattle. As far as data for select, the volumes are just not there.

Attendee: This is a question on yield modeling. I heard a lot of questions about using imagery as a way to validate some of the survey data. Are you guys looking at implementing any machine learning or data science AI tools into USDA's modeling techniques to help manage the data flow and the modeling?

NASS: The remote sensing modeling uses machine learning.

Attendee: I didn't know if you're using it on top of a master model to combine all the different data sources.

NASS: We are also using some Bayesian modeling that's looking at combining all the data sources as well.

Attendee: Question about the choice/select spread. Can you give us an update on the grading changes that happened last fall? There was a little bit of volatility, since then the prime percentage has really exploded and I'm not sure if that's because more plants have started to adopt the new systems.

AMS: There was an issue of cameras, they have made adjustments to normalize that. Also with the rule of looking at dentition, I think more cattle grade choice or higher that would have previously been ruled ineligible for choice grade by the ossification of the chine bones. By using dentition, there's more of these cattle coming in that grade choice or prime.

Attendee: Since we only get your count data are there any plans to eliminate the ear weight chart that compares the current month's ear weight to final ear weights of history. Is there any way we actually can look at the implied ear weight by month?

NASS: Our big challenge is trying to make sure that folks understand that is an implied ear weight. It's a simple mathematical calculation using the published yield and those ear counts. It does not say that's the ear weight that we measured, it simply says that if the yield ends up being at the level we forecasted and if those ear counts hold, that's what it would imply that ear weight to be.

Attendee: That's the suggestion for August, September, etc. you're using final ear weight for the history of the regression graphic. Is there any way you can populate them with the implied ear weight that was presented at that time. It's an August report that's reporting an August implied ear weight, so why not compare it to the historic August implied ear weights.

NASS: We've had that suggestion before and I think it would be a little bit like instead of comparing the August yield forecast with what the actual yield was last year, that would be the same argument, saying, how does it compare to what we forecasted in August last year. I'm not sure there's a lot of value in knowing that, because what we forecasted in August last year might not have been anywhere close to what the final yield was. Do you want to know how this year compared to last year's actual yield or do you want to know how this year compared to what we said this time last year? From the folks I've talked to the vast majority would rather compare to the actual from the previous years.

Attendee: Has the conservative bias of farm operator yield indications changed notably in recent years?

NASS: In general, I'd say no. We've seen a fairly consistent bias in that data over time.

Attendee: This is a Wheat Outlook report question. There's a wheat index in there where they're taking the crop condition ratings and they're putting it on what looks like a 400 point scale on the graph. It says, and I quote, "ratings for the very poor are not included in the index calculation." We've got five categories of ratings, we're deliberately excluding one, is that because we assume none of it's going to get harvested or why are we skipping one of the categories?

ERS: I'd love to take credit for that chart, but I borrowed that off of Brad Rippey who actually puts it together. That's their convention, they dropped the very poor. I think it is to reduce some of the noise.

Attendee: I have a question about the March Planting Intentions and June Acreage reports. I'm under the impression that the survey samples can be two different sets of farmers. Is that correct?

NASS: Yes, there's always some overlap between those two samples, but they are independent samples. We do have some efforts to make sure that we have some overlap between the two. The sample counts are pretty large. One other difference in June is not only do we sample from our list of producers, but we also do our area based survey which means we're sampling based on land rather than just based on a list of farmers.

Attendee: What I'm really wondering is, if we can get those methodologies to align and be maybe identical. That's essentially the beginning of the crop year is the intentions when farmers are going to begin planting and putting it into the ground.

NASS: We have a structured overlap of operators between quarters of the survey between June, September, December, and March. Once you get to June it's in the ground and then you really want to follow it and see if there was a change between June and September, or was there a change between June and December what the same producer said. So there is a choice to be made because you also have to worry about respondent burden and keeping the same folks in the sample for long periods of time is also problematic.

Attendee: In the NASS recap for crops and stocks reports they've started to put in the trade ranges and average trade guess. I was wondering about the thinking behind that. Do you think that has influenced your process of coming up with estimates?

NASS: We don't look at those numbers before we set the estimates. Lance is not looking at that until the morning when they're putting the briefing together. We don't want to be biased by anything.

NASS: The only change is that we started including them in the version we post out on the web. We've had those charts in there for the Secretary for some time so nothing's changed other than we're trying to be a little bit more transparent with what we're sharing.

NASS: We've also changed the look a little bit this last season. We wanted to try to show with the crop items over the forecast months where we've been, the changes we've made as we move through the months and also where the market analysts were as well. I think last year was an interesting picture when a lot of folks thought we were too high at least on corn.

WAOB: One point that I think is important is that the packet that's put together is for the Secretary's briefing or more often it's the Secretary's designate. That person wants to know what's going to be a surprise. It's a briefing for somebody who's not necessarily following tick by tick what's happening in the market. That's one reason that information is valuable is to give a signal to the Office of the Secretary what's going to be a surprise in this release.

Attendee: It seemed like a year, maybe two years ago there was a structural shift in what got reported for wheat as cover crop, especially in the soft red winter wheat states. Just curious if there might be an error there where we're getting an overestimation of wheat acres that actually were planted for cover crop. There have been quite a few states that have been incentivizing producers to plant a crop that does not get harvested for grain that actually is truly a cover crop, but it seems like that is going into an assessment as a wheat acre.

NASS: There hasn't been any change. NASS's position has always been if you plant a particular crop it is included in our planted acreage estimate. If it's strictly for cover or if it fails for any other reason it's not going to be represented in the harvest acreage total. I know there have been some changes in how cover crops get reported through FSA so if you're comparing to some of those certified acreage numbers, you will see some shifting there because of how that data is being picked up.

Attendee: When you talk about the remote imaging is that the NDVI index?

NASS: We use the NDVI model.

Attendee: Exclusively?

NASS: We have a remote sensing yield program and a remote sensing acreage program. We're using some other sensors for other purposes, especially when there's been a disaster. I don't want to be too closed in our answer but predominantly for yield it's an NDVI model.

Attendee: This is a question for NASS. Since agriculture has changed quite a bit, especially in the past few years, do you have any intention of trying to capture seed traits or seed treatments specifically for the chemical use survey?

NASS: Between us and our partners at ERS the ARMS program would be the best avenue that we have for tracking those trends. What we're going to do typically is find those in the ARMS Phase Two, which is the chemical use program that looks at field crops. We do meet on an ongoing basis with ERS staff and the internal staff in my branch to make sure that we capture those trends.

Attendee: By remote sensing, I think a lot of people might be referring to work that Descartes Labs is doing. Are you guys looking at those type of products and that type of methodology on an internal basis at all?

NASS: We've met with both Tellus and Descartes in the last 18 months. I don't want to comment on exactly what they're doing since then, they may have introduced some technology, but the remote sensing community is not so huge and our folks are certainly involved in that industry and a discussion of different procedures. We've published our methodology, there may be a few tweaks to it since it was

last published but it lays out pretty clearly our procedures for yield estimation from remote sensing.

Attendee: I just wanted to add to that on the foreign analysis side, if you're interested in that, we are also following Descartes Labs and Tellus and these organizations. Descartes Labs has a small business innovative research grant that they're working with DARPA, which is a Defense Agency, looking at forecasting yields using their machine learning algorithms.

Attendee: Last question for the time being on the NASS Hatchery report. The eggs set and chicks placed are reported as well as a hatchability number that's given as a percentage rounded to the nearest percent. As far as I know the hatchability data is not able to be downloaded and the only way I've ever been able to get ahold of it is through that rounded number at the top of the report. I was wondering if there's any way to get that more exact, to get it historically, and to get a chicks hatched as opposed to just chicks placed.

NASS: The hatchability is not loaded to Quick Stats. It's done internally in our publication on a weekly basis.

Attendee: The LS196, which is a national grading percent report is great, however, it's voluntary from what I understand. We have the fed cattle comprehensive that shows the weekly choice plus percentage. From a CME standpoint, if we're going to make changes to our live cattle contracts as far as what the par value of a contract is, recently we went from 60/40, now it's going to be 65/35, and we still have to evaluate if we need to bring that up and or if we can do a mechanism that automatically adjusts but we would need a mandatory number. I believe in the Fed Cattle Comprehensive that choice plus number is mandatory data. How could we get, a mandatory choice, a mandatory prime to go with a select number so that we can use that and not rely on something that, although it's a great report, the LS196 is voluntary?

AMS: The LS196 data we get from another part of our program, from the Quality Assessment Division. The mandatory data, we are using that is coming from all the formula cattle purchase types, formula nets. That data is from those plants that are in LMR (Livestock Mandatory Reporting) so plants that slaughter 125,000 or more per year. The grading data, presumably, is from wherever they get grading services provided.

AMS: The voluntary report has a significant lag because we use a sister division to get that data. The idea with a comprehensive is to be more timely. That's mandatory data in the comprehensive and its net data. As with anything with that comprehensive it's very fluid, if you have something specific we certainly are open to suggestions. On the comprehensive the idea was to be more timely, it's net data for the previous week as opposed to, not quite a two week delay on the on the voluntary side.

Attendee: First of all, the mandatory number is great. If you could separate the choice from the prime that would be a huge help. I think it was mentioned earlier about the prime, it is dentition and it is the cameras but really that dentition that's really done the trick here. We have packer feedback that's telling us that if they were killing 70% at this time last year, they're killing 75% today. That's dramatic and it's never happened in their history and they tell me this is the new normal.

When we look at it from our contract standpoint we become a bit of a discount contract and our lag that we're trying to keep up. Our goal is once a year, we take a number agreed upon and we go forward with it and that's our new number. The 74%-75% of the mandatory number that we get in our kill works really well. If we could separate out the choice from the prime it allows our job to be a little easier. That would be an excellent approach for us from a CFTC standpoint and from our own market regulatory standpoint, they really want to see a mandatory number, they're worried about a voluntary number, they'll push back at us. If we could get a mandatory choice number off the weekly comprehensive and three years of that data that would allow us to put a number out there that, I think even the feeding industry is with us on this, that if we could set it on autopilot and it adjusts itself every year we don't have that lag that we we've had on our contract.

AMS: That's good comments. We will take a look at it and if we can make it happen, we'll make it happen.

Attendee: Is there any plans at NASS to potentially release their implication of the quarterly by class wheat stocks? In the last two years we've had a really hard time reconciling the by class wheat balance sheet changes based on a breakdown of those stocks. I realize that's not necessarily data that's getting reported but very important for the by class wheat balance sheet breakdowns to understand those quarterly numbers.

NASS: We only estimate and publish an all wheat stocks number and a durum wheat stocks number. Internally we don't even necessarily break that down. It's very difficult to collect stocks broken down by type like that. That's why we focused our efforts on the all wheat stocks. Durum is completely different, it's pretty easy to separate that out.

Attendee: I'll put that same question to the World Ag Outlook Board because that's who is publishing the by class balance sheet.

WAOB: I have an answer to the previous wheat condition question. It's an arbitrary index and the very poor is not excluded from the calculation of the index, it's given a value of zero.

WAOB: This is a really small group that does this but it is really important. I just started doing it myself. It's hard, some classes of wheat are easier, but SRW is difficult, spring wheat is difficult, white wheat is a little easier.

Attendee: The by class wheat balance sheet changes every month and they change a lot after a quarterly stocks numbers. So an input for the World Outlook Board is clearly the quarterly stocks numbers. Is there any guidance to the rest of us that consume the data what that's implying?

ERS: That's one of the most challenging aspects to estimate, wheat by stocks by class. We do have a process, we begin by looking at what wheat is where and looking at historical proportions. When we start putting together a preliminary balance sheet by class we're looking at where has wheat been historically and we iterate from there as we get more information. It's not any sort of intention to do big swings, but these are dynamic markets and things change from year to year, demand changes, quality changes. There's many different things that can make demand for product and disappearance that's implied by those quarterly stocks figures pretty different from year to year, but the previous year is a good source of information and we move from there. I have talked to Bill before about publishing wheat by stocks or some of our quarterly by stocks data prior to when it comes out in June. The reason that we hold off on publishing it any sooner is that we have to wait for the last months of data from NASS from the Flour Milling Products reports so we can final out those food use figures. I don't see us publishing any earlier than that or doing anything in the interim. We do some annual by class figures and I do discuss some of the changes in the Wheat Outlook.

Attendee: This is a question that we started to discuss back in Kansas City involving the whole structure of the WASDE sheet. Why is Russia not listed as an exporter for corn and wheat?

WAOB: In May we are putting Russia and Ukraine in the major wheat exporters. We're also including a line, for wheat and rice. Because China's the leading wheat and rice producer and largest holder of stocks, we're including a line below the world line for world less China. Reflective of current market realities, we put Russia and Ukraine as major exports to join the other traditional five Argentina, Australia, Canada, EU and U.S.

Attendee: When you look at the soybean industry around the world, we've had a monumental shift over the last 20 – 25 years. Today we have a new harvest every six months and that has really changed the parameters and dynamics of how you look at the soybean industry. Is there anybody, whether it's in WASDE or whether it's in ERS, have they taken a look at putting together a six month S&D of the major exporters of soybeans? The people in the oil world have put out some six month numbers for probably 20-25 years now and it really is important because you start to see the availability in that short time frame.

ERS: Something we haven't thought about but I can take it back and talk to our soybean analyst about it. I think it's a good idea.

Attendee: I have a question about the WASDE. When you are looking at the export number what guides it more, is it the shipments or the sales out of the U.S.?

WAOB: It depends on which tables we're looking at. In the U.S. balance sheet we're pulling that from the customs data we're getting through GTIS (Global Trade Information Services). That's going to be shipments on our stuff going out, but then we are looking at major importers and exporters to make sure that numbers coming in and numbers coming out are truing up to hone in on which ones we think are more accurate.

WAOB: It depends on the commodity. Each committee is going to handle it a little bit differently. On the livestock side we look at the weekly sales data as an indicator. The monthly data that we get from the Census is the official data. You could use it as a marker, but you're never going to get the two of them to ever lineup precisely. You have to look at what's going on in the context of the world, who are we competing against, what countries are they going to and then you create a balance to try and do your forecast based upon all the available information what has historically been shipped, what the weekly data is telling you, and what you think or know is going on in the rest of the world as well.

FAS: The time of the year makes a huge difference. If you're early in the season, you don't have much or any shipment data to work with so you're looking at sales, you're looking at prior years, you're looking at the rest of the world and what suppliers are out there, what their crops are doing and things like that as well.

Attendee: You're also looking at the changes around the world and you're making your updates. This year we didn't have a lot of export sales or a lot of shipments until we figured out that Argentina's crop was gone. So now all of a sudden, we've got people buying U.S. and that changes your exports. It was export sales that really started the momentum of change and I think every market is different at different times of the year. In particular, right now, with wheat, hopefully we can get 25 million a week to get us to the end, but most likely not.

Attendee: I have a question about page 28 in the WASDE the World Soybean Supply and Demand. I'm curious as to what is the benefit of shifting South American soybeans stocks to an October through September year? The effect that I've seen is that this causes people to believe that at the end of Brazil and Argentina's marketing year that they have this huge supply of soybeans leftover when Brazil's going to have hardly a soybean leftover after their actual marketing year. We were talking about the wheat situation with China and now that we're going to show how the world supply looks without China. Well, it's kind of a similar situation with soybeans. Maybe the fine print should be larger because not enough people are noticing this.

WAOB: The comment about the historical precedent and going to a six months S&D, I don't know that it's something that we've really taken under serious consideration, but it's definitely feedback to be thinking about because I know that it has been a problem for a long time. Our marketing year and South America's marketing year don't match up. It's an artificial cutoff point. You get the monthly balance sheets and that's more relevant as opposed to trying to bring it all together in terms of one marketing year. You've got questions then as crop years change, whether its climate, varieties, production practices do we start moving that around? At some point you have to put some markers down but these are points well taken. It's always been a domestic focus from a U.S. producer, U.S. centric viewpoint. But maybe a six month could be one way to look at.

Attendee: Thanks for your response. I understand that it's difficult based on totally opposite cycles, that's just the nature of what we're dealing with. But I think that this year this is an especially big deal because now we're looking at Argentina running out of soybeans, we're looking at China trying to avoid the U.S. and so people looking at the balance sheet are seeing there's 90 million tons of soybeans left over at the end of this marketing year, plenty for China but you know Brazil doesn't have 36 million they have maybe a million or less. I don't know if it's just making it more obvious in the text or making that fine print more clear but people just continue to not read that and not understand that there is not that excess supply.

Attendee: When you go in to the PS&D, I've had people ask me when you look at the soybeans what is this local marketing year for Brazil and Argentina. You list them over there but you also have everything adjusted to a U.S. marketing year as well which I think we have to look at if we're going to use a yearly S&D. What you are going to do in corn that's becoming an issue as well, Brazil, in particular, they're becoming a bigger competitor. Again, we're moving so much production into the southern hemisphere that we didn't have 20 years ago that is really creating a lot of unsettlement when you look at some of these bigger S&D pictures. Maybe in looking at South America, you need to start looking comprehensive, in terms of soybeans, but maybe corn too and figure out how do we rectify this and put it out in a clearer format.

FAS: I was going to highlight the fact that we do have soybean information in the PS&D on a local marketing year basis. The global S&D is aggregated on an offset basis to try to account for everything. I have to take this back and the committee's will discuss this issue with the growing production in South American and see if there's a solution.

Attendee: I have two questions. On the export sales for switched destinations, there's a report that shows the data, but it's only for the last five weeks. I was wondering if there's a longer history of that. Second, there was a meeting in Kansas City about three weeks ago and there's a question about the WASDE release times, I believe

it was in the CFTC section of the meeting that suggested that the WASDE should not be released during trading hours.

WAOB: When they do a noon Lockup that was a change from when it was the morning releases and I don't know that there's been any serious discussion of looking at that but I hadn't heard that feedback from CFTC either.

Attendee: Professor Charles John from Columbia University said at the CFTC meeting that there was reason at times to have a pause in activity and markets, it was valuable and it was good. I talked to Andy Bush afterwards. He's one of the directors here in Chicago of part of their divisions. The problem we have every time that the NASS report was changed, the CME changed their trading hours and so I told Andy if you really want to have a pause, we've tried to have a bottom up, push, it's got to come from the top down. You've got to have the regulators say cease and desist.

FAS: On your export sales question there is an online system to access export sales data. I'd checked there first. If the historical information on the change in shipments is not there, I'll be happy to research and see what I can find out and get back to you.

2018 Chicago Data Users' Meeting
Session: NASS Quick Stats and Cornell ESMIS Metadata API

Presenters: Rich Holcomb, National Agricultural Statistics Service, Tahir Poduska – Cornell University, John Fereira – Cornell University

Note: The following write-up presents a full transcription of the session, it been lightly edited for clarity and readability.

Rich Holcomb

Hello everyone, my name is Rich Holcomb. I'm going to give a quick overview of where we are with Quick Stats, end of the story is nothing has changed. We are in the process of rethinking this but we're not quite to the point of killing it and burning it as Jim thinks we should do. I'm here with Jonathan Straight who can help answer any questions we have. If you have any specific questions please find us after the session or during the question time, we're more than happy to sit down and work with you on being able to use Quick Stats.

There are three primary ways of using Quick Stats. Quick Stats Lite, that's our structured or curated view of Quick Stats. The Quick Stats database itself and its web interface was the original release, it can be daunting for a lot of data users. Quick Stats Lite was our attempt to streamline the process and a few years ago we added an API which I'm going to briefly talk about today.

There are several ways to get to Quick Stats through the website. Click on the Data & Statistics tab up on the far left and then it'll take you to a page to access Quick Stats. From this page you can access Quick Stats or Quick Stats Lite. Quick Stats Lite is similar to Quick Stats, you pick a sector, a group, and a commodity and a view. For these you can only make one selection. Then for year and location you can make multiple selections by holding the control key and clicking multiple selections or shift and click to select multiples. Once you have a location selected the Get Data button will be enabled, you can't do anything until you have a location. This is the result for corn grain stocks. You can download that data to a CSV or you can continue the analysis in the full version of Quick Stats. Quick Stats has a little bit better spreadsheet interface, a little more dynamic so it'll just transfer to there if you want. That's Quick Stats Lite.

Quick Stats is the original release very, similar to Quick Stats Lite. The important point here is that you can start anywhere. This is an interface to our 34 million records. In the upper top right corner is the actual number of numbers in there. The purpose of this interface is to narrow down your query to a manageable size. We do have a limit, you can only return 50,000 records. It is dynamic, if you select a state, for example New Jersey, it will only show you variables for what's available in New Jersey. You'll also see the number of records come down considerably too. You

can start anywhere, typically you would start at the top left and then work down to geographic level and time. Just a tip between the very first box between census and survey, that's a key distinction. Generally I think people in here would be more interested in the survey data. The point that I want to make here is you don't need to make a selection for every box. For the data item field, you see three items there. Those by default will be included in your query the others where you have one selected, that's the limiting selection so that's the only thing you'll get there. In this instance for corn stocks, you only need to limit by corn as the commodity and stocks as the category and the year and location. Couple things about the interface here, you can make multiple selections on any of these unlike Quick Stats Lite.

Once we're down below 50,000 records, when you return data, by default, it's going to be one single item per row. It's difficult to use until you pivot it and you do that by right clicking on the variable that you want to string across the top. In this case, I would recommend data item there's three different variables and those three variables will be across the top with your locations and time on the left. This is the pivoted table, it's a tabular format where you've got three got total corn stocks, on farm, and off farm grain stocks those are the three main column variables. You also have four quarters, worth of data and then all states and the U.S. When I first executed the query, it's one long column of numbers and I pivoted on the data item to get the stocks displaying in a tabular format. Any more questions?

Attendee: Is the C.V. percent column ever populated?

NASS: For our Census data it is.

Attendee: Does the Quick Stats Lite also have a 50,000 row limit?

NASS: Yes, it does and the API.

Attendee: When you jumped from Quick Stats Lite to this you didn't go back and show what your clicks were on the homepage to get to that. Could you do that?

NASS: Sure, it's just a different arrow, it would be the top arrow. Quick Stats actually has its own url. It's a separate web server so you can go directly to it with https://quickstats.nass.usda.gov.

Attendee: You did one pivot, can you do multiple pivots? After you pivot once like you did to distribute the stocks number, you can go back and pivot on an individual state, or something like that?

NASS:	If you pivoted by state you would get the three different stock numbers and then for each state spread out. Does that make sense? So you get Alabama total corn stocks, off farm and on farm and then sequential.

Attendee:	After you have a pivot like this and you've distributed the different stocks numbers out in separate columns, can I come back and do another pivot on the states?

NASS:	If you want to filter, that's another really good functionality here. If you want Kansas, all you need to do is double click on Kansas and that's all you'll see. There's a breadcrumb in the top left corner. Every time you make any kind of action, there'll be another breadcrumb. If you filter by Kansas, just click back and it'll return everything to you.

The you save the query url, you can execute it at any time and it will pull current numbers. There are some links on the top right corner to save the query and that will create a link on your desktop with the query, or the spreadsheet option saves it as a CSV file. You can change the query url to create a custom query.

There is another tab for developers. That's the page that has the information about the API. In order to use the API, you'll have to read and accept our terms of service and request a key and it'll email you a key that's unique to every person. We ask that you attribute the data to us and that you don't misrepresent it. You can change the query url to create a custom query. One of the benefits of this, it's kind of a quasi API functionality, on the interface you can only click on a button and make it a discrete request. For example, a year would be 2017 or 2018 this one you can actually code to allow a greater than or equal to or a "like" or other SQL functions. More functionality is if you put a question mark that commodity description is actually one of the table names so I'm saying "corn", this statisticat description is another table that is set equal to "stocks" and year is greater than equal to 2017. The point of doing this is that if you save this query it'll be good forever because every quarter when we release numbers, you'll get that corn number. Another important thing that we don't talk enough about is the UUID that's what we call that big number. You can actually decode that so if you look at the URL, if you replace results with UUID/decode it will give you most of that SQL.

Attendee:	What's the lag time between a report being released and being available?

NASS:	That depends upon the release, generally it'll be within three to four minutes. When we have our lockups with the WASDE and our Crop Production that data is actually loaded during the lock up so it should be available almost immediately after lock up.

Attendee: Have you done any load testing with your API?

NASS: We do get a lot of usage. Last year we had over 13 million queries submitted over the year. We don't have any metrics of the changing performance. We do have some videos from the Help button on the top right corner. The bottom link is to download the whole file, they're updated daily almost every day for the current data.

Attendee: When are they updated?

NASS: They are updated every morning Tuesday through Saturday so that we pick up the Monday through Friday releases.

Attendee: Is there a lag time between Quick Stats appearing and the publication?

NASS: The hard copy should be much quicker there is a little delay on the database.

Attendee: Is there any reason for the delay? Sometimes it takes up to 8 minutes.

NASS: It depends on how much data is being loaded. The problem is we don't start loading, other than our crop production, we don't start loading until the data are released. It can take a few minutes. If there are multiple reports stacked up on that same release day and time that can impact the speed in which the data get out there as well.

My questions are how do you consume our data now? Do you get it from the report, do you use Quick Stats, or do you use it from a third party or some other service? The other question is, how do you want to consume our data? Are you interested in an automated give and how would you define what it gives you or do you want a visualization? Do you want a bit that you get on your mobile phone, those are those are questions that we're dealing with. If you have any ideas, please feel free to let us know.

Tahir Poduska
Hello everyone, my name is Tahir Poduska and today co-presenting with me is John Fereira, we both are developers at Cornell University and want to thank our partners at the USDA for inviting us here to do this session today. It is a bit of a technical focus on the presentation, but I'll still try to keep it more open so that everybody can have a takeaway from the presentation. We also want to get some feedback about how we can improve our website and the services we have so feel free to give us that feedback, either in person or through email.

A bit of a history behind the project. It's been a long term partnership that we have had with the USDA that started in the early 90s and the current website that you folks might be aware of has been up for 10 years now and we host more than 1900 publications from five agencies that you see on the right side there. Close to 60,000 users are subscribed to receive email notifications on the website. Besides hosting the website and sending the emails, Mann Library at Cornell also provides help desk service that you can contact us through email and phone or also in person. We are a land grant library so you can come and stop by anytime and we do answer your non-technical questions on a regular basis.

Progress has been made on the new website that we have been working on for more than a year now. It's a major upgrade to both the front end and also the infrastructure both the software and hosting system. I'll outline the technical infrastructure, but feel free to ask questions if you need information. We are still developing the system and we'll be doing a lot of data migration in the next few months to move all the publications and release data from the old site to the new site. We are going to be asking for volunteers for beta testing of the new website sometime in early summer, you'll see you that notification on the existing site and we are hoping to go live sometime this fall.

In terms of improvements, the search functionality is something that you'll notice has been improved a lot, including a lot of filters for keywords and subject areas. We've worked together with our agencies and also with the librarians at Cornell to consolidate some of the metadata that we have across the five agencies that we work with so you can find the reports easily using simple keywords or search terms. We are also improving our email delivery system from our existing Cornell based system to an external vendor and we are improving the subscription features that we know that people use a lot. That will be highly improved, you can self-register, subscribe, unsubscribe and you'll be able to download files that you want directly through your own dashboard instead of having to go through the emails or go to the website.

One thing, that is the topic of this presentation, we are going to offer for the new website is an API for accessing the metadata. Partly because we realized that a lot of people hit our website especially around some of these high volume reports and people have created these bots or spiders to crawl the website and we see a huge uptick in the requests and it's a much more costly transaction for us and on our servers. We are providing an API for people who want to implement this in their workflow. Instead of having to go directly to the website, they can write a program or a client on their business side and have a workflow setup so whenever they get a notification or an email from our system they can hit that URL and get the get the files downloaded directly through the program instead of having to go through the website.

A brief introduction of the data model, we are using an open source software called Samvera. A collection of more than 16 different universities across the United States and some museums are

working on this repository software to archive and host all of the digital products that people produce. In our case we are dividing the metadata, organizing the reports and agencies in a hierarchical manner. Some of the agencies will be using subdivisions, for example, AMS will have multiple divisions within their agency producing different publications and the publications have their own metadata, whether it's keywords or subjects or upcoming releases, how often this is released and then the publication has been released, whether it's like a monthly or weekly or daily release and this is when you'll download your files. This is the structure that the API follows as well. We'll have proper documentation in a couple of places. We are using a new tool called Swagger which is a visual tool for people to interact with the API in an easy way, it also provides an easy documentation to the system. We'll also have a GitHub repository for some of the documentation as well. We will also provide some example code base for you to interact with the API and also share some additional documentation. You can use GitHub to create user issues and give us feedback on how we can improve the system.

John Fereira
Swagger is a neat way for documenting an API. If you be stick around for the presentation on MARS, they do something similar was something called Postman, which also documents their API and provides a mechanism for trying out the API without actually having to develop the client and so we started with the documentation and then worked from the documentation to the implementation of the API itself. This is an example of the endpoints, you can see the three of them up at the top there as get endpoints. You can find metadata about all the agencies, find metadata about a specific agency by giving its acronym, AMS, NASS, ERS, or by an ID. This is an internal identifier and these find by ID endpoints are probably only useful once you're actually developing code and developing a client and able to pick off the ID from a previous API request.

As an example, in the API and the documentation for find by acronym you would see that it would render a form and allows you to select from that list to enter one of the parameters that you would be sending to the API. This is an example response, you can see this is also in JSON and it'll show some of the fields that you may get back. For example, you can see the title there and a few of the other fields that you would expect in the response. The API also documents all of the error conditions and what those responses would look like.

These are the endpoints for publication metadata. Find all, find by agency, so you can get a list of all publications by agency. If you select the World Outlook Board, you're going to get two. If you select AMS, you're going to get about 1600. Find by identifier is very useful if you already know what the identifier is. The publication, we've been using for many, many years as the example is Poultry Slaughter, you would do find by identifier "poul slau" and it would get all the metadata. The parameter specification provides a form element, you just type in the name of the identifier. This is the example of the response, you can see this is essentially our data model for a publication. These are all the fields that we've collected. Most of this has been migrated from the

legacy data on our old USDA system. There's been some data cleanup during that process, some normalization of some of the fields to make a little bit more sense. But essentially that is all the data and those fields that you could then use to render a page. For example, if you were looking for poul slaughter, you would get the full title, the full description some contact information various things that you could put up on a page from the actual data from the site.

Then we have the same thing for releases for every publication, whether it's weekly, daily, monthly. In some cases, these are one off reports and they have just one release. This is the same idea where you provide the identifier in a form, you can select a date range or at the end of that URL you add latest=TRUE, it will give you the latest release. This is the example of the response, up at the top you see that array of files names, those are all the files that are made up of the release. If you created a link from one of those URLs, you would actually allow someone to download the actual file from your page.

This is the team that's involved with the development of this new website. It's quite a number of people starting with Mary Ochs our director, the librarian and everybody else that's been involved with the project. So that's about it, we can open it up for questions.

Attendee: Is there going to be overlap between Quick Stats and this API? Is this returning files or data?

Cornell: It returns different types of information, it will actually return a copy of the publication. For example, poultry slaughter includes three files. It includes a text version of the publication, it includes a PDF version and it includes a zip file which contains all the tables. So if you downloaded that zip file, you would get that same data.

Attendee: Would the data be in a JSON format?

Cornell: The JSON format will be the link to the file you would then have to download that file and extract the contents in order to make use of it.

Attendee: Is the table file a CSV?

Cornell: It's a zip file containing the CSV files and it also has an index which has the name of each of those tables.

Attendee: Are you guys going to go back historically and convert some PDF's to CSV's? I know if you go back far enough, some reports are only PDFs.

Cornell: A lot of reports are very old and a lot of the very old PDFs are basically scanned paper copies. We don't create any data, all the data we get is from the agencies, are we archive and disseminate it.

Attendee: It outputs html code that I can use for a website?

Cornell: Not quite.

Attendee: Secondly, and this would be easier because most of us in the room are not coders, but can you put it together. For instance, supply and demand on the monthly reports would be an embeddable HTML code that we could drop into our websites in some form that would dynamically update so we don't have to cut and paste. It would be really nice to be able to pull that off.

Cornell: I've done this sort of thing, it would be specific report by report.

Attendee: I was thinking of the supply and demand report, it's there, it has all of the numbers, we don't need you to change it, we just need to be able to publish it at 11:00 am on report day and it just changes automatically.

Cornell: We created an open repository on GitHub that we're going to have all of our examples. And so as we see these sort of use cases we can create those examples and post them. You may have to modify them the bit but that's the HTML code, you probably say okay, I want to have a report that shows me the latest release, the title, the description, contact information as a single web page and will always render that latest copy.

Quick Stats

RICH HOLCOMB / JONATHAN STRAIGHT

DATA USERS' MEETING

APRIL 24, 2018

Objective:

- Discuss methods to access NASS data
  - Quick Stats Lite
  - Quick Stats
  - Quick Stats API

https://www.nass.usda.gov/Quick_Stats/Lite/index.php

1. Single selections through View
2. Multiple selections for Year and Location
3. Get Data for results

https://www.nass.usda.gov/Quick_Stats/Lite/result.php?B29B38D5-6276-3195-900D-B53F4B9B685F

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National Agricultural Statistics Service

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Statistics by State

You are here: Home / Quick Stats / Lite

Quick Stats

Quick Stats Lite Results

| Continue analysis in Quick Stats 2.0 | Download a CSV of this dataset |

Stocks - Quarterly for CORN

YEAR	LOCATION	REFERENCE PERIOD	COMMODITY	GRAIN in BU	OFF FARM, GRAIN in BU	ON FARM, GRAIN in BU
2017	IDAHO	FIRST OF DEC	CORN	(D)	8,435,000	(D)
2017	ILLINOIS	FIRST OF MAR	CORN	1,395,422,000	755,422,000	640,000,000
2017	ILLINOIS	FIRST OF JUN	CORN	882,123,000	497,123,000	385,000,000
2017	ILLINOIS	FIRST OF SEP	CORN	381,123,000	308,123,000	73,000,000
2017	ILLINOIS	FIRST OF DEC	CORN	2,113,104,000	1,013,104,000	1,100,000,000
2017	INDIANA	FIRST OF MAR	CORN	529,701,000	229,701,000	300,000,000
2017	INDIANA	FIRST OF JUN	CORN	299,983,000	144,983,000	155,000,000
2017	INDIANA	FIRST OF SEP	CORN	132,650,000	98,650,000	34,000,000
2017	INDIANA	FIRST OF DEC	CORN	809,110,000	254,110,000	555,000,000
2017	IOWA	FIRST OF MAR	CORN	1,714,890,000	714,890,000	1,000,000,000
2017	IOWA	FIRST OF JUN	CORN	1,146,558,000	486,558,000	660,000,000
2017	IOWA	FIRST OF SEP	CORN	504,069,000	344,069,000	160,000,000
2017	IOWA	FIRST OF DEC	CORN	2,383,471,000	893,471,000	1,490,000,000
2017	KANSAS	FIRST OF MAR	CORN	292,624,000	213,624,000	79,000,000
2017	KANSAS	FIRST OF JUN	CORN	159,486,000	119,486,000	40,000,000
2017	KANSAS	FIRST OF SEP	CORN	64,881,000	55,781,000	9,100,000
2017	KANSAS	FIRST OF DEC	CORN	467,004,000	317,004,000	150,000,000
2017	KENTUCKY	FIRST OF MAR	CORN	71,235,000	29,235,000	42,000,000

https://quickstats.nass.usda.gov/

1. What, Where, When – start anywhere
2. Each selection limits results
3. Select and move pointer out of box to update
4. Maximum of 50,000 records returned
5. Get Data button enabled when limited to 50,000 records

USDA United States Department of Agriculture
**National Agricultural Statistics Service**

Quick Stats

Home | Recent Statistics | Developers | Help

Double click any cell below to filter the data by that item. Right click on column heading to pivot or hide columns.

Navigation History: Data->Pivot: Data Item

Save :: Spreadsheet :: Printable :: Map :: (180 rows)

Program	Year	Period	Geo Level	State	State ANSI	watershed_cod	Commo	Domain	Domain Category	CORN, GRAIN - STOCKS, MEASURED IN BU - VALUE	CORN, GRAIN - STOCKS, MEASURED IN BU - CV (%)	CORN, OFF FARM, GRAIN - STOCKS, MEASURED IN BU - VALUE	CORN, OFF FARM, GRAIN - STOCKS, MEASURED IN BU - CV (%)	CORN, ON FARM, GRAIN - STOCKS, MEASURED IN BU - VALUE	CORN, ON FARM, GRAIN - STOCKS, MEASURED IN BU - CV (%)		
SURVEY	2017	FIRST OF SEP	STATE	IDAHO	16	00000000	CORN	TOTAL	NOT SPECIFIED	(D)	...	3,290,000	...	(D)	...		
SURVEY	2017	FIRST OF MAR	STATE	IDAHO	16	00000000	CORN	TOTAL	NOT SPECIFIED	(D)	...	6,447,000	...	(D)	...		
SURVEY	2017	FIRST OF JUN	STATE	IDAHO	16	00000000	CORN	TOTAL	NOT SPECIFIED	(D)	...	(D)	...	(D)	...		
SURVEY	2017	FIRST OF DEC	STATE	IDAHO	16	00000000	CORN	TOTAL	NOT SPECIFIED	(D)	...	8,435,000	...	(D)	...		
SURVEY	2017	FIRST OF JUN	STATE	ILLINOIS	17	00000000	CORN	TOTAL	NOT SPECIFIED	882,123,000	...	497,123,000	...	385,000,000	...		
SURVEY	2017	FIRST OF SEP	STATE	ILLINOIS	17	00000000	CORN	TOTAL	NOT SPECIFIED	381,123,000	...	308,123,000	...	73,000,000	...		
SURVEY	2017	FIRST OF DEC	STATE	ILLINOIS	17	00000000	CORN	TOTAL	NOT SPECIFIED	2,113,104,000	...	1,013,104,000	...	1,100,000,000	...		
SURVEY	2017	FIRST OF MAR	STATE	ILLINOIS	17	00000000	CORN	TOTAL	NOT SPECIFIED	1,395,422,000	...	755,422,000	...	640,000,000	...		
SURVEY	2017	FIRST OF DEC	STATE	INDIANA	18	00000000	CORN	TOTAL	NOT SPECIFIED	809,110,000	...	254,110,000	...	555,000,000	...		
SURVEY	2017	FIRST OF MAR	STATE	INDIANA	18	00000000	CORN	TOTAL	NOT SPECIFIED	529,701,000	...	229,701,000	...	300,000,000	...		
SURVEY	2017	FIRST OF JUN	STATE	INDIANA	18	00000000	CORN	TOTAL	NOT SPECIFIED	299,983,000	...	144,983,000	...	155,000,000	...		
SURVEY	2017	FIRST OF SEP	STATE	INDIANA	18	00000000	CORN	TOTAL	NOT SPECIFIED	132,650,000	...	98,650,000	...	34,000,000	...		
SURVEY	2017	FIRST OF MAR	STATE	IOWA	19	00000000	CORN	TOTAL	NOT SPECIFIED	1,714,890,000	...	714,890,000	...	1,000,000,000	...		
SURVEY	2017	FIRST OF JUN	STATE	IOWA	19	00000000	CORN	TOTAL	NOT SPECIFIED	1,146,558,000	...	486,558,000	...	660,000,000	...		
SURVEY	2017	FIRST OF SEP	STATE	IOWA	19	00000000	CORN	TOTAL	NOT SPECIFIED	504,069,000	...	344,069,000	...	160,000,000	...		
SURVEY	2017	FIRST OF DEC	STATE	IOWA	19	00000000	CORN	TOTAL	NOT SPECIFIED	2,383,471,000	...	893,471,000	...	1,490,000,000	...		
SURVEY	2017	FIRST OF SEP	STATE	KANSAS	20	00000000	CORN	TOTAL	NOT SPECIFIED	64,881,000	...	55,781,000	...	9,100,000	...		
SURVEY	2017	FIRST OF MAR	STATE	KANSAS	20	00000000	CORN	TOTAL	NOT SPECIFIED	292,624,000	...	213,624,000	...	79,000,000	...		
SURVEY	2017	FIRST OF DEC	STATE	KANSAS	20	00000000	CORN	TOTAL	NOT SPECIFIED	467,004,000	...	317,004,000	...	150,000,000	...		
SURVEY	2017	FIRST OF JUN	STATE	KANSAS	20	00000000	CORN	TOTAL	NOT SPECIFIED	159,486,000	...	119,486,000	...	40,000,000	...		
SURVEY	2017	FIRST OF DEC	STATE	KENTUCKY	21	00000000	CORN	TOTAL	NOT SPECIFIED	149,524,000	...	29,524,000	...	120,000,000	...		
SURVEY	2017	FIRST OF MAR	STATE	KENTUCKY	21	00000000	CORN	TOTAL	NOT SPECIFIED	71,235,000	...	29,235,000	...	42,000,000	...		
SURVEY	2017	FIRST OF JUN	STATE	KENTUCKY	21	00000000	CORN	TOTAL	NOT SPECIFIED	31,748,000	...	14,748,000	...	17,000,000	...		
SURVEY	2017	FIRST OF SEP	STATE	KENTUCKY	21	00000000	CORN	TOTAL	NOT SPECIFIED	10,967,000	...	6,267,000	...	4,700,000	...		
SURVEY	2017	FIRST OF SEP	STATE	LOUISIANA	22	00000000	CORN	TOTAL	NOT SPECIFIED	(D)	...	5,723,000	...	(D)	...		

Back

Abbreviations and Symbols

USDA United States Department of Agriculture
National Agricultural Statistics Service

Quick Stats

QuickStats API

Using QuickStats API
QuickStats API requests utilize input parameters based on the concept of What, Where and When.

- What parameters refer to a commodity, data item or subject area.
- Where parameters refer to a location or geographic level such as the entire United States, state, county, district, or ZIP code.
- When parameters refer to a time such as year and frequency such as monthly.

QuickStats API Input
The QuickStats API has three resources you can use to retrieve NASS published estimate data and properties, in combination with the "WHAT" and/or "WHERE" and/or "WHEN" parameters you specify.
See Parameter Definitions and Operators for definitions and types. If you have not already obtained an API key, do so now before proceeding.
Here are the resources, their URIs and examples:

1) GET /api/api_GET: accepts a combination of "WHAT" and/or "WHERE and/or "WHEN" parameters and return maximum of 50K records
http://quickstats.nass.usda.gov/api/api_GET/?key=api key&{parameter ... parameter}&format={json | csv | xml}&callback={function name}
  Note: *callback parameter needs only for using JSONP*
  Example of /api/api_GET request and its output.

2) GET /api/get_param_values: accepts a parameter name and return all possible values of the parameter.
http://quickstats.nass.usda.gov/api/get_param_values/?key=api key&param={parameter}

Example of get values of sector_desc parameter:
GET   http://quickstats.nass.usda.gov/api/get_param_values/?key=api key&param=sector_desc

Return   {"sector_desc":["ANIMALS & PRODUCTS","CROPS","DEMOGRAPHICS","ECONOMICS","ENVIRONMENTAL"]}

3) GET /api/get_counts: accepts a combination of "WHAT" and/or "WHERE" and/or "WHEN" parameters and return the number of counts
http://quickstats.nass.usda.gov/api/get_counts/?key=api key&{parameter ... parameter}

Example of get number of rows of corn in VA since 2012:
GET   http://quickstats.nass.usda.gov/api/get_counts/?key=api key&commodity_desc=CORN&year__GE=2012&state_alpha=VA

Return   {"count":"27"}

QuickStats API Output

- A request will return the published estimate for a given set of call parameters.
- The api_GET resource supports three different output formats: JSON(default), XML or CSV.
- The output format is identified by using the format parameter in the API request

Error messages

Introduction

Terms of Service

Usage

Request API Key

Web Interface Saved Query (2017-2018 Corn Stocks):

https://quickstats.nass.usda.gov/results/50158376-9AA2-39FA-AF24-852FBDFA499D

Web Interface Saved Pivoted Query:

https://quickstats.nass.usda.gov/results/50158376-9AA2-39FA-AF24-852FBDFA499D#C88DDD2E-FC15-33F2-B4AC-9D6CD18BDD8F

Web Interface 'Enhanced' Selection (year >= 2017 Corn Stocks):

https://quickstats.nass.usda.gov/?commodity_desc=CORN&statisticcat_desc=STOCKS&year__GE=2017

Web Interface 'Enhanced' Saved Pivoted Query:

https://quickstats.nass.usda.gov/results/86C34046-AA53-3FFE-A999-4A06E2C90612#6A940A5F-DA4C-3C90-8209-FF8C56A3C5AA

*tip: replace /results/ with /uuid/decode/ to help understand query:

https://quickstats.nass.usda.gov/uuid/decode/86C34046-AA53-3FFE-A999-4A06E2C90612#6A940A5F-DA4C-3C90-8209-FF8C56A3C5AA

API (year >= 2017 Corn Stocks):

https://quickstats.nass.usda.gov/api/api_GET/?key=C65F7136-C640-323E-AF08-FF576C0C678E&commodity_desc=CORN&year__GE=2017&statisticcat_desc=STOCKS&format=JSON

Quick Stats

QuickStats tutorial videos

- **QuickStats**: NEW! Quick Stats Tutorial Video (3:05)

- **Tutorial Video One** : Quick Stats Overview - (5:30)

- **Tutorial Video Two** : Quick Stats Query Basic - (4:30)

QuickStats documentation

- **QuickStats glossary**

- **QuickStats online help documentation**

- **Parameters definition documentation**

For developers/Programmers

- **Quickstats API**

- **Download QuickStats Data (*.gz)** - the data files will be updated daily

We are currently exploring next-generation Quick Stats options

- How do you consume NASS data?
  - Report
  - Quick Stats/API
  - Non-NASS Product or Service

- How would you like to consume data?
  - Quick Stats (interactive)
  - API (automated)
  - Highlight file (Text or JSON)
  - Visualization
  - Mobile app

- Feedback
  - https://www.nass.usda.gov/Quick_Stats/Feedback/index.php

United States Department of Agriculture
Economics, Statistics and Market Information System

USDA ESMIS Metadata API

Tahir Poduska & John Fereira (Cornell University)

2018 Data Users' Meeting - Chicago, IL

April 24, 2018

USDA ESMIS Website

- Long term partnership between 5 USDA agencies and Mann Library, Cornell University
- Hosts current and historic publications and releases
    - *~1900 publications and their current and historical releases*
- User Subscription and email notification for new releases
    - *~58,000 subscribers, more than a million email notification per month*
- Mann Library provides email and phone support to website users

Partners

Agricultural Marketing Service (AMS)
Economic Research Service (ERS)
Foreign Agricultural Service (FAS)
National Agricultural Statistics Service (NASS)
World Agricultural Outlook Board (WAOB)

Albert R. Mann Library, Cornell University
United States Department of Agriculture

Developed & supported by:

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Phone: (607) 255-5406
Email: usda-help@cornell.edu

United States Department of Agriculture
Economics, Statistics and Market Information System

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Browse By: Agency ▾   Subject ▾   Release Dates ▾   My Subscriptions

Quick Search

Enter search terms...

All agencies except AMS ▾   ?

☐ Title Only   Submit

Advanced Search • Search Tips

Today's Reports:
• **Broiler Hatchery**: Released on April 11, 2018 at 3:00 PM

The USDA Economics, Statistics and Market Information System (ESMIS) contains nearly 2,500 reports and datasets from several agencies of the U.S. Department of Agriculture (USDA). These materials cover U.S. and international agriculture and related topics. Most reports are text files that contain time-sensitive information. Most data sets are in spreadsheet format and include time-series data that are updated yearly.

Partners

ESMIS is a joint effort between several key agencies within the USDA and Mann Library at Cornell University. Each partner agency/institution is listed below.

Agricultural Marketing Service AMS

AMS Website | Key Contacts

The Agricultural Marketing Service (AMS) develops quality grade standards for agricultural commodities, administers marketing regulatory programs, agreements and orders, and purchases food for USDA food assistance programs. AMS is also home to the Market News Service.

The Market News Service (Market News) provides current, unbiased information on supply, demand, prices, movement, location, quality, condition, and other market data on agricultural products in specific markets and marketing areas - both domestic and international. This information is supplied to buyers and sellers, producers and handlers, transportation and logistics companies, insurance and lending institutions, and others in the marketing chain, including consumers. The information reported by Market News provides a high level of market transparency that contributes to the orderly marketing of agricultural commodities and helps to promote fair trade for all market participants. The market information also supports government policy makers and is widely used for value determinations, such as in courts and mediation.

New USDA ESMIS Website

New Features:

- Efficient and improved search
- Improved user experience
- Improved User dashboard with subscription management and flexible file download options.
- Better email service (self registration, subscription/unsubscription)
- Improved metadata for agencies, publications and releases
- New API for access to agency, publication, and release metadata and file downloads.

Modern Infrastructure:

- Based on Hyrax, Samvera open source software
- Fedora repository, Solr search indexes and Blacklight interface
- Amazon Web Services infrastructure

Timeline

Data Migration (Late Spring 2018)

Beta Release (Early Summer 2018)

Live (Fall 2018)

Sign up for beta testing
usda-help@cornell.edu

USDA
United States Department of Agriculture
Economics, Statistics and Market Information System

English

Search Publications

Enter a keyword to search over 3500 publications

BROWSE BY
AGENCY ⌄   CATEGORY ⌄   ALL PUBLICATIONS

Home   About   Help   Contact

The USDA Economics, Statistics and Market Information System (ESMIS) contains over 3,500 publications from five agencies of the U.S. Department of Agriculture (USDA). These materials cover U.S. and international agriculture and related topics. Mann Library at Cornell University developed and maintains this site.

© 2017 USDA Economics, Statistics and Market Information System

Partners
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Albert R. Mann Library, Cornell University
United States Department of Agriculture

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ESMIS Data Model and Terminology

Data Model
- Portland Commons Data Model (PCDM)
- Follows Ag Data Commons guidelines for Metadata Schema
- Accessible through the website and the API

Metadata Improvements
- Improved the existing metadata fields
- Consolidated the metadata from 5 agencies to provide a better search experience to users

```
Agency ──────┐
  │          ▼
  │       Division
  │          │
  ▼          │
Publication ◄┘
  │
  ▼
Release
  │
  ▼
Files
```
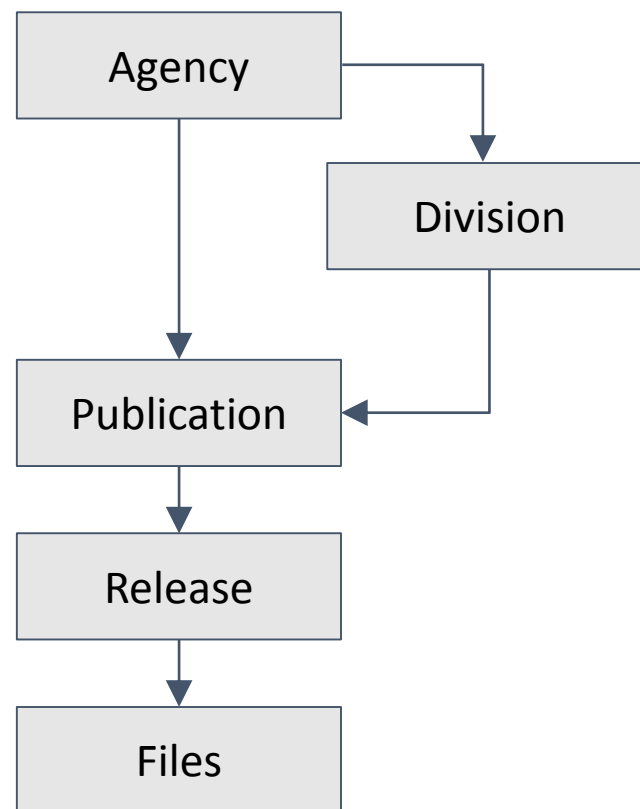
API and Documentation

- Public GitHub Repository for API documentation, code examples, user issues and technical support
- Swagger UI documentation and examples, fully documented API with examples you can try on the website
- JWT token based authentication to access the metadata
- JSON response (application/json)

Agency API endpoints

Endpoint documentation

agency Services about agencies

| GET | /agency/findAll finds All Agencies |

| GET | /agency/findByAcronym/{acronym} finds Agency Metadata by acronym |

| GET | /agency/findById/{id} find Agency by ID |

Parameter documentation

| GET | /agency/findByAcronym/{acronym} finds Agency Metadata by acronym |

finds Agency Metadata by acronym

Parameters

Name	Description
acronym * required array [string] (path)	AgencyAcronym nass ers waob ams

Agency API response

GET /agency/findAll finds All Agencies

Return a list of all agencies

Server response

Code

Details

200

Response body

```
[
  {
    "id": "4b29b596v",
    "title": [
      "Economic Research Service"
    ],
    "acronym": [
      "ERS"
    ],
    "contact_email": [
      "ers@ers.usda.gov"
    ],
    "contact_phone": [
      "202-694-5139"
    ],
    "location_city": [
      "Washington"
    ],
    "location_state": [
      "DC"
    ],
    "homepage_url": [
      "http://www.ers.usda.gov/"
    ]
  },
  {
    "id": "hm50tr726",
    "title": [
      "National Agricultural Statistics Service"
    ],
    "acronym": [
      "NASS"
    ],
    "contact_email": [
```

Publication API endpoints

Endpoint documentation

publication   Services about publications

| GET | **/publication/findAll**   Returns publications |

| GET | **/publication/findByAgency/{agencyID}**   find Publication by Identifier |

| GET | **/publication/findById/{id}**   find Publication by ID |

| GET | **/publication/findByIdentifier/{identifier}**   find Publication by Identifier |

| GET | **/publication/search**   Search Publications by Term |

Parameter documentation

| GET | **/publication/findByIdentifier/{identifier}**   find Publication by Identifier |

find Publication with Identifier (e.g. wasde)

Parameters

Name	Description
identifier * required **string** *(path)*	Identifier of publication that needs to be fetched wasde

Publication API response
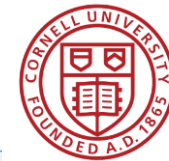
GET `/publication/findByAgency/{agencyID}` find Publication by Identifier

find Publications for Agency (e.g. nass)

Server response

Code	Details
200	**Response body**

```
[
  {
    "id": "2j62s484w",
    "agency": [
      "National Agricultural Statistics Service"
    ],
    "title": [
      "Alfalfa Seed"
    ],
    "contact_organization": [
      "National Agricultural Statistics Service"
    ],
    "contact_email": [
      "nass@nass.usda.gov"
    ],
    "keywords": [
      "seedling production",
      "yields",
      "alfalfa"
    ],
    "frequency": [
      "Annually"
    ],
    "status": [
      "Inactive"
    ],
    "subscribable": "No",
    "resource_type": [
      "Report"
    ],
    "subject": [
      "Crops and Crop Products:Grains and Oilseeds"
    ],
    "description": [
      "This publication reported on the alfalfa seed crop, including area harvested, yield and production, as well as carryover and supply.         "
    ],
    "identifier": [
      "AlfaSeed"
    ],
    "agency_acronym": [
      "NASS"
    ]
  },
  {
    "id": "2b88qc202",
    "agency": [
      "National Agricultural Statistics Service"
    ],
    "title": [
```

Release API endpoints

Endpoint documentation

release Services about releases

GET	/release/findById/{releaseID} find release by releaseID

GET	/release/findByIdentifier/{identifier} find releases by identifier

GET	/release/findByPubId/{publicationId} find releases by pubid

Parameter documentation

GET	/release/findByIdentifier/{identifier} find releases by identifier	🔒

find releases by identifier (e.g. wasde)

Parameters   [Cancel]

Name	Description
identifier * required string (path)	Identifier of publication `wasde`
latest string (query)	The latest release only for the publication(true or false) `true ▾`
start_date string (query)	The start date range for releases of a publication(mm-dd-yyyy) . Must be used together with 'end_date' `01-01-2017`
end_date string (query)	The end date range for releases of a publication(mm-dd-yyyy). Must be used together with 'start_date' `06-30-2017`

Release API response

GET /release/findByIdentifier/{identifier} find releases by identifier

find releases by identifier (e.g. wasde)

Server response

Code   **Details**

200
                  Response body

```
[
  {
    "id": "5x21tf651",
    "agency": [
      "World Agricultural Outlook Board"
    ],
    "files": [
      "http://                              /downloads/pn89d673w?locale=en",
      "http://                              /downloads/d504rk556?locale=en",
      "http://                              /downloads/mw22v557c?locale=en",
      "http://                              /downloads/gt54kn16z?locale=en"
    ],
    "title": [
      "2017-06-09 : World Agricultural Supply and Demand Estimates"
    ],
    "release_datetime": "06/09/2017",
    "agency_acronym": [
      "WAOB"
    ]
  },
  {
    "id": "736664720",
    "agency": [
      "World Agricultural Outlook Board"
    ],
    "files": [
      "http://                              /downloads/c534fp16v?locale=en",
      "http://                              /downloads/nc580m941?locale=en",
      "http://                              /downloads/th83kz59h?locale=en",
      "http://                              /downloads/9z9030184?locale=en"
    ],
    "title": [
      "World Agricultural Supply and Demand Estimates"
    ],
    "release_datetime": "05/10/2017",
    "agency_acronym": [
      "WAOB"
```

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Director of Library Systems

USDA
United States Department of Agriculture
Economics, Statistics and Market Information System
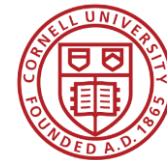
THANK YOU

Any questions

Partners

Agricultural Marketing Service (AMS)
Economic Research Service (ERS)
Foreign Agricultural Service (FAS)
National Agricultural Statistics Service (NASS)
World Agricultural Outlook Board (WAOB)

Albert R. Mann Library, Cornell University
United States Department of Agriculture

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2018 Chicago Data Users' Meeting

Breakout Session – Farm Income and Cost of Production

Presenters: Carrie Litkowski – Economic Research Service, William McBride – Economic Research Service

Note: The following write-up presents a full transcription of the session, it been lightly edited for clarity and readability.

Carrie Litkowski

I will have a brief overview, to lay the groundwork with what we produce. USDA has been producing farm income annual data for over 100 years and the farm income and wealth statistics program is designed to estimate, forecast, and explain the economic performance of the farm sector.

What do I mean by the farm sector? We're talking about the roughly 2 million farms that are in the United States that farm over 900 million acres of land and there are about 6 million people or households who are associated with these farms. The farm sector for these accounts is strictly crop, animal, and animal products production, so it doesn't include agricultural chemical production, pesticides, or seeds.

What do we produce? We produce state and national historical estimates. These are estimates for the years past, they are designed so that all the states are measured consistently so you can compare one state to another and the states will sum up to our national total. We also produce national level forecasts, these are very short run forecasts that are generally for the current calendar year.

What kind of data do we produce within these accounts? This is a screenshot of our data product page for the farm income and wealth statistics and this is where all of our data related to these accounts are located.

Each time you click on any of these links of the different types of reports a table will pop up. I'll show you an example in a minute, but the accounts largely revolve around the two measures of farm income, net farm income and net cash income. Net farm income being the broader concept of farm income because it includes both cash and noncash income as well as adjustments for inventory and that's part of our value added statement which tells you how much farm is contributing to the economy as a whole. So it's the sum of production income and farm related income and net of expenses.

We derive these estimates of farm income from the bottom up, meaning that we estimate the components first, so that we can calculate net income. This gives us a lot of detailed information that we can provide to our users. We have information on cash receipts, for example, by state and for the U.S. and we have cash receipts by commodity for over 100 crops and for about 40 livestock commodities as well. We also have government payments by farm program and we

have production expenses by different type of expenses such as feed purchased, livestock purchased. There are over 20 different expense items that we're calculating in these tables.

We also produce a U.S. level balance sheet so this gives us information on assets, debt, and wealth for the farm sector. We do forecast this data out as well for the U.S. We also have financial ratios and we also produce forecasts of farm business income, focusing on a sub sector of the farms and only looking at the larger farm businesses. We can get farm business average net cash income by typology, sales class, commodity specialization and region.

This is our data page, but we also have a topic page where you can get a narrative. If you don't want to look at the tables but want to get more of a descriptive understanding of what the latest forecast is you can go to "Summary of Data Findings" and that will present this information with some additional charts of what our latest forecast results were. If you go to the value added table for the U.S. farm economy, this is an example of what you would get. It's a tailored report, you can select the years that you want, whether you want to see current dollars or inflation adjusted dollars and then you can click on any state if you're interested in state level data. This file is downloadable to a CSV file so that you can take it and work with it on your own computer systems or on your own environment.

Our current release was in early February of this year. This is when we released our first forecast for 2018 and we also slightly updated or revised our forecast for 2017. Our next release is going to be late August of this year. This is when we will update our 2018 forecast with more current information as well as what has been seen and observed through the calendar year so far. We will also convert our 2017 forecast for the U.S. into an estimate meaning that's going to be based on more observed data like NASS survey data and administrative data on government payments. And this is also when we will have our first state level estimates for 2017, so that's one of our biggest releases. Then in November we'll go ahead and update the 2018 forecast and then it starts all over again. Next February when we'll have our first forecast for 2019.

There's lots of ways you can look at the data on the website. I showed you an example of a tailored report earlier, but we also have a number of data visualizations which give you a more graphical view of the data and maps and charts and different sort of presentations. I've got a couple of examples. We have "Get to Know Your State", this is an example where you can pick your state and get a lot of interesting information about farm economy within that state. I picked Illinois, you can see for instance what net farm income is being estimated at for 2016. There is also information on indemnities and insurance. You can also see the state rank. You have a number of different components you can rank by, I chose net farm income but you could also pick cash receipts, production expenses and a number of others. And you can see that Illinois is ranked seventh in net farm income in 2016 and you can also see in Illinois what are the top five cash receipt commodities, what are the top five production expenses. A great resource if you want information about a particular state.

We also have a data visualization on digging into the U.S. farm balance sheet.   So this is looking at our financial statement of the U.S. farm economy. There's different story points at the top that guide you through looking at assets, real estate, debt, and financial ratios. This is the financial

ratios, the solvency ratio, debt to asset, and debt to equity ratio over time and you can select the number of years you want to see.

A third data visualization is our Farm Income Atlas. This is if you want to look at the data more by component rather than by state, so you can take a particular component. In this example I chose soybean cash receipts and we can see in the map which states produce soybeans and cash receipts in 2016 and see that Iowa had the largest dollar value of sales in 2016. And you can see where all the other states rank as well. You can pick multiple commodities, or you can look at farm related income, government payments and production expenses, as just an example.

We have a lot of frequently asked questions. If you go to our data page, there is a link to a full list of frequently asked questions. We get a lot of questions about our terms, what are our definitions of the different items. For instance, the biggest one is: "What's the difference between net cash income and net farm income?" I hinted at this earlier that net farm income is a broader measure that includes both cash and noncash income and expenses and it also adjusts for year to year changes in inventory. That's the short answer. But there's more information on our website. "How and why are our forecasts and estimates revised?" They are revised in order to incorporate new input data or better data or observed data, especially when we go from having a forecast to an estimate, when we're actually putting survey data or administrative data from the agencies that are making payments for these different government payment programs, for example. How are they revised? We have another data visualization, it's called our forecast evolution and that allows you to see how our forecast gets revised over the year because, as you saw, we forecast a single year four different times. So, how often are we getting it right or getting the direction right. The data visualization will allow you to see how we do on average and judge for yourself how accurate you think our forecasts are. "Are cash receipts reported by NASS identical to the value of production data reported by NASS?" The answer is sometimes. For some crops and livestock commodities we have to make adjustments. For instance, for CCC loan activity or for the use of commodities on the farm (which is production that is not sold but they're consuming it on the farm) and also to convert the NASS crop year data into calendar data. The ERS forecast is a calendar year measure of farm income not a crop year. For more information I encourage you to see our website for the full answers that have more depth.

These releases are covered highly in the media. It's one of USDA's most frequently cited statistics. This is just an example of some of the news media coverage that we've gotten this year. Many, national and local media outlets report on our release --talking about how with the last release we saw a pretty low level for farm income. This drop in farm income was interesting to a lot of the media outlets. They also will report on different things like our balance sheet or debt service ratios. We're always looking for feedback to make these accounts better and more useful to people. Last year we assembled an external panel of experts to review the farm income and wealth statistics program. They were tasked with the responsibility of evaluating the methods used to drive our forecasts and the data that we use and to evaluate how we distribute and disseminate this data to our stakeholders and to data users and also to suggest improvements. We should be seeing feedback from them this year and into next year and we also highly value and want to solicit your comments and feedback on issues that you've run into as you use the data or

as you're considering using the data. The most direct form or way to give us your feedback, other than here today, is to email us at FARMINCOMETEAM@ERS.USDA.gov. This goes directly to me and the people on the team. I'll get it directly and will reply quickly or you can also email me personally. I'll take a couple of questions if there are questions now and then they'll talk about the cost and returns.

Attendee: Along with the net cash receipts, do you have bushels sold so you can back into an average farm price by state?

ERS: Not that we release. We release the data only on the value of the sales, but it is based on quantity data information from NASS on bushels depending on the data availability. Where NASS has data on bushels sold we're using it. Where they have production, we will use production.

Attendee: When you do your inventory adjustment, always a pretty fuzzy thing, do you look at the December 1st corn stocks estimate and base it off that? Year to year basis? Where do you come up with those numbers?

ERS: We don't use the stocks data. Instead, what we're essentially doing is taking a crop year annual sales or production number from NASS and then NASS produces the monthly marketing percentages and so then we use that to convert the production data into our calendar year.

Attendee: Even though that's based on past information?

ERS: Those aren't a forecast, obviously. There's a little lag in the data availability. But from that we're able to separate what was sold from current year production, because that's what we're trying to get in the net farm income, from what was sold from the prior calendar year production. The inventory change is essentially a residual.

Attendee: How about depreciation, how do you guys come up with that?

ERS: That I know a little bit less about but I believe it largely comes from data from the Agricultural Resource Management Survey (ARMS) on capital expenditures and then we apply a depreciation schedule to the expenditures.

Attendee: The state export data is it still lagged by a year?

ERS: The state export that's a different data product. But it is largely based off the cash receipts here so that is probably the reason for the lag. We can't get these cash receipt estimates out until about six months after the end of the calendar year and then they need time to convert it to exports.

Attendee: Your balance sheet information, you are strictly using market value not cost?

ERS: We use market value. We might have time for questions later. Feel free to seek me out. Thank you.

William McBride

All right, let me start off by contrasting what Carrie does as to what this product is. Carrie generated net farm income balance sheet information in the aggregate for states for the national, the U.S. and so forth. What we're doing here in the Commodity Costs and Returns product is for a set of 12 commodities, we're producing estimates of the cost per acre for crops and the cost per hundredweight for milk and for hogs, costs per cow for beef cattle. They're actually vastly different products and I like to start off by talking about why we do it. Why do we do this product? It dates back to the 1973 Farm Bill in which the Secretary of Agriculture was mandated to conduct a cost of production study and it specifically mentions wheat, feed grain, cotton, dairy commodities under various production practices and establish a national current weighted average cost of production. It goes on to say this study shall be updated annually and even mentioned some of the costs that are required to be included in it. This mandate is the basis for why this product got started and why we continue to do it is part of the permanent farm bill legislation now, meaning it continues to be rolled over and we continue to produce this product under this mandate.

Just a brief overview of the product, we have national and regional accounts for 12 commodities dating back to 1975. So the product is over 40 years old now. It's based on data from commodity surveys as part of the Agricultural Resource Management Survey. It's USDA's primary survey of the financial conditions in the U.S. farm sector. There are specific versions that we use to do cost and return estimates. These versions are done on a 4-8 year rotating basis for most commodities. We're asked to produce an estimate every year but not every year is based on a survey, it's based on a survey that establishes a baseline and then we set estimates between surveys that are updates based on price, acreage, production changes until we do a new survey and establish a new baseline and move forward from that. Every year we're doing different commodity surveys and from there we establish baselines and move forward.

The methodology is that recommended by what at the time was called the American Agricultural Economics Association now it's called the Agriculture and Applied Economics Association today. They've put out a set of recommendations for doing commodity clustering turn estimates, which we follow as close as possible to those recommendations. It gives us a very defensible basis for what we do in these estimates.

This slide shows an overview of the project in four points. First thing it shows is what commodities we do estimates for. You'll see the nine major field crop commodities and three livestock commodities. It shows in black what numbers we are mandated to produce. As you saw in the first slide, we operate under congressional mandate that specifically mentions cotton, wheat, dairy and feed grain. So that's why we have grain sorghum, barley, corn, and oats. Now we choose to do the commodities in green. These are major commodities that compete with these other commodities for resources. Obviously, it wouldn't make much sense or wouldn't be easy to interpret a corn cost of production estimate unless you also had a soybean cost of production estimate in terms of what acreage changes are occurring.

The next thing is the years, the third point on this slide. What these years indicate are the survey data that underlie the current estimates we have published on the website. For example, cotton data, our current numbers are up through 2016, next week we will release 2017 estimates. The cotton numbers for 2015 and 2016 are based on data from 2015. In contrast, the current numbers we have for wheat for 2016 are based on a survey we did in 2009. The further you get from the survey, the less reliable or the less dependability or confidence we have in the estimates.

The last thing on this slide is what we've got in the queue. We've done surveys for corn and dairy in 2016. A week from now on May 1, we're going to release 2017 data and we're going to put this corn 2016 over in this top lane up here and it will be used as our baseline for estimates going forward in 2016 and 2017. We're almost done with the dairy. We just finished the survey for 2017 for wheat, it'll replace this data next year and then we're in the process of working on questionnaires for soybeans and cow calf right now. That lays out where we're at with the project at this moment.

I'll briefly talk about how these commodity versions fit into the Agricultural Resource Management Survey. If you have any knowledge of the ARMS, it is done in three phases. The first phase is a screening sample that allows us to screen the list, make sure it's still a farm and identify those people who have our target commodities, in 2018 soybeans and cow calf, so that when we draw a sample we hit those people. Phase two is a crop year survey done in the fall after the harvest of the crop. So in the fall we will go out and collect information on soybean production practices and costs after the soybean crop has been harvested and it will cover the entire growing season for soybeans. In phase three we have the calendar year survey that's done after the end of the year where we have different versions of the farm costs and returns report where a lot of the farm income numbers come from. Obviously we measure cow calf and any livestock we do on a calendar year basis and not a crop year. And then we have a soybean follow on version to the phase two.

What's really important about the ARMS and what makes it unique is these linkages these lines I put in here. The screening sample allows us to identify people who have our target commodity and improve the efficiency of our sampling. The second thing is this connection between the phase two and the phase three meaning that everybody who responds here gets a follow on survey in phase three. What this allows us to do is to connect all the resource use, the production practice, the cost of production we get in phase two with the whole farm financial information, the operator demographics, and all the balance sheet information we collect in phase three. The final linkage is this vertical linkage in phase three meaning that there are questions that are common to all these questionnaires so that we can expand our analysis of farm income and farm balance sheet data by combining all these versions of the ARMS. That's a brief overview of how the ARMS works and what's planned for 2018.

Let me briefly talk about how we do cost of production. The problem of doing cost of production is a problem of allocation. Most of the farm record keeping system is for the whole farm. The problem is, how do we then get that broken down for all these items into how much of that was for the corn enterprise or how much it was for the hogs. That's the challenge we face in doing cost of production.

We use what I call four different approaches to doing this. The first one is direct costing and this is the best way of doing it because this is the price and the quantity the farmer actually paid, but we can only do this for items where the farmer can answer the questions in our survey. For example, we feel like a farmer knows on a specific selected field what the cost per acre of the purchased seed was, fertilizer, chemicals and so forth. That's a very limited set of items that we can ask him directly what those are.

Another thing is valuing input quantities. Here are inputs that are mainly homegrown inputs on the farm. For example, the farmer grows the corn he feeds the hogs. We have to assign a cost to that corn and we use an opportunity cost approach to do this. That is what the farmer could have sold that corn for so we use market prices to charge the cost of the corn. Another good example is unpaid labor where the operator's family provides labor to produce the commodity. We collect that in the survey. We estimate a wage rate based on what farm operators earn in off farm employment.

The third method is when it gets really difficult. This is things that there's no way we can go out there and ask for a selected field. For example, how much fuel you use on a selected field to produce this commodity. Even worse, how much of that tractor's capital was consumed while producing that crop on that field. We use an engineering formula that the American Society of Agricultural Engineers put out, they're getting old, but we still use these with our survey data, meaning we go in the survey we enumerate every field operation that was actually done on that field, we can use these engineering formulas to compute the cost of fuel, the cost of repairs, and compute a capital cost for the primary pulling machine and so forth.

Finally allocating whole farm expenses. This is a methodology we use on items that are not attributable to a commodity, but all the commodities must pay for. General farm overhead, things like vehicle licensing, general business expenses, farm tools. The allocation we use is we compute what the gross margin was of that commodity relative to the whole farm and use that percentage, to allocate things like overhead and taxes and insurance. It's kind of like every commodity pays based on its ability to pay for these commodities.

This slide shows what the account looks like for our typical crop commodity with the gross value of production broken down into the operating costs, allocated overhead, which are a lot of our opportunity costs of unpaid labor, of land, capital costs and the total costs and then the net returns. You can see over here we actually have variables that represent each one of these and what this means is that in our database we produce this chart for every farm in the survey so we do what we call farm level estimates and what this allows us to do are things like this analysis of the costs and returns data where we look at the unit cost distribution, ordering farms costs from lowest to highest and looking at the percent of farms that produce at various cost levels. This shows an example of two extremes. The survey was done for corn in 2001 and 2010. The marketing your average price in 2001 was $1.97. We see about 17% of producers were able to cover their total economic costs at that price. Moving to 2010 we see the costs shift up but we see the price at $5.18 where 85% of producers are able to cover costs. When we put the 2016 data on here it'll be right about in here and a price will be right about in here so it'll look a lot like 2001.

The Economic Research Service use these data in a lot of research. These data are very rich for doing research at ERS. The top row looks at some examples of products we produce using the corn data. We look at what are the characteristics of low and high cost farms. What makes farms low or high cost? We have done organic versions of the ARMS where we've computed the cost of producing organic versus conventional and compared them in reports. We've also compared our cost and return estimates to those in Argentina and Brazil, when we have had the availability of data from other places, and produced a report on the export competitiveness of the U.S. The second row, looks at some of the things we've done with livestock. As we're starting to accumulate surveys over time one of the things we're starting to do is look at how industries are changing over time. One of them we've done a lot for is the hog industry. It's been extremely dynamic looking at the changes from 1992 to 1998 to 2004 to 2009 and now 2015 with the data. In contrast, the cow calf industry doesn't change very much. What's interesting with the cow calf industry is the fact that it's so diverse. There's 700,000 out of the 2,000,000 farms that have beef cows and there's a lot of diversity out there and also we've done some work looking at dairy farm structure risk and the things that led up to the margin protection program

Moving to the interest in these data, here are some statistics on how often it's accessed and used. Looking at the web statistics, you can see that they were viewed about 53,000 times in a one year period that I measured. The corn data is most accessed about 7,845 times. It's about 21 times a day it's actually viewed. Our data products have been internally reviewed and externally reviewed. Some of the things that we're doing to respond to those reviews and improve the product are we are moving to fewer Excel files. Pivot tables where we just pivot between the regions and look at the different costs that way and provide machine readable data sheets. We're looking at this idea of the estimates between surveys and how do we move from one to the other instead of just anchoring the data to one and letting it move off and then having a discontinuity when we do another survey, we're looking at ideas and how to smooth the estimates between surveys and then we're also looking at how to add the costs and returns to this data product or this data tool we have where we look at production practices so that people can correlate the costs of production with various production practices.

Wrapping it up, here's some links for the ARMS data product with the data tool, our data product of the costs and returns and my email. I'd be happy to take any questions that you have.

Attendee: Your forecast for corn production looks pretty comparable to a lot of the university budgets but the soybean budget looks much higher than the state extension service any idea what's going on?

ERS: The one thing that you see is that almost every land grant university does some kind of budget and they all do it different. That's one of the values of this product because the fact that we do it consistently across the entire country. Typically we do a full economic cost accounting, meaning we charge for every resource used. A lot of times if you just compare the bottom lines, ours are always going to look higher.

Attendee: Even trying to smooth those out this year there seemed to be a very large discrepancy like the overhead and the labor.

ERS: I'd have to look at that it's hard for me to comment right off the top my head on the forecast. We actually do a few forecasts that you brought up that that I didn't really talk about, but we use our base numbers and move them ahead a year or two and typically report that.

Attendee: I'm excited about the wheat data that's coming out. I was wondering if you could share some details about whether it will be aggregate all wheat or wheat by class.

ERS: We've always produced estimates of all wheat but we've always reported what percentage of each type that the account produced. In our publications that would be the place where we would tend to break it out and report it by various types.

Attendee: Do you think pulses will ever make it into the survey?

ERS: The way the current budget looks, if anything else makes it in I would be surprised.

Attendee: Farm income has been under pressure the last couple years. What's the best statistic that really portrays the health of the farmer if you had to pick one?

ERS: I think you have to look at the combination. You can see net farm income, net cash income plummet in a year but then you can go to the balance sheet and see that the debt to asset ratio is still low, it's still healthy. I think if you're talking about the well-being of farmers in more general terms, maybe the balance sheet information, perhaps gives you a more stable picture or in some ways a more complete one as to what they might be facing. But I think you have to take it all together.

ERS: I think if we continue to see prices the way they are, though, that balance sheet will probably be impacted.

ERS: Yes it will and I think that's what a lot of us are looking for to see when are farm assets going to start going down and the debt start to go up. Because insurance has been keeping the debt down and farm land values have still been appreciating. We are getting to that question now, how long can that go on? I think the balance sheet has a lot of interesting things to look at.

Farm Sector Income and Wealth Data Product: A Brief Overview

2018 USDA Data Users Meeting

Carrie Litkowski

4/24/2018

Disclaimer: The views expressed are those of the author and should not be attributed to the Economic Research Service or USDA.

Farm sector summary

2+
million farms

900+
million acres

6+
million people living in farm households

Source: Farm Income and Wealth Statistics Data Product & Agricultural Census

Data and Analysis

Farm Sector Income and Wealth Statistics
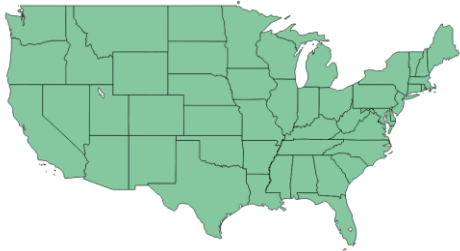
Historical State Estimates   Historical National Estimates   National Forecasts

Reports: http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics

Farm Income and Wealth Statistics

Data Files: U.S. and State-Level Farm Income and Wealth Statistics

These are the latest data concerning the farm income forecast, including the forecasts for the income statement for the U.S. farm sector, value added, cash receipts and value of production, government payments, farm production expenses, and the balance sheet. Included are historical U.S. and State-level farm income and wealth statistics. Historical/State data cover the topics of net value added and net farm income, net cash income, cash receipts and value of production, government payments, farm production expenses, and the balance sheet.

These data are released three times a year: in February, August, and November. The U.S.-level calendar-year forecast is first provided in February, and is updated in August and November. The August release converts the prior year's farm income and balance sheet forecasts to estimates, adds State-level farm income estimates, and revises previous years' estimates. The November release updates the current year's forecast.

The data below are as of February 7, 2018, except where noted. The next scheduled forecast release is August 30, 2018. These tables cover the full history of data through 2018F, where available.

Summary of U.S. Farm Income Financial Indicators

- U.S. farm sector financial indicators, 2011-2018F
  Includes the U.S. income statement and balance sheet summary.
- Farm sector financial indicators, State rankings

Farm Income Statements, U.S. and States

- Value added by U.S. agriculture (includes net farm income)
- Net cash income
- Returns to operators

Cash Receipts

Cash Receipts

- Annual cash receipts by commodity, U.S. and States, 2008-2018F
- Annual cash receipts by commodity (condensed), U.S. and States, 1910-2018F
- Ranking tables: Choose a State to get ranked commodities
- Ranking tables: Choose a commodity to get ranked States

Government Farm Program Payments

- Federal government direct farm payments by program, U.S. and States

Production Expenses

- Production expenses, U.S. and States
- Production expenses by type, State ranking
- Gross capital expenditures, U.S.

Farm Balance Sheet and Financial Ratios, U.S.

- Farm sector balance sheet and selected financial ratios
- Farm sector financial ratios
- Current and noncurrent farm sector balance sheet (includes current and working capital ratios)

Average (Farm-level) Net Cash Income, U.S.

- Farm-level average net cash income by farm typology and sales class
- Farm business average net cash income by commodity specialization and region

Charts and Maps Data Visualizations

- Charts and Maps About Your State
- Charts and Maps of U.S. Farm Sector Balance Sheet Data
- Charts and Maps of U.S. Farm Income Statement Data

Download All Data in CSV File Format

- February 7, 2018 release
- November 29, 2017 release
- August 30, 2017 release
- February 7, 2017 release

Document Map

Value added to the U.S. economy by the agricultural sector, 2010-2018F
Nominal (current dollars)

United States	2010	2011	2012	2013	2014	2015	2016	2017F	2018F
	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Value of crop production	168,122,783	199,336,795	212,907,390	233,640,195	206,024,910	183,887,331	188,986,529	183,214,729	182,736,377
Crop cash receipts	180,365,874	201,043,624	231,614,279	220,848,243	211,416,779	187,479,622	194,394,060	189,688,844	188,203,479
Cotton	7,464,640	7,303,972	8,230,448	6,515,834	7,111,320	4,756,100	5,787,072	8,074,026	7,601,469
Feed crops	55,142,761	71,733,544	82,136,536	70,835,571	65,873,669	56,919,159	55,716,912	54,718,565	53,259,358
Food grains	14,314,379	16,527,336	19,292,117	17,230,685	16,050,095	12,282,154	11,344,335	10,682,358	10,606,474
Fruits and nuts	21,612,927	24,166,286	28,107,818	29,904,334	31,930,824	28,417,919	28,808,169	24,124,849	23,559,471
Oil crops	36,544,312	35,324,388	46,925,602	47,274,387	42,620,534	35,509,006	44,141,536	41,072,652	42,877,139
Tobacco	1,335,561	1,139,738	1,347,847	1,546,501	1,715,575	1,604,909	1,336,427	1,379,972	1,504,208
Vegetables and melons	17,404,837	17,616,247	17,412,740	19,417,988	18,870,538	20,221,072	19,189,441	21,276,821	19,795,359
All other crops	26,546,456	27,232,113	28,161,171	28,122,943	27,244,224	27,769,304	28,070,167	28,359,601	29,000,001
Home consumption	85,828	75,072	106,138	160,092	239,501	258,506	197,827	191,785	191,284
Inventory adjustment	-12,328,918	-1,781,901	-18,813,027	12,631,860	-5,631,371	-3,850,797	-5,605,358	-6,665,900	-5,658,386
Value of animals and products production	140,244,693	163,752,954	169,115,600	180,981,780	214,449,343	194,144,144	165,477,931	177,448,096	176,093,469
Animals and products cash receipts	140,870,957	164,858,428	169,818,778	182,704,665	212,799,230	189,460,303	162,858,224	175,405,775	174,922,157
Dairy products, Milk	31,372,346	39,531,306	37,064,731	40,276,790	49,352,950	35,732,794	34,543,067	37,830,979	35,305,589
Meat animals	69,144,199	83,953,111	88,182,234	91,218,669	107,996,183	98,752,923	82,801,476	87,623,728	89,711,761
Miscellaneous livestock	5,664,235	5,961,598	6,283,566	6,841,177	7,063,239	6,838,860	6,825,406	7,029,495	7,230,962
Poultry and eggs	34,690,177	35,412,413	38,288,247	44,368,029	48,386,858	48,135,726	38,688,275	42,921,574	42,673,845
Home consumption	299,792	293,231	278,213	329,261	348,641	363,951	300,422	308,661	329,494
Inventory adjustment	-926,056	-1,398,705	-981,391	-2,052,146	1,301,471	4,319,890	2,319,285	1,733,660	841,819
Farm-related income	35,780,589	46,934,656	57,138,428	58,187,843	52,872,376	51,518,756	44,539,769	47,417,846	50,586,905
Forest products sold	460,131	464,657	496,202	567,838	641,434	696,218	744,015	762,339	794,240
Gross imputed rental value of farm dwellings	15,767,770	16,178,175	17,875,956	17,195,797	16,303,731	17,139,758	16,649,675	17,741,283	18,829,068
Machine hire and customwork	3,809,719	3,952,357	3,903,740	4,445,768	4,402,924	4,685,936	3,561,022	3,662,110	3,737,871
Other farm income	15,742,969	26,339,466	34,862,531	35,978,441	31,524,287	28,996,844	23,585,057	25,252,113	27,225,726
Total commodity insurance indemnities	4,776,920	9,798,312	14,551,495	15,182,494	10,409,416	8,919,387	5,701,278	7,923,045	9,704,896
Federal commodity insurance indemnities	4,574,014	9,458,373	13,905,288	14,571,270	9,270,168	8,264,899	4,343,616	5,171,204	8,923,591
Net cash rent received by operator landlords 2/	883,720	1,045,052	1,240,732	1,563,816	2,556,809	2,845,675	2,839,694	2,835,546	2,804,803
Value of agricultural sector production	344,148,065	410,024,404	439,161,419	472,809,818	473,346,629	429,550,232	399,004,229	408,080,670	409,416,750

Farm Sector Income and Wealth Statistics Timeline

Current release

February 7
2018

**Update 2018 forecast
&
First estimate of 2017 incorporating survey data**

August 30
2018

Update 2018 forecast

November 2018

Update 2018 forecast & First 2019 forecast

February 2019
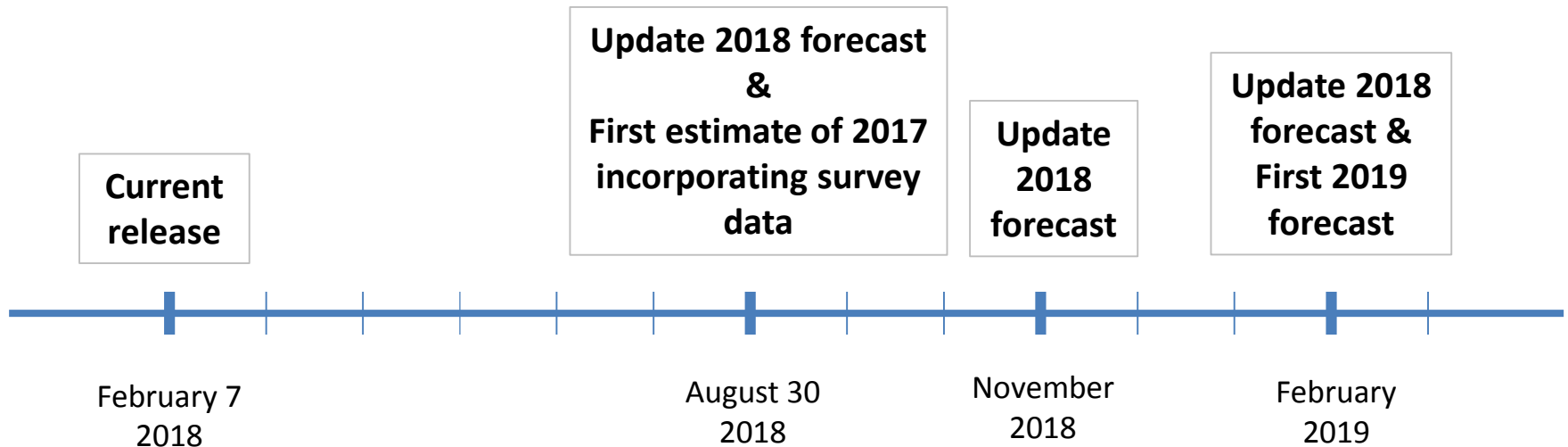
Data product updated 3 times per year.

Current Release: **February 7, 2018**

Next Release: **August 30, 2018**

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Visualizations let you dive into the financials of the farm sector

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Get to know farms in Illinois

Pick a State

Farm facts

Number of farms	**Acres of farmland**
72,200	26,700,000
Net farm income	**Government payments**
$2,256,870,000	$1,109,459,000
Federal insurance premiums	**Federal insurance indemnities**
$274,703,000	$229,840,000

Ranked by: [Net farm income ▾] [2016 ▾]

#7 Illinois

Net farm income
2008-2016

$4,474,527,000

$2,256,870,000

Top 5 cash receipts

1	Corn	$7,400,365,000
2	Soybeans	$5,730,040,000
3	Hogs	$1,213,180,000
4	Cattle and calves	$610,090,000
5	Miscellaneous crops	$448,583,000

Top 5 production expenses

1	Capital consumption*	$2,952,667,000
2	Net rent to nonoperator landlords**	$2,298,729,000
3	Fertilizer, lime, & soil conditioner	$1,870,000,000
4	Seed	$1,860,000,000
5	Pesticide	$1,130,000,000

Digging Into the U.S. Farm Balance Sheet

created by: The ERS Farm Income Team

Overview	Farm assets: total vs. real estate	Farm assets: real estate values	Farm assets: other assets	Farm debt: trends	Farm debt: by lender	Financial ratios

Select a financial ratio category

Solvency ratios ▼

Choose measure(s) to display

(Multiple values) ▼

1960 ◯━━━━━━━━━━━━━━━━━━━━━━━━━━━━━◯ 2018

🟧 Debt-to-equity ratio
🟦 Debt-to-asset ratio

Solvency ratios,1960 to 2018
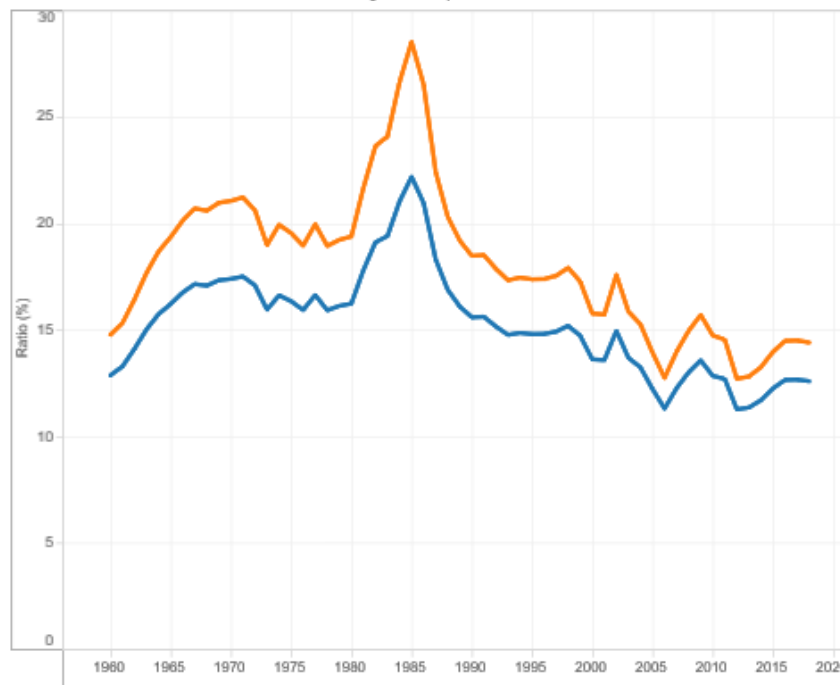
Created by: The Farm Income Team
Data source: www.ers.usda.gov/data-products/farm-income-and-wealth-statistics. Released February 7, 2018.
For definitions of the ratios, see:
www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/documentation-for-the-farm-sector-financial-ratios.

The Farm Income Atlas

created by: The ERS Farm Income Team

Cash receipts	Farm-related income	Government payments	Production expenses

Choose commodity group

- All Commoditi[+]
- Animals and products
- **Crops**

Choose a commodity type

Oil crops ▼

Choose a commodity

Soybeans ▼

Select a year

2016 ▼

Choose units

dollars ▼

Soybeans cash receipts by State in 2016

dollars

U.S. total
dollars

42,008,036,000

9,967,000   5,970,070,000

Soybeans cash receipts in 2016, dollars

IA 5,970,070,000	NE 3,158,066,000	IN 3,070,016,000	OH
IL 5,730,040,000	SD 2,511,750,000	KS	AR	MS
	ND 2,339,817,000	MI	TN	LA
MN 3,824,380,000	MO 2,192,875,000	WI 987,377,000	NC	MD
		KY 883,792,000	PA	

Soybeans cash receipts in 2016, dollars
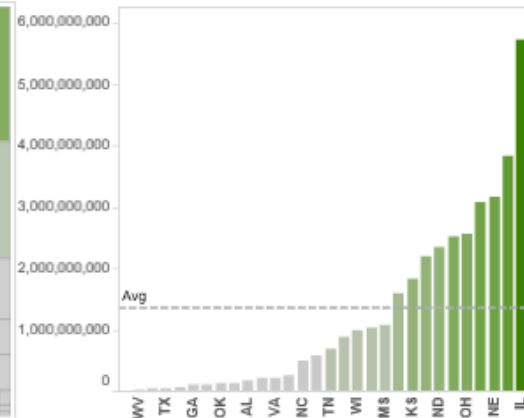
Created by: The ERS Farm Income Team.
Data source: https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx Released February 7, 2018.
Note: States without shading have no production for this commodity or are included in miscellaneous crops or all other animals and animal products.

Frequently Asked Questions

- What is the difference between net cash and net farm income?

- How and why are the estimates and forecasts revised?

- Are cash receipts reported by ERS identical to value of production reported by NASS?

- For more FAQs see https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/update-and-revision-history/faqs/

In the News

"Net Farm Income Seen Falling to Lowest Level Since 2016."
Agri Pulse 2/7/2018

"Farm Sector Profits Expected to Decline in 2018." Feedstuffs 2/8/2018

"Trends in Farm Balance Sheets over Time."
farmdocDAILY 3/13/2018

"Farm debt service ratio forecast to stabilize in 2017 and 2018."
Western Livestock Journal 4/9/2018

Feedback

- Ongoing: External committee review of farm income and wealth data product

  - ✓ Review methods and data sources
  - ✓ Evaluate data dissemination
  - ✓ Suggest improvements

- Your comments and suggestions?
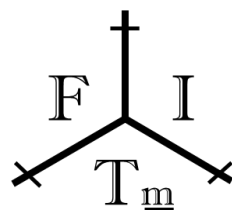
Farm Income Team

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The USDA Commodity Costs and Returns (CAR) Data Product

William D. McBride
Data Users Conference
Chicago, IL
April 24, 2018

Motivation for CAR Data

- **Agricultural and Consumer Protection Act of 1973**

"The Secretary of Agriculture…shall conduct a cost of production study of the wheat, feed grain, cotton, and dairy commodities under the various production practices and **establish a current national weighted average cost of production**. This study shall be updated annually and shall include all typical variable costs, including interest costs, a return on fixed costs, and a return for management."

- **Mandated reporting of these data is part of permanent Farm Bill legislation**

CAR Project Overview

- **National and regional accounts for 12 commodities annually from 1975**

- **Based on data from commodity surveys as part of the Agricultural Resource Management Survey (ARMS)**

- **ARMS commodity surveys are conducted every 4-8 years on a rotating basis for each commodity**

- **Estimates between surveys are updates based on price, acreage, and production changes**

- **Methods are those recommended by the American Agricultural Economics Association Task Force**

ARMS Data for CAR Estimation

Crop commodities
- Cotton   **2015**
- Oats   **2015**
- Rice   **2013**
- Peanuts   **2013**
- Soybeans   **2012**
- Grain sorghum   **2011**
- Barley   **2011**
- Corn   **2010**
- Wheat   **2009**

> **Mandated Estimates**

Livestock commodities
- Hogs   **2015**
- Dairy   **2010**
- Cow-calf   **2008**

Upcoming data
- Corn   **2016**
- Dairy   **2016**
- Wheat   **2017**
- Soybeans   **2018**
- Cow-calf   **2018**

CAR Data Collection in the 2018 ARMS
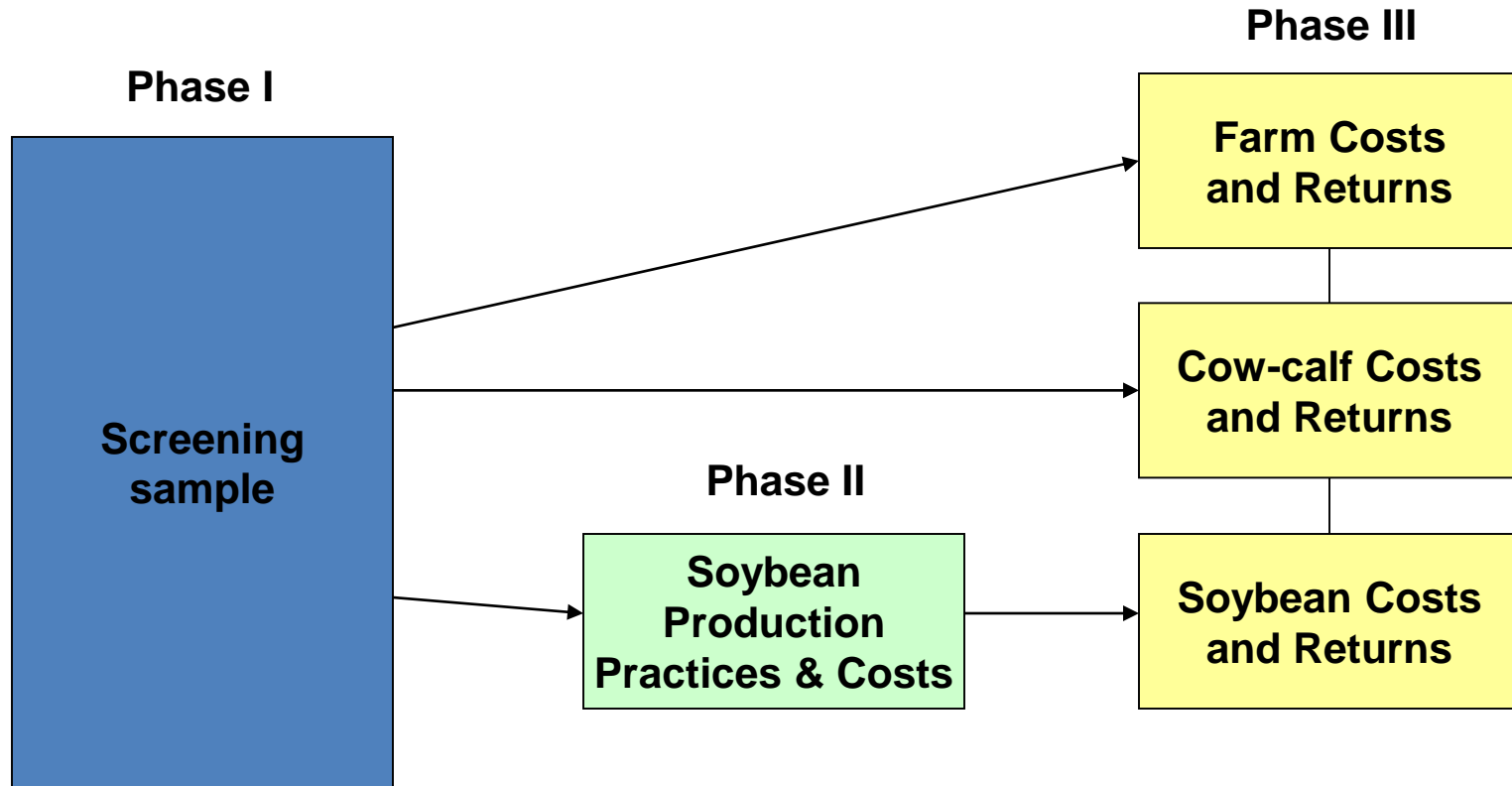
Approaches to CAR Estimation

1-Direct costing
   -Purchased input costs are taken directly from the survey
   -Examples: purchased seed, fertilizer, chemicals, custom operations

2-Valuing input quantities
   -Farm supplied or homegrown input quantities from the survey valued using relevant prices
   -Examples: homegrown seed and feed, unpaid labor, land, manure

Approaches to CAR Estimation (continued)

3-Indirect costing
  -Engineering formulas used with survey data to estimate machinery and equipment costs
  -Examples: machinery and irrigation fuel, repairs, and capital

4-Allocating whole-farm expenses
  - Rules defined to allocate farm business expenses not specific to a particular enterprise
  -Examples: general farm overhead, taxes and insurance

CAR Crop Account Format and Variables

Item	Variable Name
Gross value of production:	
[primary and secondary products]	GROSS
Operating costs:	
Seed	COSTSEED
Fertilizer	COSTFERT
Chemicals	COSTCHEM
Custom operations	COSTCUST
Fuel, lube, and electricity	COSTFLUB
Repairs	COSTREPA
Purchased irrigation water	COSTPWAT
Interest on operating capital	COSTOPCA
Total, operating costs	COSTOPER
Allocated overhead:	
Hired labor	COSTPDL
Opportunity cost of unpaid labor	COSTUPDL
Capital recovery of machinery and equipment	COSTREC
Opportunity cost of land (rental rate)	COSTLAND
Taxes and insurance	COSTTXIN
General farm overhead	COSTOVER
Total, allocated overhead	COSTALLO
Total, costs listed	COSTTOT
Value of production less total costs listed	NETTOT
Value of production less operating costs	NETOPER

CAR Data Analysis: Total Unit Cost Distribution
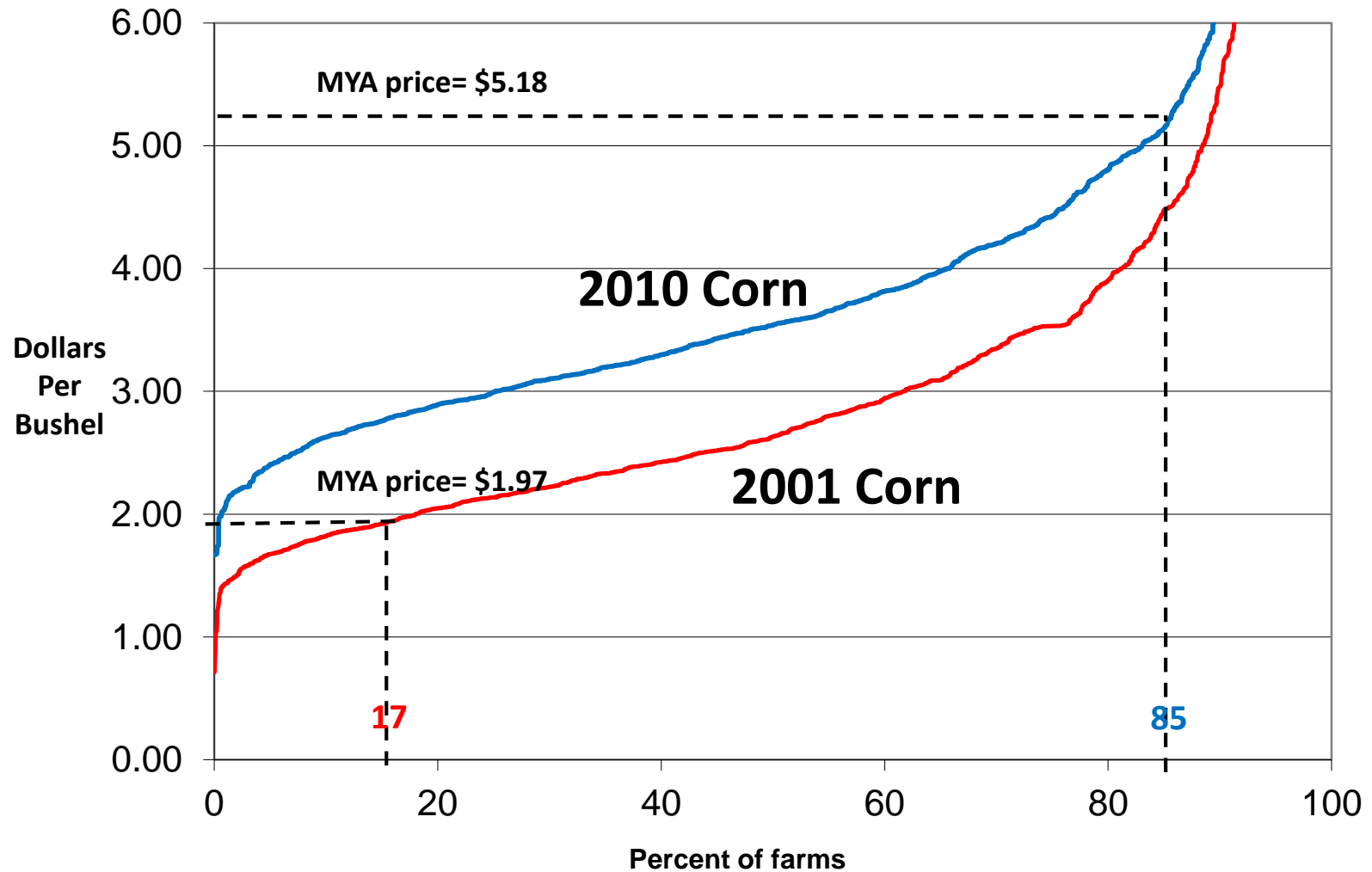
CAR Data Support Research in Diverse Areas

Characteristics and Costs of Corn Farms

USDA — United States Department of Agriculture
Economic Research Service
Economic Research Report Number 128
September 2010

Characteristics and Production Costs of U.S. Corn Farms, Including Organic, 2010

Linda Foreman
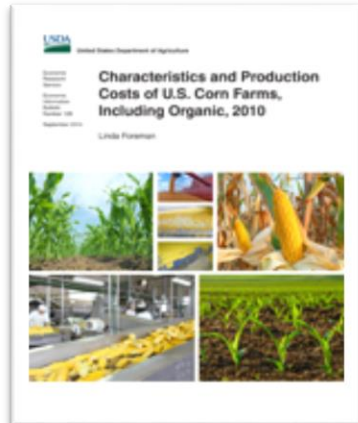
Organic Field Crop Profitability

USDA — United States Department of Agriculture
Economic Research Service
Economic Research Report Number 188
July 2015

The Profit Potential of Certified Organic Field Crop Production

William D. McBride, Catherine Greene, Linda Foreman, and Mir Ali
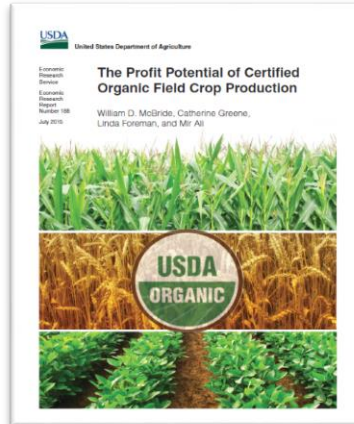
Production Costs & Export Competitiveness

USDA — United States Department of Agriculture

Corn and Soybean Production Costs and Export Competitiveness in Argentina, Brazil, and the United States

Birgit Meade, Estefania Puricelli, William McBride, Constanza Valdes, Linwood Hoffman, Linda Foreman, and Erik Dohlman
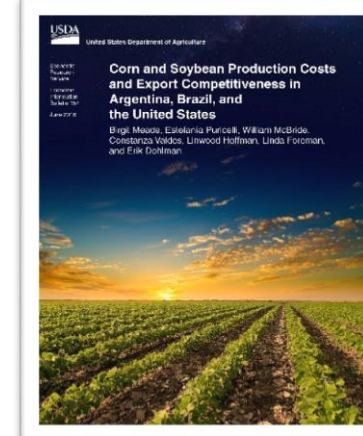
Changing Economics of Hog Production

USDA — United States Department of Agriculture

U.S. Hog Production From 1992 to 2009: Technology, Restructuring, and Productivity Growth

William D. McBride and Nigel Key
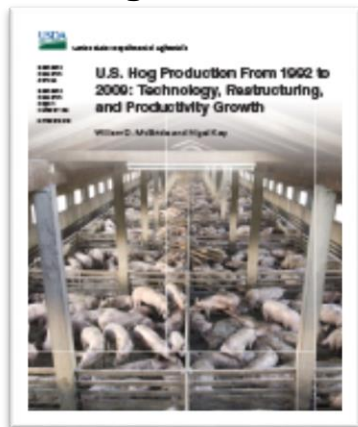
Diverse Beef Cow-Calf Farms

USDA — United States Department of Agriculture
Economic Research Service

The Diverse Structure and Organization of U.S. Beef Cow-Calf Farms

William D. McBride
Kenneth Mathews, Jr.

Dairy Farm Structure, Risks, and Gov't Policy

USDA — United States Department of Agriculture

Changing Structure, Financial Risks, and Government Policy for the U.S. Dairy Industry

James M. MacDonald
Jerry Cessna
Roberto Mosheim

Interest in the CAR Data Product

• **Users of the CAR include government agencies, policy-maker staff, academic research and extension staff, farmers, input providers, agricultural consultants, press, among others**

• **Since 2013, CAR data have been used in more than 20 extramural projects with U.S. land grant universities**

• **Web statistics indicate that between May 1, 2015 and April 30, 2016:**
    -CAR data were viewed 53,119 times
    -CAR corn data were downloaded 7,845 times
    -CAR dairy data were downloaded 903 times

Improving in the CAR Data Product

• **Moving to fewer Excel files with:**
    -pivot tables including estimates for the U.S. and all regions by year—pivot between U.S. and regions
    -machine readable data sheets—all metadata can be downloaded in a machine readable format

• **Evaluating methods of smoothing estimates between surveys—anchoring estimates between surveys to both prior and latter survey data**

• **Exploring how to add crop CAR reports to the ARMS Crop Production Practice (CPP) data tool**
    - allows data users to associate crop production costs with production practices
    - provides data users the CV of cost estimates

Information about ARMS and CAR Estimation

- **ARMS data product:**
    - **www.ers.usda.gov/data-products/arms-farm-financial-and-crop-production-practices.aspx**
- **Commodity CAR data product:**
    - **www.ers.usda.gov/data-products/commodity-costs-and-returns.aspx**
- **E-mail:**
    - **wmcbride@ers.usda.gov**

2018 Chicago Data Users' Meeting

Session: Voluntary and Mandatory Reporting

Presenter: Taylor Cox – Agricultural Marketing Service

Note: The following write-up presents a full transcription of the session, it has been lightly edited for clarity and readability.

What I want to update you with this afternoon is what we're currently working on so I'll just go through the list. Starting with swine and pork. Over the past couple of months we released a weekly average weight of barrows and gilts PDF report. Many of you are familiar with the voluntary version where we simply provided an average weight of Iowa and Minnesota hogs. This new report is expanded into regions as well as the national, using LMR (livestock mandatory reporting) data. The old voluntary report concentrated on the average live weight, the new report shows the live animal weight, but we concentrated more on the carcass hog, because we see more hogs traded on a carcass basis as opposed to live. It's data that is already sent to us by packers so we made a new report.

We continue to evaluate the premiums on the swine 250 report. Out of the stakeholder meetings, we added a new section where we lump together a series of premiums (ABF, gestation crate free, etc). We're still monitoring the antibiotic free and housing premiums to see if we can get that to pass through confidentiality on a regular basis. There's weeks that we're close, we just don't want to pull the trigger on something just to turnaround and have it fail again.

In Kansas City I was asked about the specialty pork report at the last Data Users' Meeting. We're very close to releasing the report. We've been reporting pork for some years now in LMR, and the release of the new speciality pork reports will be very similar to box beef with their branded report, which is many G schedule type certified beef programs. Any new reports we do we're going to release it in our PDF format. We're still combing through the data, I had them run it for last week before I came to this meeting. Last week's data would have showed about 70 total loads of specialty pork products combined, so 70 total truckloads. We're going to have to take baby steps, we will start by releasing a comprehensive type specialty and then look and see if we can segregate items like ABF or maybe breed specific as we go along. At the same time, you have to remember when you're talking about box beef or pork reporting it's thousands of product codes that change often. Every time we hit a target, it's a moving target. Bear that in mind, but we're close and it will be a calendar year 2018 release on this new report.

I was also asked about the comprehensive pork report, again right in line with the beef. The comprehensive pork report will also be a calendar 2018 year release. We're just finishing some programming at this time with our contractor matching up some calculations. So we'll have a comprehensive report out over the next coming months which I know a lot of people wanted. In addition, on that comprehensive we've never done anything with the sow and boar meat because

it doesn't pass confidentiality, but we can show volumes on that, no prices yet but we're going to put the sow and boar meat totals that we're capturing on that comprehensive barrow and gilt meat report.

We continue to onboard plants in LMR on the beef and the pork side. Of course pork's moving very progressively, another big plant in Iowa coming online in 2018. Again, all these companies stay in very close contact with us. So we expect a smooth onboarding and to have them reporting very close to start up like the other plants that started up in 2017.

I already touched on the stakeholder meetings, we're still looking at a producer/packer sold query on the 201 report where we combine producer and packer sold data into one category. The request was generated from the folks at the CME to add more volume and price to their index. We're still waiting for industry feedback to finalize that so that remains on our books from the stakeholder meetings.

We're still looking at establishing a definition for a commodity hog as we've seen a lot of changes from the past 40 years, especially for the last 20 years. Since LMR started 20 years ago that commodity hog may not be now what it was then. If we can define what a commodity hog is today it's plausible that we'd be able to back out some premiums or some indicators to get back to that base hog on our reports, and make that base hog price more useful. That's an idea that still on the books and we will continue to vet.

We continue to review pork cutlines. We're always reviewing product codes, they never stop coming and never stop changing. We're reviewing them trying to package them, get as much data passing through confidentiality as we can. We will be updating pork and beef yields. We will be sending a yield email out to our participating packers in LMR very soon to update that first of the year 2019 as we do every year now on lamb, beef and pork.

On the cattle side, it was alluded to during the open session the comprehensive report. I hope you all are viewers and users of the report and you're familiar with it. If you're not, I'll give you my card and please reach out, I'll get it to you. It's a very nice report it does a lot with the data that we never did anything with. The idea was to show a comprehensive value of fed cattle each week. It evolved from that, but that was the basis of report. It was requested from the industry that we work on 0 to 14 and 15 to 30 day delivered negotiated cattleprice splits. Right now we're reporting negotiated cattle with a combined 0 to 30 day delivery period. We evaluated the national side and were able to pass independently the 0 to 14 and 15 to 30 day delivered cattle on the comprehensive report. About one month ago is began failing the confidentiality guideline, and then recentlystarted passing again, so you are seeing the confidentiality guideline we use in play there. We've been asked to look at 0 to 14 and 15 to 30 day delivery periods in the five area regions, we haven't released anything yet but we have noticed it follows the national price trends closely. So if you're seeing a 0 to 14 and 15 to 30 day split on the national you can almost lay that on top of the five area and it's extremely close.

In addition, we've been asked to look at publishing just 0 to 14 day delivered negotiated cattle. We're still looking at that, which would open up the question what do we do with the 15 to 30 day delivered cattle? We've already addressed what we do with the more than 31 day delivered cattle, we put them on the forward contract report. Over the past six months the new comprehensive report has been very well received. We're getting a lot of feedback, it is fluid, we want to make sure everybody knows if you have ideas for input on that, let us know and we're open to making those additions or changes.

We don't talk a lot about cow reporting, but we're looking at a net slaughter movement report adding this on our boneless cow weekly summary. We'd show net movements from region to region. It would show cattle being procured in one area moving to another. We thought cows would be a good place to start, it's pretty easy on a weekly basis. We want to look at this net slaughter movement, maybe apply that to our hog and lamb reports as well.

I'll finish with the lambs. We did a lot of work already with the lambs this year. We got, as Mike mentioned, the formula price passing confidentiality on the purchase report as we were able to scrub the volumes and just show that weighted average price. The next big item will be on the weekly comprehensive carcass report. It has historically been a packer sales report, we capture the carcass sale, we are adding to that the purchase side. We're going to retitle that as a purchase and sale report to try to get that weekly comprehensive carcass lamb report to start passing confidentiality. We know that's very important and the preliminary looks like we would be able to possibly break it into three weight breaks, 65 pound carcasses and down, 65 to 85, and 85 and up. It's not the same 10 pound carcass spreads as you're used to, but the current report is all blank so it would certainly be a big improvement for the lamb industry.

That's pretty much where we are on LMR since our last meeting in Kansas City. And again, I encourage you to go to our stakeholder page. It's more bedtime reading than you could ever want all the stakeholders notes are there. We're very transparent, we had some studies come out of that. They just released a study that went along with our comprehensive reporting and composite reporting, but some additional ideas as well. So I encourage you to go and read those and reach out to us with any questions or comments. With that anybody have any specific questions for Russ and I with either voluntary or mandatory reporting?

Attendee: On the weekly comprehensive report, you're talking about a cattle confidentiality issue was that in the 15 to 30 or was that in the 0 to 14?

AMS: It was in 15 to 30. It is what we thought it would be, you're going to see packers out further and it's over that 60 day period so you're going to see some lag there at times before it passes (confidentiality) again. It's currently passing again last I looked so we'll go through another wave, but we had a pretty good run and at least we're showing it when we can.

Attendee: That's fine because I think the industry really was more concerned about 0 to 14. From a CME standpoint, that's what we're worried about but if you talked to the different cattlemen out there that's really where their focus is. If we can get 15 to 30 to start passing again or it's maybe it's spotty, we will live with that. This is a great report, I can't thank you guys enough for doing that.

Attendee: One question on that report, the data on some of the charts, is that available to download?

AMS: There's a CSV file along with it. It does have all of the data points for the chart.

Attendee: And that's going to go into MARS eventually?

AMS: Eventually it would go into MARS.

Attendee: With regard to the HG201 any ideas on the timeline about combining those two, packer and producer sold?

AMS: It's not going to be combining them, we're leaving it as is but we would take the transactions in the packer sold and let's say there's 10,000 yesterday, 5,000 of them are going to go into the SPMF, 2,000 into negotiated and the rest in the other appropriate buckets. So it's continuing to be broken out at packer sold so you can see if there's any differences, but it's taking those transactions and including them up top. The top of the report would be producer and packer sold combined if this idea is enacted. Packer sold would stay broken out as is because people have indicated they like that. What we're hoping is that it wouldn't be a big task and it also would keep the report as is as far as packer sold.

We initially tried to get the packer sold to pass confidentiality across those five purchase types and only the formulas would pass. That was the original ask to break them both out because right now we do a comprehensive on the packer sold. Can you just break it out like the producer? We tried, all you would have pass is formulas, which for the CME guys that's important because that'd be, an additional 5,000 to 7,000 a day just for the formulas going into the index. But for us, you'd be black holing a lot of data. This is the next best thing, let's just combine them and still leave it broken out. I don't have a timeline for you.

Attendee: Would that change any CME formula index pricing?

Attendee: No, it just adds more head into the index.

Attendee: Do you get a lot of packer pushback?

AMS: No.

Attendee: We've (CME) talked with a couple different packers they were very nervous about all the newer packers that are coming on board. There's been real nervousness among the established packers, they wanted to see how that number evolved. They said just give us a year to and let us watch that. Then we personally had some phone calls from different groups that were just like, "Hey, give this a year" and Jim came up with a compromise here just saying leave it out there, let's see what develops but then start dropping it into the buckets up above. And so we're not double counting, we're just throwing it back up into the buckets where they fall and if it falls into the ones we're counting that's great we're just adding more volume to it and it allows everyone to see that category still split out, which is which we thought would be a really cool compromise. But we've even had having trouble getting people to say do it. We need more industry support.

Attendee: I have a question about the comprehensive pork coming up. On the beef side they show the export sales and they break them out by NAFTA and non-NAFTA. Is that going to be possible for pork?

AMS: The comprehensive, the best way to describe it on pork, it's just everything in. It won't be broken out.

Attendee: It's really important especially on the pork side with Mexico being the biggest export market.

AMS: For pork, NAFTA is considered domestic. Whereas on beef it's always considered to be separate. They were very specific that NAFTA is included as domestic for pork.

Attendee: I'm from Australia and I sit with great admiration and envy at your reporting service. We don't have compulsory reporting. My question is really about reporting export and as I understand that is not compulsory, particularly beef, is that something at some stage in the future will be considered?

AMS: For domestic reporting, per the Act, it was to capture domestic sales it doesn't cover the export. We do some international reporting on the voluntary side. It's a lot of volume and live animals and those sort of things. It's more movement.

Attendee: Hogs, I believe, that's 26 percent export so obviously that has a huge impact on the value of the carcass.

AMS: Under the Act that we fall under on LMR, we're capturing domestic sales.

Attendee: But on pork on the non-NAFTA one you do capture the sales which is kind of interesting because it gives you some idea as to what's actually going to export. But you don't get that on beef, the symmetry is not there.

AMS: No, they're not twins.

Attendee: So it's a function of the rulemaking why we're getting some on the pork but not on the beef?

AMS: To some extent, with beef it's just export overseas.

Attendee: The comprehensive will have the number of loads that were sold but it doesn't tell you know what primal it was like you do for pork. For pork you can break it down by primal, how many primals went to overseas markets.

Attendee: Primals from reporting packers.

Attendee: From reporting packers but at least you have a sample to work with.

Attendee: We do have very detailed primal cuts export information out in Australia. It's derived from our export documentation, it's broken down by category. It may be something in the future that the requirement for export by documentation that you could acquire that information.

Attendee: I wanted to come back and get a little bit more detail on the grade discussion we were having earlier. You mentioned the select with the way that production is going it's becoming a little bit more antiquated. Do you see that potentially getting phased out in favor of a choice, high choice, and if so, what would be the timeline on that or is select going to stick around in the mandatory reporting?

AMS: In our conversation earlier we were talking about select, choice, high choice, spreads, and the cut out. I think we would envision if we were to go to choice, high choice still having that select, you'd have all three. The problem is in looking at the forms in the mandatory data, the live animal grading they're reporting percent choice. It's not a requirement so we have to look at that. We have to really dig into the forms and see what we could do. With that grading percentage really skyrocketing to 70 or 75 percent, there's a lot of choice and high choice beef on the market. But the choice/select spread is the standard bearer. Everybody's familiar with that, you have to remember it wasn't too many years ago they changed the carcass weights on the cutout. Some things like that have changed over the years. I would envision we'd have all three as long as there was still data there. I think people would still want that historical series, we wouldn't just drop select. We talked about G schedule beef before, there are some packers you can see on that website that have some select programs.

Attendee: It's to the point where I think people in the industry are talking about should select even be priced off select or should it be a choice minus. There's a lot of concern about the value of that data if it's going to be spotty or extremely low volumes and

how can you price a program if you're reporting low volumes. That's why I'm curious about that and what we can expect to see from choice/high choice.

AMS: I couldn't give you any kind of timeline. We haven't done that deep of a dig on choice/high choice. I would envision as long as we have select data it will be there. We're data reporters, at the end of the day, we collect data and report it. If there's data there, we try to get it in front of you.

Attendee: To have those types of changes, you have to get the packers buy in. It's not just that AMS can do this, it would have to have support from the packers as part of the process of doing this. It takes some groundwork, some people to people calls, and I can guarantee almost the first answer from the meat packers will be no. A lot of times you have to lay the groundwork for a few years at meetings like this to get these things on the table so that they're part of the industry wide discussion.

AMS: I think that at soon as you do that, you run the risk of a couple years from now maybe the trend changes, for example if you get really high feed costs and people are marketing their cattle at a lighter weight and you have a lot more select. So we certainly don't want to get into a situation where don't have the capacity to report select.

Attendee: Grid pricing systems are based off of select discount. You've got to feed this into the system so people understand it, you can't change it overnight.

AMS: Not to pile on the packers but our largest data providers, the ones who submit to us are also some of our largest data users. That's important to not just put the packer in a corner. We exist because of the law and they're required to report to us, but they're also major consumers and users of that data. Maybe 20 years ago there was a little more push back on new ideas and maybe we don't even want to do this, to where we've shown things and we've done things with the data. And you're right, we have to wean into it, we have to take our time and get out in front of people, have stakeholder meetings. But it seems to be much more palatable these days, even with the packing community in most instances.

Attendee: ABF premiums, do you collect them on the swine?

AMS: We get ABF premiums.

Attendee: You do get that information, it's just a matter of how you report it.

AMS: Are you talking about live swine or the meat?

Attendee: The non-carcass type premiums.

AMS: Every Monday the swine packer is required to report to us all their premiums. ABFs, gestation crate free, feed programs, transportation. We would like to show

all of those. But again, with the evolving markets, you've got some major packers with five premiums tied into one premium. They could have this, this, this and this in one price plus 12. They're not required to break that out, they're required to report to us the premium. We try to do the best with the data, that's why we added the new category to the premium report where we just lumped all the premiums together and we show what they are. It shows all those premiums just with one spread. We'd like to take any one of those if we can pass it by itself, we will. But again we're seeing more of that with some major packers offering one big premium. And so we just put that in the other, that's why you see that big premium spread on that 250 every Monday, because right now it doesn't require them to break that out.

Attendee: In the end it's one of those things if you're an analyst or even if you're a buyer, you look at it as an indicator and even if it was a monthly number where you have a monthly bucket at least gives you an indication this is what the premium level was. Maybe if you have a monthly number you can accumulate enough data to put it together.

AMS: That's why the commodity hog discussions going to be more prevalent in the coming months. I expect at the pork Expo in June we'll talk a lot about the commodity hogs. To your point, with all those premiums, what fits in that box anymore? It's like what's going in the 201, that other category is growing, you have to figure out how to classify that stuff that's going into the other. Originally the other was just if it doesn't fit the other categories you just put it in there to where it's grown into some of these premium programs. They don't fall with the formula definitions so we have to figure out what that commodity hog is and can you back those out and enhance that formula or negotiate a trade. It'll be a much more prevalent conversation as the months and years go by.

Attendee: When you look at that premium hog category, two or three years ago that was an outlier. But when is that normal? When does that come into the mainstream? If you'd asked me this six months ago, oh, you're two, three years out. You're closer now and you're right, this is going to be a big discussion in Des Moines at the World Pork Expo because they've really got to decide what is a premium hog? What is that number? Is gestation free now real is that just a real part of the market? If they become a bigger part of the market, they need to fall into our index and need to fall into pricing. I don't know the answer that I just know that's an excellent question of where that's going to lay.

AMS: You can make that point further with the specialty pork report. They don't consider that specialty your premium.

Attendee: Well, that makes your job that much harder because you really got to try to focus people in the industry on what's more mainstream now that used to be not mainstream before. It's like in beef when you're selling the upper two thirds choice and all these programs that go into those. You've got one packer that's got 14 programs and you sit there and you're just trying to put that in your mind that they're doing that and how does that impact things? That's a great question on select because there's packers scrambling to sell enough select. Now $6.00 corn that's going to solve a lot those questions.

Attendee: The interesting thing is that even when the weights are lower your higher grade. That is what kind of triggered us to say this is maybe more of a long term trend.

Attendee: These premiums are a big point, these are not additive and increasingly they are part of a package. At the CME especially, you are trying to use these to change, it doesn't work as well as it did with the grid system.

2018 Chicago Data Users' Meeting

Breakout Session – Marketing Analysis and Reporting System (MARS)

Presenters: John Gallagher – Agricultural Marketing Service, Jessica Crum – Agricultural Marketing Service

Note: The following write-up presents a full transcription of the session, it been lightly edited for clarity and readability.

I know everybody's time is important, so thank you all for choosing to come to this session. We are excited to share with you some of the things we've been developing. My name is John Gallagher, I'm the IT manager for both the LMR system and the MARS system. I've been with AMS for about 15 years. My coworker Jessica Crum is here, we're part of a larger IT team that's been developing MARS the last four years. Again, we're excited to show you some things today that we think will revolutionize the way Market News does business. The focus on this presentation is really not about us; it's about empowering our users with new tools and technologies that will help you use our data more. We're going to share with you more data, higher quality data, and on a more real time basis. The focus of this presentation is giving you those tools and techniques to use the data in ways you didn't think you could. We developed an API, an API is an Application Protocol Interface. It is a machine technology, developers know what it is, but we also made it so that basic users can use this tool. We're going to show you some things here that we think will really change the way in which you use Market News data.

This is a basic Excel spreadsheet and what I'm about to show you works for both Microsoft 2013 and 2016. We took a basic spreadsheet and using the Data tab on the top we connected this spreadsheet to our MARS API. We have five tabs across the bottom. The first tab is going to connect to the MARS server, it's going to pull down a table of contents of all the reports that you can access anytime and get all of the data on demand. Right now this is currently production, this is not development. All of these dairy reports, all of the feeder cattle reports are available now. The title doesn't populate we'll fix that later, but the slug number and the ID off to the left are important. We put together four different samples across the bottom. We're going to do two dairy and two livestock reports. We're got a cold storage weekly, a National Retail, an Oklahoma National Stockyards feeder cattle and Joplin Regional Stockyards. Off to the right we have four data sources, these things take 30 seconds five clicks, you configure it and it's there. You come in in the morning, you boot up your computer, you get your coffee, and you hit the click Refresh button. You look off to the right and it's connecting to the API and all of those reports sorted most current to oldest are on your machine. Now this is today's data all the way across to the right. This is a local copy you can manipulate it, you can mine it for data, you can chart it, you can graph it, you can export it. You can do whatever you want to it. You can also link it to a master spreadsheet that would refresh if you refresh these spreadsheets. You can use all of your Excel commands, sorting, filtering, etc. If you want to get a little more technical, you could

create sheets that just pull in butter and another sheet that pulls in dry whey. We've empowered you through the API and documentation to do this. We think that most users would find value in using this versus going and getting a daily text report or a daily PDF report from their bookmark.

How far back do we go? Right now we have it throttled at 500 records because we're trying to better gauge the demand from our user community. In the long run, once we have that capacity, you'll be able to do up to two years at a time. We are willing to share both the sample spreadsheet and our online documentation before you leave today so that you can go home, knowing that this would work on your machine. The first time you set this up, you've got to create an account. This is My Market News, this is part of MARS. MARS is a bigger solution, but the public facing component of it is this interface. You would have to create an account, we give you a key because when you pull this data, we want to know who's pulling the data because we need to better learn our user community. So the key gives us the ability to know who you are. That's it. Under my profile this is the key that's associated with me, so you would plug this in an Excel file and one-time fire and forget; you don't have to worry about it. Those are the things that we're bringing to market. This is a different way of accessing our data but like I said before it was static text and PDF. Here we're giving you the ability to analyze the data and empower you to do things with the data that you never thought you could do before.

Right now dairy is online, part of livestock, cotton will be joining us in the spring of this year, poultry will be through the summer, livestock in the fall, and grain in the winter followed up by specialty crops, which is fruit and vegetables. MARS is an enterprise solution, it is cloud ready. AMS took the initiative to standardize both our business processes and our data collection processes. Before we had stovepipe legacy systems that didn't talk to each other, had different business rules and really didn't empower us to be mature in our processes. We took three years, we built our MARS interfaces on the left and it replicates aggregated data to the My Market News on the right. The MARS interface mandates that the AMS reporters collect higher quality data. This helps you with higher quality data, more tools, and better access to our data. This API that we showed you today is version one. Version two, which will probably come out in 2019, will be commodity specific, right now it's report based but we're going to allow you to say give me all the feeder cattle in one big swoop.

We also built in Customer Relationship Management (CRM) into MARS that our reporters who have relationships both in the voluntary and the mandatory side can manage that data in a one stop shop and we can matrix folks around through markets as we do more with less. We want to assure you that the way in which you get your data from either the Market News portal or the LMR system remains the same. We're going to have the same access through this transition. We want to engage our user community and get feedback. There might be some transitional issues that we are going to ask your patience in. Jessica and I are here, we have an email that you can send us direct questions to and we watch it every day and we respond back to our user groups.

Jessica is going to demo the My Market News interface and then I'm going to come back at the end and talk briefly about LMR web services. Right now we have a Market News portal which has dairy, cotton, livestock, and specialty crops. Those are legacy systems and as all of dairy comes online on MARS, those systems will be sunset. They're expensive to maintain, they're older, and MARS offers higher level security. The SMEs for each commodity will work with the user communities to make sure that you're well aware of what we're doing before we do it.

I'm going to start by taking everyone to the homepage, which is the landing page of My Market News there are a lot of ways to get data without using the API which may not be the mode you want or need to get data. If there's a specific report that you know the report ID for, you can simply go to the Get Report Data section. I'm going to scroll down and get feeder cattle data for Joplin. If you click Go, it's going to take you to the data page for that specific report. Once we get to the data page there's lots of ways you can edit and slice and dice the data to get different outputs. First you can generate one data set at a time by simply clicking, for example, the first week of data, then you would just hit Get Data and it would pull the most recent report for you. You also have the ability to get a range of data. You can also save your search conditions, if it's a report that you get a lot and you are going to constantly go back and need to get it. Saving the search conditions is a registered user condition which means you have to create a login and there are several of those throughout the site and I'll point them out as I come to them. But once you save the search condition you would just go to your profile under saved queries and you would have all of your save conditions that you could go back to and easily access at any point in time.

Also on this page you have the ability to download the data into an XML or a CSV file and it will download directly to your computer. You also will see right here this link to the Joplin regional stockyards profile page and once you go there, it has all the data, an explanation as to what is on that report, it'll have a description, the market type where it comes from and contact an expert. Those are the people that work on the report and you can contact them directly and it will have their email address and phone number.

You can also subscribe. These two features that I'm going to talk about right now are once you have your login page created then you can subscribe to a specific report and when you do that your information is entered into the Gov delivery email site and you'll get any update notifications on that specific report. You can also add it to your favorites and when you add it to your favorites, it's going to come up first on the commodities page. All of these features are managed under your profile, so you can add or delete any of the ones that you've selected. Also on the homepage all the new data and new reports that come out, you can find right here. We also have a direct link to the API. If you go to the commodities tab, let's select livestock for example, you're going to have all of the most recent news, that's going to include press releases, popular data and things of that nature. When you click the Favorites button it's going to come up in your popular data. All of the reports related to livestock, you can find under popular reports and you can query through them by clicking View More and searching for what you're looking

for. If you scroll down you can see all the experts associated with this commodity and important resources.

The home page has a lot of great features on it too. It has all the documentation for the API. It has webinars, manuals, training sessions, and frequently asked questions. There's also a page of frequently asked questions related to My Market News specifically, it gives you the rundown on how to go through the site. More importantly, there's a feedback and discussions forum option. Those are also only options that you can use once you've logged in. Feedback is a direct connection to the MARS email address so anything, any comments that you email will come directly to us and we'll be able to respond to you. Discussion forums are where our users can connect with each other and talk about different things.

Attendee: For the API you have only dairy so far. For this you have dairy, livestock and what else?

AMS: There is some livestock data and cotton hasn't come on yet but it is supposed to by the end of spring.

AMS: There are about 20 livestock auctions that are in there now.

Attendee: So the grain will come on at the same time it does for the API?

AMS: The grain is scheduled to come on in the fall.

Attendee: For both? Whether I am doing a query through API or My Market News?

AMS: Yes, they go together.

Attendee: When is organic? Is that with the specialty commodities?

AMS: I am not sure about organic.

Attendee: Are you going to show us how to build a connection with Excel?

AMS: I would love to if time permits.

Attendee: When you publish a report how soon does it go into it?

AMS: When we publish the report, it's immediately available. One other thing too, with certain reports where we do like an open and a mid session or preliminary data

during the day, like an auction, if you're using API or pulling the data, there is one column that we've added now that's called a final indicator to let you know if its preliminary data or final data.

Attendee: The veal report that you just pulled up was that just a demonstration or is that what the report is?

AMS: It's the report.

Attendee: I am looking at one of the auction reports. There is at least 150 data points in one of the auction reports. It's breaks it down by fed cattle in a million different ways. What you've shown there is a very broad summary of what's in the report.

AMS: There is a row that you can expand and you will get all of the data points. The aggregate row that you see on the report will be in the data set too. So steers, medium and large 1, 400 - 450 weights you get the price range, the weight range, the price point, the average weight.

Attendee: I was following along and looking at the query that you just put together and then downloaded the CSV. The CSV only has the top line row. I didn't see any place where you could further refine the query.

AMS: From the My Market News page you pulled up Joplin and you said you could download a CSV here and then you went on. He went and downloaded the CSV from here. What he is saying is that result appears to be different from what was pulled in [in the demo]. He may have found a problem, we will have to look at it first and verify it.

AMS: If there is a specific report that you don't know about, say you just wanted to get information on feeder cattle, but you didn't know what reports were out there, you could go to this Commodity Information Bar and search. Click Go, and it's going to show you in the tab that pops up all the reports that are related to feeder cattle, which can be pretty useful.

Attendee: Did I hear you say that we are limited to 3 years' worth of data points?

AMS: Right now we're limiting because we want to make sure the capacities of the servers are tweaked enough to handle the demand. Right now we're throttling it to 500 records but we intend to increase it to multiple years' worth of data for registered users level two, which is EAuth level 2.

AMS: All of our historical data is going to be migrated to MARS.

Attendee: My concern is if I want to build a 10 year database, I have to go through multiple steps to pull down the data.

AMS: At the end of the day we're here to help. This is a very easy to use system and we are happy to help you set up anything in an Excel spreadsheet. John and I are going to be here this evening and in the morning we would love to help you. Also, if you have any feedback for us. We'd love to hear it good and bad. You can either email this email address directly or you can click the feedback option in My Market News and it will direct you to this email address and we're happy to do live demos by request.

AMS: We still have our legacy system up and running. We are building this system as we are using it. We couldn't wait to get it all done, we're rolling it out in pieces. We aren't shutting anything off in the old system until we know it's working over here. Part of that is getting it out there in front of you all to get feedback and if something's not working, we're counting on you all to tell us so can fix that. One of the things that Jessica mentioned, the FAQs, we didn't come up with those questions ourselves those all came from users.

Okay to the gentlemen over here in the far corner who asked how to do this. We're going to keep it simple. I run the table of contents, I see there's a new dairy report there, DA105. In our online documentation, on the API, we have gone to great lengths to walk you through how to do this. We also have a guide that we can hand out today. This is the root URL that you would call from your Excel file. I copied that into my clipboard, I go over to my Excel file, using the Data tab, I go up here to where it says From Web. I'm going to copy that string directly into there. It's going to go now and get that data. It's going launch what they call the Query tab that's part of the Data tab. I'm going to do a right click drill down, there's four records. I'm going to do a right click to table. Right here is where you're able to decide what data do I want to bring in. This report only has four records. These are all the fields that are going to be available. For demonstration purposes I'm going to take out a few here just to show you that we can customize it. This is all editable after the fact, you're not committing to anything at this point. I'm going to hit okay and it's going to go down here and it's going to create a new worksheet. Now we went through that kind of quick but once you do once or twice, it's really pretty easy.

The LMR system has been around with us longer than the MARS system and back in the day we developed a web service that at the time was bleeding edge. Now it's technically dated and we're working to bring that up to up to speed. Right now we're already replicating LMR data to

MARS. What we have to do is modify our API to show that legacy data, but the intent is to allow you through this spreadsheet to bring voluntary and mandatory data into one spreadsheet. My intent today was to demonstrate through the web service how you can bring that into Excel.

Attendee: In that list of fields available, I'm guessing that not every field will be populated for every report, is that correct?

AMS: That's right.

Attendee: Will there be a way on the list of fields to show which ones have data?

AMS: The field might be null for some time period, but it might contain data at another time period. So I don't know if you want to not show it. If you're talking about putting a logical filter on it, you probably could.

Attendee: I'm thinking about consuming all of the digitized data so that I can use it in some of our products for charting and load it with other charts. So we're going to be using data in mass quantities and this method won't work for us.

AMS: You can use the API to query the database.

Attendee: I want every data set not just a single data set.

AMS: In the long run, you're going to be able to get everything you want but you're going have to be patient while we transition through all of these legacy data sets. In theory, as long as your spreadsheet or access can handle it, you could consume everything. We are giving you every field, we're not filtering any field, you are empowered to cut out what you don't want.

Attendee: I was just curious would every report have data in every field? Every type of report, like the dairy reports are going to have fields and the livestock reports. I know you have worked to normalize everything up and I'm just curious how that's going to carry across the different data types.

AMS: The data schema for dairy reports is unique to dairy reports we don't share with the livestock data set.

Attendee: Let's say we're here one week from now and you pull this up, the date column is 4/23 now will it show up 4/30?

AMS: Okay, great question. Through the API you have the ability in the URL to filter based on what you want to see, but you also have the ability to sort. So if you want the sorted cheese latest and greatest or butter oldest to newest you could do it at the query level or you could let Excel do it.

Attendee: Where do you do that, where do you make those choices?

AMS: We could do them right here on the query string. This, this sample right here is pulling a dairy report and it's sorting on category, which is a field in the database, but you could sort it on published date or another field. You can also use Excel and use the sorting capabilities in Excel. This API is written for basic users and advanced users. Big companies might have their developers program this and it's all behind the scenes but you guys have the tools and techniques to tweak it.

Attendee: Is that a function of Postman to build the initial query string?

AMS: Postman is a great product but not the best fit for our customer base, you could use post man to massage the query and say this is finally what I want, but you could also do it in Excel.

Attendee: To build that initial query string where does that happen?

AMS: You can do in Postman or you could do it in Excel, you could do it any way. I could take this attribute on the right here and go back and modify the dairy report I just did and pull it again and sort it differently.

Attendee: Right now certain reports I am thinking about the imported beef prices are not in the database. Is that information going to be captured?

AMS: All of our meat data is in the Data Mart. Everything that is collected from LMR is in the Data Mart. Long term voluntary and mandatory data are going to be available through the MARS API. Our task at the moment is to get all of the legacy data into MARS. Once we get it all over there and we're comfortable that everything is there all of the historical data has been migrated then those systems will be sunset.

The LMR data, nothing's going to happen there, it's still going to be accessible through Dart Mart and through the web service. Currently it's being replicated over to MARS to My Market News but we haven't turned that function on yet. They will and so the user would have access to get it through the API but that's downstream, right now it's just voluntary data, nothing is going to happen on the

mandatory. As far as the future of the web service, that decision will be made at some point in the future after the API is up and running by then there might be some other acronym that we're using.

This is the Data Mart for LMR, it is supported by a web service. The web service by all accounts, based on our back end measurements, is the most popular way to get the data. This is the interface that most folks would pull from for the web service. It's eight years old, it exports, the data as XML vs JSON. JSON is the way in which the MARS API works, which is a standard industry practice, XML is a little dated. This is how the data looks in XML on the LMR site, you hit a file save and save the file down to your desktop and you import it into Excel. The only drawback to this is it's not dynamic, you don't hit the refresh button to go get a new set of data, you have to go through those manual steps for the time being, but we wanted to show you this, so that you could bring voluntary and mandatory into one worksheet or workbook and manipulate the data. That's our presentation. Do you have any questions?

Attendee: You have a tremendous amount of data in the databases. Do you run any filters on the acceptability of the data? Whether it's nonsense or whether it makes sense? I'll reference the data series coming out of some of the dairy sector, so that you quite often release it one month and then you have quite sizable revisions in the next month and then a year later, have some revisions. Do you do any filtering to try to reduce the amount of lower quality standard data? Whatever data stream that you're getting do you do much evaluation on the data reported to you?

AMS: For mandatory, plants are allowed to report revisions up to four weeks and they're also audited. Based on what the audits find, they may have to submit revisions. So there will always be the capability for them to revise their data up to four weeks for dairy.

Attendee: Do you do any evaluation of data to say this doesn't make a lot of sense?

AMS: Yes, we have a whole process that we go through on evaluating the data, contact plants to verify the data.

Attendee: You call back and say this appears to be unusual?

AMS: Yes, we do that.

Attendee: A long time ago in an earlier life, I was detailed for a year to Packers and Stockyards and we looked at 20 years of weekly reporting on about 25 different markets for fed steers and we developed price profiles and change amounts that

occurred among them. More than 20% of the average weekly data were reporting errors. Whenever we had something that appeared to be unusual statistically saying this is three standard deviations out from expectations, quite often you'd call a reporter and he would say, whoops I had a problem there. I'm surprised at the amount of changes that I'm seeing in the first release of monthly dairy stats versus the revisions that occur there. Some of them just from a statistical viewpoint you could identify it right away when you see it. Something doesn't ring right here.

AMS: I'm not exactly sure from the dairy market news on the voluntary side and reflecting on butter, cheese?

Attendee: This isn't price reporting this is on the physical amount of cows, milk production, pounds of milk produced.

AMS: That's a NASS question.

Attendee: From a data user standpoint, I might be able to help a little bit. We pull all sorts of stuff from NASS, AMS, etc, a lot of USDA data and other data from around the world into our data warehouse. Everything you've demonstrated within seconds of you publishing it it's in our data warehouse. I store every revision, so if you wonder how often revisions happen and what are they, I've got reports put together for any field that I can look at and tell you here's the list revisions, here's what happened? And we do that because users will come to me and they say, Rob, last month you said production in Wisconsin was 3.2 billion pounds, now it's 3.21. Why? Here's where the revision came from and your databases all track those revisions, when they happened, why they happened so that data is part of the metadata that's available with this, suck that into your data warehouse and use it there.

Attendee: One thing that we started with at the beginning was the timeline for when a lot of these reports are going to become live. Do you have a list of the actual reports?

AMS: No, for instance livestock auctions, we have a few up there now because in those states, Oklahoma, Missouri, a few others, they've been using MARS as a data input, whereas the other states, they've been using our old legacy LSW program. And so that's why we have that data there now and as they start using MARS, that information will come. Grain and rice are pretty similar market types, that's all planned to come on at the same time. Poultry, the push is going to be to push all the poultry, push all the eggs.

Attendee:　　Ideally you are going to use the new MARS is going to be not just an output, but it's also going to be used as an input.

AMS:　　Yes, we didn't even do a demo of the input side of MARS, which is much more complex.

Attendee:　　It's going to be tied on both ends?

AMS:　　Yes. A reporter no matter if you are a specialty crops reporter walking the Terminal Market here in Chicago or you are a dairy reporter in Madison or any of our reporters around the country, you're going to be using the same system to input the data.

Attendee:　　Does this make it more difficult for them or no?

AMS:　　It's going to make it better for everybody because right now what we learned is we're all doing it a little bit differently. Even in my own division everyone's making phone calls to collect information. Some people are writing on a piece of paper and putting together a Word or text document, others are putting it in an Excel spreadsheet, others are using Access. That's why we had to move to the same system, data is all handled the same way, better reliability, better security better everything when data is all handled the same way.

Attendee:　　You talked about the different levels when setting up an account. You have a level one or level two, how do I know which one I need?

AMS:　　Everybody does a level one right out of the gate house but level two requires a slightly higher level of authentication, the design is that if you are level two, we're going to allow you to pull larger data sets than you would if you were level one.

AMS reporters are very excited to see and use the MARS interface. This is one of the collect screens. Everyone in AMS who's a reporter will use one of three collect screens and keep in mind that some of our specialty crop folks are in coolers or chillers or auctions that don't have WiFi so this interface is designed to work offline and online. We have a tablet view for 10 key if you're walking through doing this, you have a tab across view if you're doing an auction and they're going pretty quick, or you could use a standard view. Notice that the drop downs are conditional so based on what I type certain things refresh here and if they're color coded, that means that the fields are required. We're mandating that they input data all the time, we're doing our best to fill in all fields where applicable. This is our data control mechanism. We have all kinds of widgets off to the left here that allow the reporter on site to do plotting and data analysis

to find outliers in the data that they've collected already. They can also pull down historical data to see where trends are changing. They can generate a preliminary report on site at an auction. If they're doing an auction in New Holland and they want to provide a preliminary report to the folk's right there, they can do it. It's not a final, its preliminary, but we can at least share the data with them. There is a lot of charting capability, many more tools than they've ever had before. One of the coolest things is the Prepare tab. This is a comprehensive interface that allows us to manage our offices, our markets that we cover, the profiles of the market, the users, the cooperators and contacts that the voluntary folks have established over the years. We want everybody to write everything down here so that it's all here. We also have a map here. We pull from DTN automatically now. So instead of those folks manually going and getting that data we consume it here so that the quality of the data is higher, that gives you a flavor for under the hood.

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April 24, 2018

MARS

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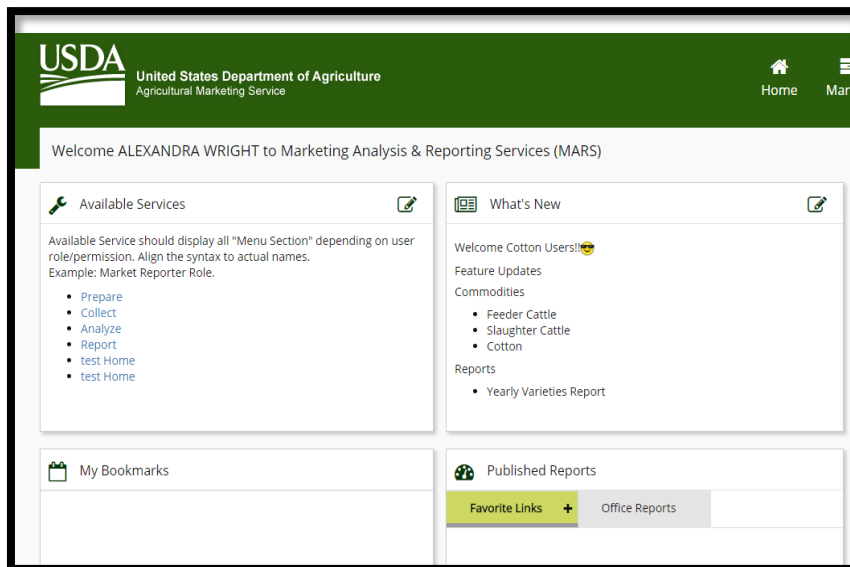
MARS Helps You

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- More tools

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- Resources on My Market News
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MARS

- mars@ams.usda.gov

- Live demos by request

LMPRS Web Service

- Public-facing Web Service

  ❖ Query for data reports

- Legacy data format

  ❖ 8 years

  ❖ XML vs
     JSON

- Help Guide online

  ❖ Use URL

• Future: API

LMR Web Service

https://mpr.datamart.ams.usda.gov/

LMR Web Service

Click > File, "Save As" and save file to workstation

Excel

Questions?

2018 Chicago Data Users' Meeting

Session: Foreign Production, Trade, and Import/Export Data

Presenters: Patrick Packnett – Foreign Agricultural Service (FAS), Warren Preston – USDA, Office of the Chief Economist (OCE), Joseph DeCampo – U.S. Census Bureau

Joseph DeCampo

A little bit about how the Census Bureau collects foreign trade data. It is required by Customs that exporters or their designated third party filer, file their electronic export information (EEI) into a software system that's maintained by Customs then Census Bureau extracts it. We publish our FT900 indicator on the international trade in goods and services about five weeks after the end of the stat month. It has a joint release with the Bureau of Economic Analysis and also Statistics Canada. We have both the press release and our website https://usatrade.census.gov/. It has all sorts of customizable tables, search by commodity, search by port, search by country and it's also historical data back to the mid 90s. Every single record is required to be filed electronically unless it is an export going to Canada or the value for a Schedule B number is below $2,500. For those we have no value estimates.

Attendee:	You have a tremendous amount of good data. The problem is you can't find it because you can't figure out the codes. Is there some place you have an index of your codes?
Census:	Do you have an account on USA trade? Or if you want the big book of all the Schedule B numbers you can go to https://www.census.gov/foreign-trade/schedules/b/index.html, there'll be an index because the codes get updated every single year. There is also a search function so if you want to look for corn you type in corn and it will list out all of the Schedule B numbers for corn.
Attendee:	If you type in corn you can get 25 different records for corn hoping they're all the same place.
Census:	Sweet corn is not in the same place as dent corn which may or may not be in the same place as popcorn.
Attendee:	Sounds like the world we were always, constantly searching for data.
Census:	They should only change at the six digit level once every five years and that's something that happens with the World Trade Organization that happens globally if things are going to change at the six digit level. But they could change at the ten digit level any year.
Attendee:	Every five years, so when was the last year they were changed?
Census:	January 2017.

Attendee:	That's at what level?
Census:	The six digit Schedule B level.
Attendee:	So at the ten digit level it could change.
Census:	It could be once a year, could be twice a year.
Attendee:	It could be in the middle of the year?
Census:	It would be January 1 or July 1 unless there's some sort of presidential proclamation that we have to create a number for something, then that could happen whenever it happens.
FAS:	Census owns the trade data. At FAS, we have the Global Agricultural Trade System (GATS) where we're trying to make sense of all of that and organize it in a way that allows us to analyze global trade. We created categories putting all the corn together, all of the soybeans together, we're doing the best we can stay on top of the changes in the codes so that we can consistently look at time series analysis. If a soybean code changes this year, we're trying to grab that and make sure it's a part of soybeans so that when you look at the ag data we have in GATS you know it's consistent.

Patrick Packnett

I think most of you are familiar with what we do in the Office of Global Analysis (OGA) at FAS. We've got a couple of main functions. First is to help analyze global markets and create global supply and demand data through our participation in the WASDE with the World Agricultural Outlook Board (WAOB) and the Interagency Commodity Estimates Committee (ICEC) process. As part of that we establish the ag reporting requirements for our FAS overseas offices. We tell them what reports we need and the time schedule for the attaché commodity reports that we're getting from overseas that we make available to the general public on our website.

Part of our responsibility at OGA is to administer and maintain these key databases. We do that for our own purposes, because we use them as well as making them available to the public. I'm primarily referring to the PS&D (Production, Supply, and Distribution) database which is USDA data but FAS has the responsibility for organizing and maintaining that database as well as the GATS which we get the data from Census as I noted before. We are using all of this data that we help create and collect and organize to administer trade policy and help policy makers make trade policy decisions and to execute our market development programs and capacity building programs for the agency. When we get into the Q&A if you guys want to drill into any of those areas a bit more we'll try to answer your questions. Nina Pham is from one of our Global Policy Analysis Division, she's the GATS expert. If you want to drill into anything specific on GATS, Nina should be able to help us answer questions. I've got Ron Frantz here who is from our International Production Assessment Division.

Warren Preston

I will be talking about the World Agricultural Outlook Board and our monthly World Agricultural Supply and Demand Estimates (WASDE). As Patrick alluded to that's a process that is pulled together through the Interagency Commodity Estimates Committees. Those are USDA's official forecasts on supply and demand prices. The core of the WASDE is the domestic supply and demand balance sheets and then the world's supply and demand balance sheets. In terms of foreign production, trade, and import/export data, through the ICECs we do pull in a lot of information with the Foreign Ag Service's cooperation and the Economic Research Service is a large contributor, it's across all agencies contributing to that process. The balance sheets give us the aggregates for the world. And then as we talked about this morning breaks out some of the major importers and exporters, which this coming May will include Ukraine and Russia and not the FSU any longer. So in a nutshell that's kind of what we do. I did verify that the whole content will be available in the historical databases that I talked about this morning. Every number that's published in the WASDE we will have going back to 1996.

Attendee: Do you look back at what you've done in the past to try to maintain a consistent methodology when you revise your export forecast or is it always on a case by case basis?

WAOB: There is a lot of looking back in terms of analog years I would say more meteorologically then in terms of trade. One of the things it's always important to keep in mind with the work of the board is that we assume normal weather until proven otherwise and we assume policies currently in place until they change. For example, right now we have a duty on sorghum and pork in China, and that's going to be taken into account explicitly. We have some other stuff being talked about potentially open for negotiation there. Now the trade is looking at soybeans and it's looking at other commodities, even though we don't have duties yet imposed. So indirectly depending on what markets are doing that kind of information feeds into the WASDE but at this point, we still assume just the current duties, we're not looking at the additional announced potential duties.

WAOB: We do pace analysis too, that's one input we look at but it's not the only criteria.

Attendee: Is pace a big input into that forecast adjustment?

WAOB: It's just one of the criteria we look at. It depends on the market year and the competitor situation.

Attendee: I think part of the answer here on these forecasts is what the (foreign) posts are telling you. I'd like to give kudos for the USDA-FAS GAIN reports being more accessible. This has become much more economic space somebody has provided some training and some perspective. They've got a more solid basis in terms of supply and demand. Third, since I'm the livestock person, the livestock and

poultry world markets and trade every six months, adding the perspective of those articles back to that publication has really been valuable. They're short and concise and I've had some really good feedback from our members across industry and the universities that they're finding that insightful. So I just wanted to relay those comments. Keep up the training I know that's a constant turnover in the embassy offices of the ag staff. The in country people are very good and they vary by country but there has been some noticeable gains there.

FAS: Thank you for those comments because it has been a struggle for us but it's been an area that we put a lot of resources into. The American officers rotate overseas and we have we try to have more steady presence of locally employed staff but we get turn over there as well. We have had some concerted effort to conduct training in Washington, we recently sent out a team and we had a regional training program for our LES (locally employed staff) out in Southeast Asia, where a number of folks from Washington went out and did a week long workshop specifically on commodity reporting and analysis. We want to keep the quality of reports up and we're putting resources constantly into training, to try to make sure we continue to provide quality input to the to the WASDE process as well as to the public audience. So I appreciate those comments. I'll definitely take them back to the team that's working on the livestock circulars as well.

Attendee: Hopefully you're seeing some benefits in terms of forecasting exports too.

Attendee: I commend you, the consistency of the GAIN reports is much improved over the last five years.

FAS: Great. Thank you. As I noted this morning, the GovDelivery system that you're using now has worked well for us, not just for the GAIN reports, but pushing a lot of additional information out of FAS in terms of press releases and program releases. The public can sign up for a variety of different topics that are coming out of FAS and when we release the new GAIN system, we're going to have a subscription option directly in GAIN that will give you an opportunity to be more specific on what you subscribe to.

There was an offline question that was asked about when we could publish the reporting schedule for the GAIN reports so that people could anticipate and know when the reports are going to come in. I'll take that back and if that's something we can do as well. We have the schedule, we know when they're due. They don't always come in by the due date but usually it's close. Sometimes resource constraints at the posts get in the way and we'll get in a request for an extension. If we can allow an extension we will as long as it doesn't conflict with our responsibilities to the monthly Lockup. May primarily being the big one for field crops.

Attendee: GAIN reports don't directly go into the WASDE. It's an input but the committee is going to decide, so you read it in the GAIN reports, it's not necessarily going to be Brazil.

FAS: That's a good point, we used to have a disclaimer in those reports, I hope it's still there, but it's one of the inputs that our analysts use. We're using a whole host and variety of other information and data sets, remote sensing and the trade information. It's all sources kind of methodology we use to arrive at these numbers.

Attendee: I was going to ask specifically on the production side for the WASDE, I'm thinking of USDA vs CONAB numbers, is there any collaboration between your offices and their government reporting agency? For a while on the corn side USDA was at 95 metric tons for Brazil, they were at 86 or 87 and now they've come up and USDA's come down. It seems to work together, but I didn't know what the two methods are there and if there's any collaboration to try to marry those two up because it seems like if you just average it, kind of go in the middle, a lot of times it gets you pretty close to where the ultimate number is, but I didn't know if you could any context to that.

WAOB: I've had a chance to visit with the attaché's there. We're the only survey based production estimates around and so we evaluate the quality of the information that we get for production from foreign governments. We don't have a joint committee. We do have collaboration with other countries through the G20 Agricultural Marketing Information System (AMIS). That's a formal collaboration and trying to get a common denominator, where everybody's reporting production and stocks kind of numbers. But to get people up to doing survey based [estimates], what we would call the gold standard, not everybody has the resources to do that. I know that Seth Meyer has an example he likes to give of our forecast of wheat in Australia. It was a few years ago and we were looking at the meteorological data we had which had a little bit broader base than what they were looking. There was a lot of skepticism about our number versus the Australian, but in the end we were more accurate.

FAS: Our analysis is independent of any foreign organization. As I mentioned, we're using an all source methodology and I can ask Ron to give a very brief overview of how his division approaches arriving at these foreign production estimates. While there's not collaboration on forecasts, we do have occasions where we're working with a foreign government on methodologies and how they're using remote sensing and we're sharing information and techniques and things like that.

FAS: It is an all sources methodology. Convergence of evidence is how we like to describe that. For Brazil, for example, CONAB is one of many reporting agencies

that we are looking at. We do get all of those industry and government reporting numbers. When we see CONAB come out with a number that's 2 million metric tons off of where we're at it certainly makes us refocus and take a look at that. That's where we can pull some of the other sources, we can talk to post again with our attachés and LES and ask them about that change. We can apply remote sensing to that region and focus in on a particular area and a particular crop. We have crop masks with our remote sensing tools that we can look at particular crop types and focus in on more than just general NDVI (Normalized Difference Vegetation Index). We can look at NDVI specific for corn and soybeans. What about the weather, soil moisture, there's lots of different remote sensing products that we use as well beyond NDVI. That's just a part of the overall picture but yes the country reports are very important to us, the industry reports are very important. As far as formal truing up with them, no.

We travel at least annually to our regions of responsibility. Our analyst just got back from Brazil a couple of weeks ago. She meets with CONAB, and with the big organizations and discusses their methodologies. We share what we do as well.

When our analysts on the production side have a number in mind that we are ready to defend, we go to the ICEC which consists of ERS, World Board and the Joint Agricultural Weather Facility (JAWF) and ourselves, we sit around and it's consensus driven. The combination of looking at it from an agronomist scientific perspective which is more my division and looking at it from an economic perspective and then shaking out the number based on that.

Attendee: Would you say that the remote sensing is more heavily used internationally than it is here?

FAS: NASS uses it heavily we're actually the providers of that imagery too. They use higher resolution imagery for the U.S. and it's more frequent observations and overpasses of satellites than we get for foreign production regions. They have a lot of coverage of the U.S. On the foreign side, we use it more for certain countries areas where we don't have good reporting. Pakistan is a good example, cotton in Pakistan we tend to rely a little bit more on that. It's really country specific. And I think as was mentioned earlier remote sensing really helps when you've got a feast or famine situation to be able to focus in on a different region. Particularly for droughts or flooding events.

Attendee: You talked about the production focus. I'm always curious about how you come up with what you think is an equitable ending stocks or beginning stocks number. It goes through constant adjustments, sometimes we go back a year or more. How comfortable are you with those numbers because I also went through the time where we had total reassessment of Chinese numbers back about 15 years ago.

How do you define really what those stocks are because those sometimes really become critical factors.

FAS: The way we're divided we intentionally keep production separate from the trade balance sheet. That's our sister division, we dump that production number on them and now they have to do the hard work and figure where this is all going. So I'm going to defer to Patrick to answer that.

FAS: I'm fairly far removed from the ICEC meetings. You're right, it's a challenge especially when you deal with foreign countries and don't actually have good information. No country in the world has the collection of information reporting on stocks that we have in the U.S. So I think it's each committee having methodology within their committee of how they arrive at stocks. We get the reporting from the attachés, they send us a balance sheet in the GAIN report and that's their best assessment. It varies from country to country how much of that is really solid data versus a residual type calculation. In some countries, it might venture a little bit closer to what we have available in the U.S. In other cases it's probably more of a residual.

WAOB: Sometimes we'd look at where the trade is going. Like Argentine wheat, the way they're exporting, production has to be higher. Stocks are just heading down the pipeline and sometimes that's resulted in us raising production. Burmese rice, they haven't exported this much since the 40s, but what do we know about Burma? Basically nothing in terms of the quality of the government data.

FAS: We have an analyst there right now.

WAOB: We do as we speak, first time in 30 to 40 years.

Attendee: This is about stocks again specifically Argentina and soybeans. What would you have to see from Argentina in order to reduce their soybean stocks and when would that reduction happen? You mentioned trade flows?

WAOB: You look at usage and you go from there. A lot of silo bags, a lot of stocks on farms there so I don't know that we have good numbers about when farmers are going to let that go. It's a matter of looking at what you can see and then trying to make some inferences about what you don't have good estimates on.

Attendee: Talking about soybeans and trade flows, some of my colleagues work closely on a global trade model and they're using your data. How well are we doing with the exports? So when we talk about Argentina and Brazil and soybeans specifically, there are trade flows that go between those countries and then how well can you actually tell how much of that is new product and much of that is imported and reexported somewhere else so that when you look at a global balance how

confident are we in that number? Are there safeguards you use to prevent double counting exports?

FAS: Reexports between Argentina and Brazil?

Attendee: Let's say Argentina produced soybeans that they exported to Brazil and Brazil takes a little bit out of that and then exports them to China or somewhere else. Do we have any methods of tracking that or do you just assume that's new product?

WAOB: I will relay that question to the oilseeds chairperson.

Attendee: Around the world as it stands right now you've got Europe, Canada, Australia, we think we have a pretty good handle on what they're doing. As we go into the Latin Americas, into Africa, we know with China that we still have issues trying to get solid production numbers. I think we've got a least a sense that they've got plenty of supply. Is there any place that you've seen positive things happening in the world of analysis?

FAS: There's one example I'm aware of. In the case of Argentina with the change in government there, we've had some teams come in to visit with our folks and with the World Board and I think we've seen some changes in their desire to have actual unbiased data and to actually get it right, rather than politically influenced numbers which we've seen in some cases.

It was mentioned earlier the Agricultural Marketing Information System is an effort to globally produce better global supply and demand information and data. They have programs, one is to try to get better and more usage of remote sensing information for crop estimation. They've also had a lot of training programs for the members of AMIS, this is coordinated out of the FAO where they're actually doing workshops to help countries better develop their statistical systems for estimating supply and demand. There's efforts out there to help the world globally do a better job, we're involved through our participation in programs like AMIS, as well as teams coming through Washington and sitting down with them and talking about what we do.

WAOB: Our boss was on a trip to China and India to go to some situation and outlook talks but also talking with government officials. We're always out there trying to encourage getting that information out there. When we're flush in all commodities people maybe aren't quite as interested. But when you start running into shortages that's when other countries realize this is significant, maybe we do benefit from having more information so we don't run into food security crises as much. That's the message we try to get out there. I think the more exposed that countries are to trade, I think then their industries start to demand it as well, they want to have that information. We have a pretty good relationship with Argentina with government

folks, but also with the exchanges too and so we've got a lot of interaction there with folks like the Bolsa's.

2018 Chicago Data Users' Meeting
Breakout Session – National Agricultural Statistics Service (NASS) Programs

Presenters: Lance Honig – NASS, Travis Averill – NASS, Jody McDaniel – NASS

Note: The following write-up presents a full transcription of the session, it been lightly edited for clarity and readability.

[The recording missed the very beginning of Lance Honig's opening remarks.]

…There are reports on stocks, prices received by farmers for the crop commodities, we do a little thing called Crop Progress and Condition you might heard something about that in the other big session. But we cover a wide scope of crops from field crops to fruits, vegetables, what we would call specialty crops, which is another way of saying things that didn't fit in those categories I mentioned already, and that's kind of what we focus on from a crop perspective.

I'm Travis Averill, the Chief of the Livestock Branch. We're responsible for livestock, poultry, and specialty commodities for NASS. That entails monthly reports, weekly broilers, we publish 194 reports in the branch, 33 reports over that whole year period. We have cold storage, mink, slaughter, poultry, livestock, cattle, hogs, quarterly milk production, sheep and goats. We also do prices for livestock, bee and honey, cost of pollination, quarterly loss for colonies. And so we have numerous reports, Cattle on Feed is another one. So like Lance said we'll take questions but we wanted to give you an introduction to each of our branches.

Good afternoon, my name is Jody McDaniel, for those of you that came today to data users, you'll notice that I'm the branch chief that gets the least amount of questions and I'm okay with it. Part of that is because if it doesn't have legs Travis doesn't really count it, if it doesn't grow out of the dirt Lance doesn't really count it and I get essentially everything else. It's a wide spectrum it's the Environmental, Economic and Demographics branch. We have the opportunity to take a front run on the Census of Agriculture. So anytime you hear about the number of farmers or any demographic group, there's a good opportunity that the staff in my branch actually take care of that. We also focus on the Current Ag Industrial Reports which are going to cover your grain crushings, fats and oils, cotton, as well as flour and milling. The Agricultural Resource Management Survey (ARMS), if you had an opportunity to sit in on the Economic Research Service meeting you heard quite a bit about that, it's one of the main drivers into their income forecasting. So my staff has the opportunity to work with that. We also cover agricultural labor, farms, land in farms, prices, parody prices and then a lot of the more special studies, not necessarily FRIS (Farm and Ranch Irrigation Survey) or Aquaculture that Dave mentioned earlier but the Local Foods Marketing, which we did the first survey of its kind, released a couple of years ago, as well as the TOTAL which is the land ownership and tenure. So pretty wide swath of unique things. Looking forward to any questions you might have.

Hopefully that gives you an idea of what we can cover while we're here, as I mentioned, the one topic we want throw out there was how we tailor our program around the Census of Agriculture.

You've probably noticed that we don't necessarily have annual estimates of every single commodity that's produced in the U.S. or if you've looked at a particular commodity, you've probably noticed that there's rarely 50 states that we estimate on an ongoing basis. The reason for that is mostly driven by budget because to do every commodity and every state ongoing every year would be a daunting task. So what we do is we use the Census of Agriculture to evaluate where we need to focus our efforts in those in between years or on an ongoing basis. Our goal is typically to cover somewhere around 90 to 95 percent of production with the states that we cover in a commodity. That is not an exact number, if you can get, 85 percent of the production with four states and if you want to go to 90 you've got to add 40 more that's probably not a great use of our resources to get that extra 5 percent. That's just a snapshot of how we will use the Census to help tailor what we do on an ongoing basis. So if you had any questions about that hopefully that gives an intro into that conversation, but as I mentioned, we really want this to be about you sharing either ideas or concerns with us or asking any additional questions you have.

Attendee: From a CME Group perspective we're very agnostic or neutral on this topic, we don't have a stance, but it's about report release times during the trade session. Just so you know, we get lots of feedback. NCBA (National Cattlemen's Beef Association) actually has policy on it. National Pork Producers Council does not but supports their viewpoint. Four or five years ago we never had a report released during the trade session, a couple years ago we had one, last year we had a couple, this year we've got three or four. What their request is can we push those reports now after the trading session, the day before when it needs to be depending on how it falls on the calendar. Where does it all mesh into that? Being a person who worked for Cargill for many, many, many years, I know the grain side is mostly comfortable with reports released during the session, their trading hours are very different than ours and their liquidity is very different than the livestock complex. So that's where we're getting most of the pushback. Is there a way on these holiday weeks where we're having these issues where the reports are coming out during the trade session, where we can either postpone it to where it was after the close or push it to the day before, or maybe push it to the day after, but again after the trading session? That's their request.

NASS: Your number one concern it's just the 3:00 p.m. normal timeframe that most of the livestock reports come out. If it's a day before or a day after, it's just the timeframe at 3:00 p.m. not noon.

Attendee: It doesn't have to be on a Friday. I know the NCBA would love all the reports to be on Fridays at 3 p.m. Eastern time. It could be on a Wednesday after close if it needs to come out on that day, that's fine. I'm a little more bending than probably they are but their message is we just don't want it during the trading session.

Attendee: Inconsistency right? They don't want to have this one Friday where blows up with all the other reports released at 3 p.m.

Attendee: I know that's really difficult on you all, because I know we talked about the bunching, as a person who used to analyze these reports and do it in my brokerage business, nothing's more demanding than having slaughter, Cold Storage, Cattle on Feed all on the same day. I understand that, but we'd sure like to move slaughter a day before something along that line.

NASS: Is bunching mostly a problem if they're all either all crops or all livestock, or is it a combination problem as well?

Attendee: In some cases yes. What we mostly follow is livestock but if it's going to be on a major crop production report, Grain Stocks comes out on Friday sometimes, Cold Storage I would lump in there, Hogs and Pigs, Acreage. We're not necessarily worried about it falling with Rice Stocks.

Attendee: From our standpoint and from what I hear from the livestock side and I've heard this also on the grain side about the bunching. Typically livestock is not a huge issue about bunching, it's a rare event. Their deal is about release times just after markets. I know we had three livestock reports last year on one day. I know you're limited on your time frames, I get that I didn't understand but now I understand that.

NASS: March was a perfect example with Hogs and Pigs and Prospective Plantings on the same day. That was a busy day for us.

Attendee: Is there a benefit to you as an exchange? If you issue a report on Friday after close, foreign exchange competition and so forth, I remember when we first went to 23 hour trading one of the reasons that we took contracts to that long time, I come back to rice it's what I know best, was because if we didn't have it available there that someone else was and then it became obvious that that wasn't a threat. So now rice is back to a 7:00 – 9:00 night session which I think was very much necessary as an exchange. But if you start issuing reports at 3 o'clock on a Friday and isn't changing that a potential competitive disadvantage?

Attendee: That definitely comes into play. One of the reasons we [CME] try to stay agnostic in this thing is that we understand they're under constraints, but the marketplace is too. Hence why we have no problem with grain markets getting the reports released during the day is grains kind of trade a little bit. You see our hours of grain trade. It's kind of skittish but it's at different times during the night, you can trade overnight. That's why they like those grain reports because they put them into the volume of the trade data and capture that at the CME.

Attendee: In the grain reports you've got an unequal dispersion of information. Computers have access to all the information before any private entity does, that's your massive competitive disadvantage that didn't exist prior to electronics. In the country where I work, the people on grain reports are very much standoffish because by the time it gets to me, the computers have already chewed me up. So I'd rather get to the sidelines if I've got any concerns because I don't have the same shot as they do to put it in the market. If you close the market for 10 minutes from Eastern time 12:00 p.m. to 12:05 p.m. or 12:00 p.m. to 12:10 p.m. where that data can be consumed by everybody and then everybody is on equal footing. That would generate more trades. But I know that would put you guys in a very difficult scenario. You're not in the business of being worried about trading you're in the business of putting out very good numbers. But the numbers are not distributed evenly in the country and that puts the country participants at a massive disadvantage, that's why country participants are moving more and more away from futures and options and closer and closer to doing cash contracts. That's an exchange issue, but I can tell you in five years we will be sitting in this room having a very different conversation if we stay the way we are today.

Attendee: Downstairs I just heard that ESMIS is going to be releasing files in csv, text, and pdf off of NASS's request. Do I take that as a sign that you guys will not be doing away with text files anytime soon the way AMS has?

NASS: I don't know that we have a timeline, I think we're committed to work toward getting more of our data out in a database format and try to at least draw back on these 40-50 page pdf documents for a multitude of reasons. One, I think, most folks want to just consume the numbers, it's not necessarily conducive to grabbing it quickly out of these publications. From an internal standpoint, it's a fairly significant effort for us to take all of those numbers and now create this 40 or 50 page document. We'd rather spend our time analyzing those numbers and less time creating these pdf documents, but we don't have a specific timeline on any of those formats going away, we're just working toward streamlining what we do and making it more about the numbers and less about how many pages a document looks like. I don't think you are going to lose your text files.

NASS: The only thing I might add to that is that we've discussed a time table that we would like to see things happen and realistically we know it's not going to happen but if I had my druthers, by next January we would be doing everything on short pubs and getting everything onto Quickstats on time for all reports, not just for the crop reports. If you heard about the delay downstairs, sometimes 8 minutes, 12 minutes, 15 minutes. In a perfect world when a report is released, whether it's noon or 3:00 pm, the data would be there. In the short run, I'd say within 3-5

years, we'd have a short report maybe 2-4 pages long with the highlights but in the long run that would be gone. A lot of it has to do with the budget.

NASS: The bottom line is that 40-50 page publications have 35 tables in them and then proofing them out is resource intensive. It's not just producing a number it's also making sure you don't have any typos. If we can put those on a diet and release the numbers in a way that is easily machine readable and in a timely fashion then we think this is a good product for our data users and it's also a better use of resources internally. We have to continue to come up with ways to be more productive with the staff we have if we are going to preserve the programs.

Attendee: I know we're not there yet but one thing that I'd be concerned with is how we get those revisions, like for the five year, how are we notified? Is that a manual thing, do I change my API to capture it all, etc. And even just for the year before, making sure everyone's aware there was a change.

NASS: We also know one of the things we talked about is we have lots of footnotes. The data we collect is messy sometimes. Whether it's in California, the season is different for oranges than it is in some other places or marketing year. Whatever we evolve to, if we are not producing the paper publications needs to reflect those footnotes so our data users understand what's going on with that data cell. Right now we have both Quickstats and a publication we feel pretty good about it but if we have some items that are no longer in a publication, that's more problematic.

Attendee: Are you guys going start reporting a premium hay price?

NASS: We're in the process right now of getting that stood up and going. It'll be a premium alfalfa price.

Attendee: Should I be worried about how many states that's going to include? Are we going to be able to get enough data to be able to report that price?

NASS: That is a great question I was hoping maybe you had the answer to that. Honestly, until we begin collecting that data, we can't guarantee exactly how much data we're going to get.

Attendee: It's premium alfalfa, not premium and higher? It's not going to be supreme or supreme dairy or some of these other terms they use with all of the hay options?

NASS: We're looking at two terms right now which is supreme and premium which we will most likely combine. But we've got to get in there and collect the data to see exactly how much data we're going to get and therefore, how many states we're going to be able to publish.

Attendee:	And if it works really well your next question will be can you do that for fair or good because there's not that many AMS reports that cover other hay options.
NASS:	We're going to take it one step at a time. This is what we've been asked to do.
NASS:	The latest modification in the Farm Bill requested NASS to do this for 5 states, not all states. Not even a U.S., the 5 highest milk producing states.
Attendee:	Anybody know what the alfalfa market is like in the fifth highest state? California should be ok to get a price.
NASS:	The way it's written it's based on milk production. But the current budget says do the premium alfalfa for the U.S. and so we're looking at a lot of states right now, but we just don't know how many will be able to publish until we get the data.
Attendee:	I looked at some crop data and I thought when I pulled the number it pulled in the most current crop year for either yield or acreage. Are the preliminaries included if I pull that down or if I said in Quickstats I want to pull your crop acres from now until five years back? Does that include whatever the preliminary is?
NASS:	If it's been published then yes.
Attendee:	Even if it was just referring to planting?
NASS:	Yes. We have modified Quickstats in recent years to where you will be able to identify that specifically as March intentions. Right now you can only go back five or six years to specifically get the March intentions. It's going to take a little bit more of an effort for us to populate more history point in time, but moving forward we're trying to make sure that when you pull the latest you'll get that but then it will be forever marked as March intentions as well.
Attendee:	Do you have a crop progress graph for cotton in Louisiana?
NASS:	Those are coming out or our Research Division.
Attendee:	The question is do you have those data for all states?
NASS:	All of that data is in Quickstats. If you look at the National Crop Progress release, you will see a certain set of data. In some cases, there will be state level data that's not included in those tables because of various arrangements that we have at the state level. That data is all being loaded to Quickstats as well. So anything that's been published, whether it's a national report or just coming out of our regional offices that's all loading to Quickstats and the information in that graphic that you just highlighted all that progress information should be available in Quickstats.
NASS:	Our research division produces that set of graphics and you see progress, in the bottom panel it looks like a bunch of S's showing planting or squaring or

	harvesting and in the top it shows conditions across time. Those are available for each state that asks that set of questions along with a 5 year average.
Attendee:	The reason I was asking is that I am with the EPA Office of Pesticide Programs and there's potential utility for us in this region for modelling when does this application occur and so we can use these curves.
NASS:	Depending on which group in EPA you are with, we actually do work with them. Feel free to reach out and I can put you in contact with our chem use staff.
Attendee:	We've been reporting on it for many years but we are not seeing much correlation between the crop condition throughout the year and final yield and production. We're at a point where we're wondering if it's of value to our customers to report on this. We're seeing poor conditions throughout the year and then at the end of the year we are seeing record yields. Is there any talk about finding a way to connect those numbers to production?
NASS:	I think it's kind of like I touched on in the in the large session, you're almost talking about two different products. The goal of the weekly updates is just that, to give you a weekly update of what we are seeing. As far as not seeing a correlation, most of the time most folks see a lot more correlation than for example they saw last year. Obviously this reared its ugly head last year because the two didn't seem to be synchronized like they usually are. Now with that said, I have talked to some folks who have said, well, I've got a model that used that data and it was right in line with where the yields were coming so I presume it could have something to do with how that data is modeled to the yields as well. I'm certainly not suggesting that some folks just don't have the right model. I'm just saying there's so many ways you can slice and dice that data and try to link it up but internally we've never considered it to be how we're going to measure yield because it has its limitations. It was never designed to measure yield. It's designed to do what it says, it's a subjective reporting of conditions, progress, things of that nature from folks on the ground and the frequency is probably one of its greatest advantages.
Attendee:	One of the concerns of our commodity analysts was that some farmers are making marketing decisions based on what they are seeing throughout the year in the crop conditions.
NASS:	My guess would be after last year, there won't be as many.
Attendee:	Instead of doing market analysis around it, we are just reporting it.

NASS: There is another data product out there that comes from a remote sensing product, there's Cropscape but also Vegscape that measure vegetative vigor and change to that.

Attendee: But that also does not guarantee what the yield correlation will be.

NASS: This product may give some visibility and a different look at a similar phenomenon.

Attendee: Where is the vegetative data at?

NASS: It's on our website. If you search for Vegscape or Cropscape it should come up.

Attendee: Last year was an outlier. Late July, August, September weather conditions and total moisture availability was significantly higher and high temperatures were lower than historical. Your crop condition indication was good but last year you kind of throw it out the window in August because of the way August played out.

NASS: I would be careful not to think because of one strange season that that's the new normal.

Attendee: This is a rice question. On your long grain export sales on the March 29th report you're still at 71 million. You get the WASDE number on April 10 they dropped that export sales number down to 68, a three million reduction and yet we're currently 100% of last year's numbers which would be a 78 million pace in exports in rice. Who would I be able to talk to reconcile things better to give me some indication of what I'm missing?

NASS: I mean the export side of things, that's all in the WASDE we don't have anything to do with that. But we can definitely get you in touch with the folks that can answer that for you.

United States Department of Agriculture (USDA)
Agricultural Marketing Service (AMS)

Market Analysis & Reporting Services (MARS) API & Livestock Mandatory Price Reporting in Microsoft Excel User Guide, v1.1

Table of Contents

Change History

Date	Change	Version
11 APR 18	Initial Draft	1.0
17 APR 18	Added Livestock Mandatory Price Reporting Web Service to Excel Section	1.1

1   MARS To Excel Overview

This overview provides instructions to basic Excel users on how to connect to the Market Analysis & Reporting Services (MARS) Application Programming Interface (API) and access the desired data. This document goes step by step.

1.1   Purpose of MARS API to Excel Help Guide

Both Microsoft Excel 2016, and 2013 (with the optional Power Query Tab installed) support data calls to web based API. The Microsoft 2013 Power Query Tab can be downloaded here[1]. In Excel 2016, the Tab is called "Data". These instructions show how to link data sources to the MARS API from Excel file and automatically refresh to pull the latest data.
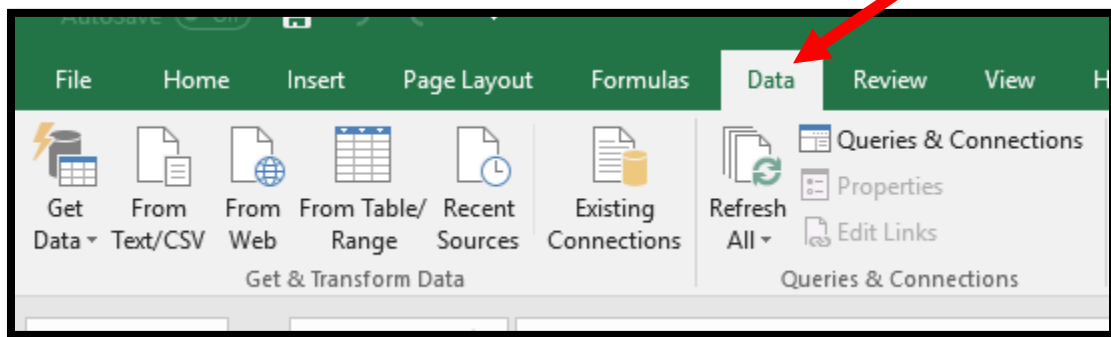
Figure 1 MS Excel Data Tab Toolbar

1.2   Document Audience

This overview was written to assist basic Excel users in configuring their Microsoft Excel 2013 or 2016 to pull MARS data automatically into their own environment or network.

2   Usage

In order to know specifically what reports are available, it is recommended that a Table of Contents be pulled from the MARS API before beginning your query.

2.1   Starting a new MARS API request

To start a new MARS API connection, click "From Web" on the Data Tab in Excel.

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[1] https://www.microsoft.com/en-us/download/details.aspx?id=39379

Enter the following URL to retrieve the table of contents from the MARS API: https://marsapi.ams.usda.gov/services/v1/reports. Click "OK". The screen will pause for a few seconds while the request is made to the MARS API. The screen will refresh.
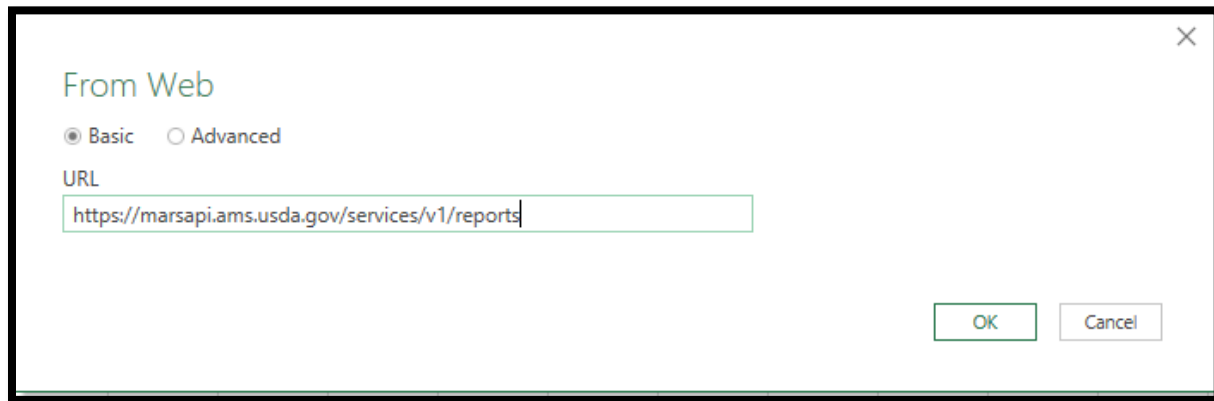
Figure 2 "From Web" Menu.

The first time a Data Source is configured to access the MAR API, a key is required.
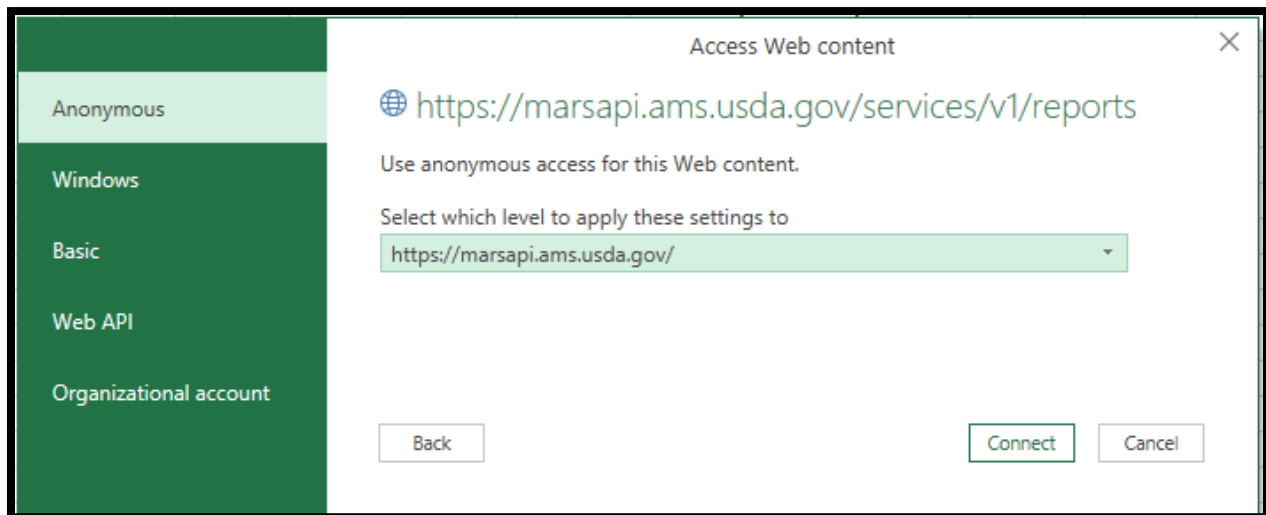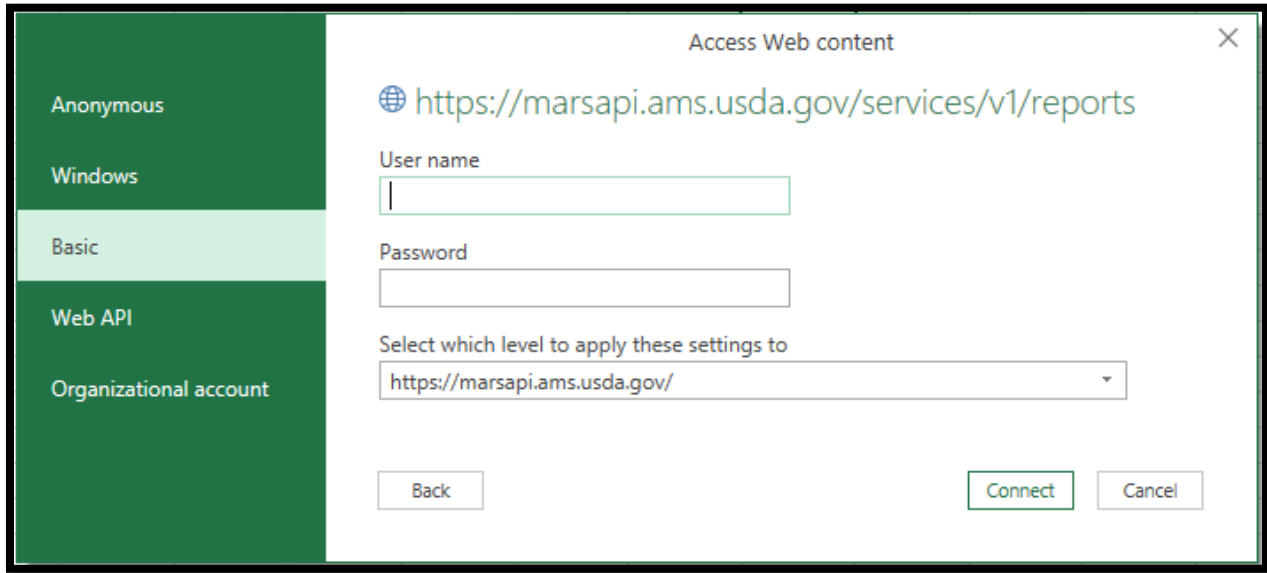
Figure 3 Access Web Content Form

Select the "Basic" Tab and enter the MARS API key that is associated with your E-Auth account into the User name field. Each regierestered user has a personal API key that can be found at My

Market News[2] in the user profile. Click "Connect".

Figure 4 Basic Authentication Form

The page will refresh and the Query Editor will launch.
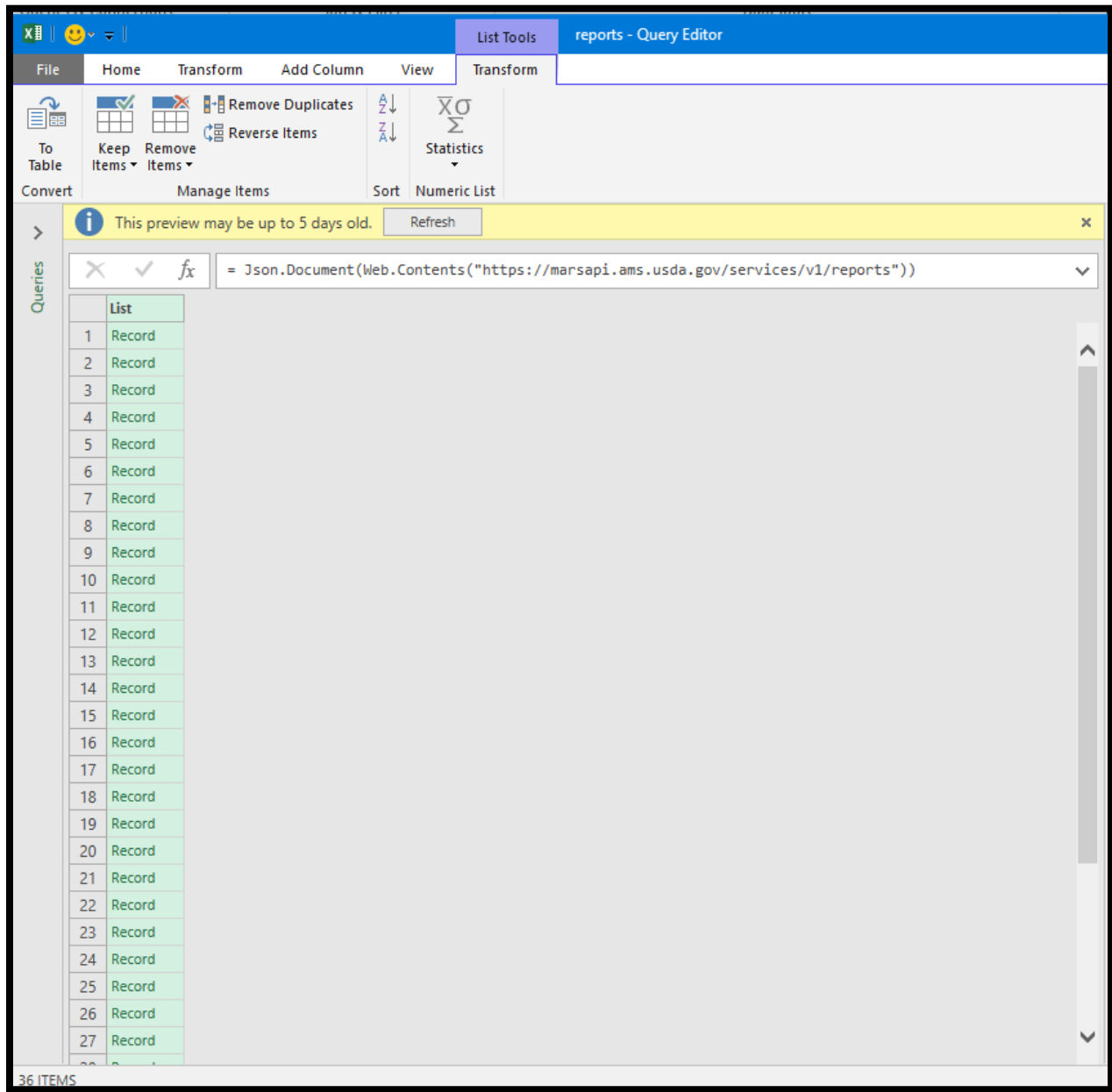
Figure 5 Microsoft Query Editor

Place your mouse of the column heading titled "List". Right click your mouse and select "Copy Entire List"
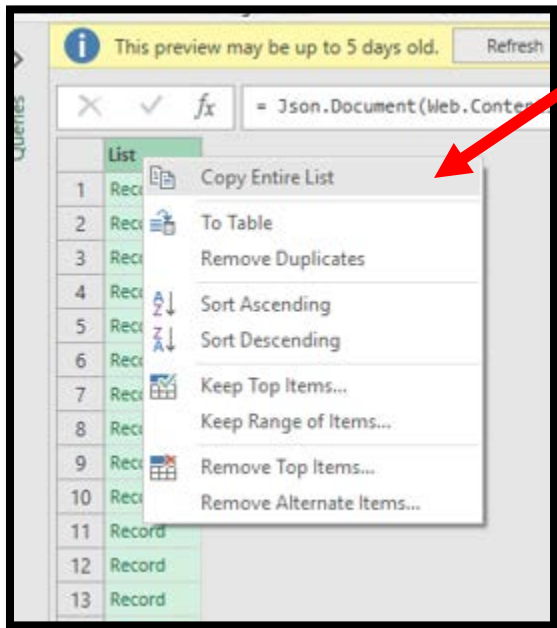
Figure 6 Click Copy Entire List

Click the "To Table" button
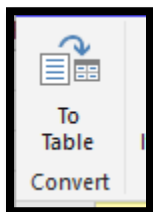
Figure 7 Click To Table Convert

A menu will appear. Click "OK"
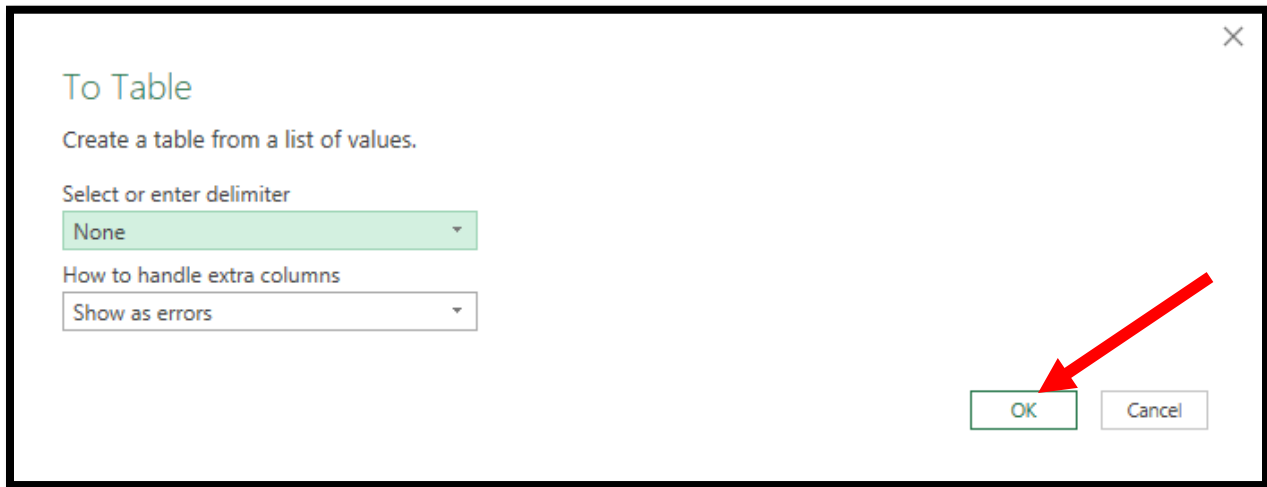
Figure 8 To Table Selection Menu

The screen will refresh. There will be an icon to the right of "Column1".

Figure 9 Column Selection

Click the "Double Arrow" icon. The screen will refresh. Click "OK".
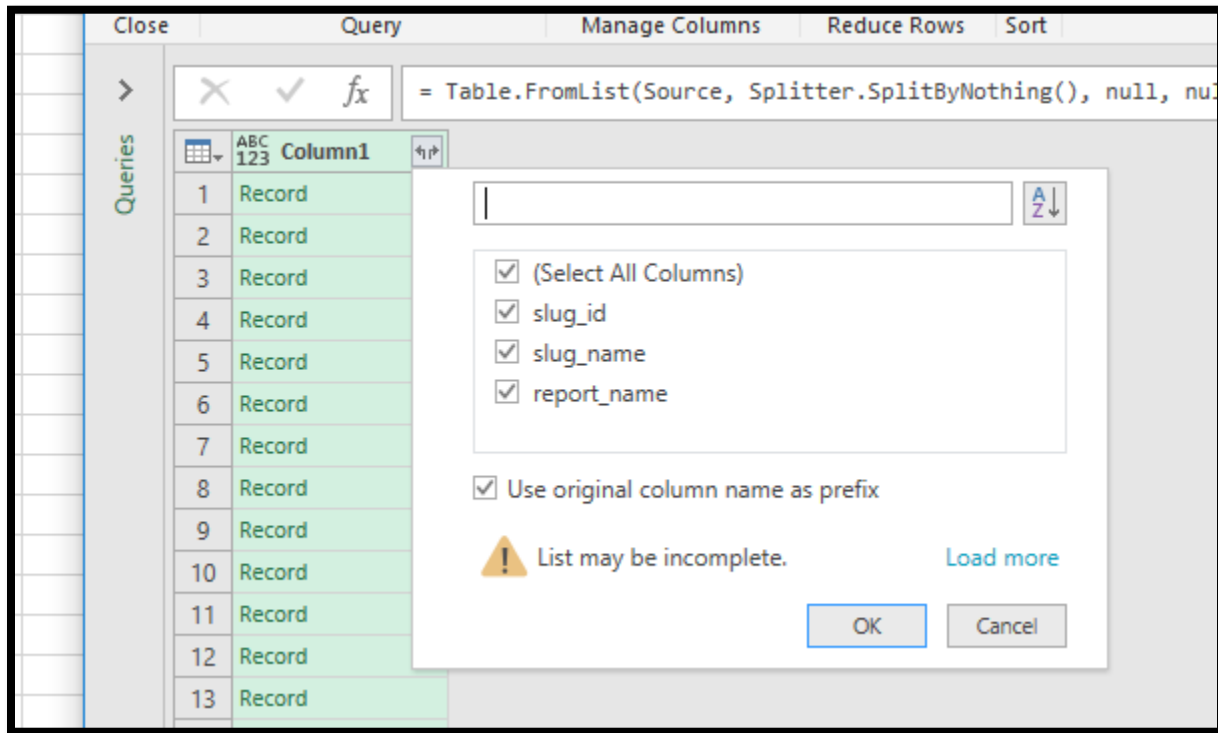
Figure 10 Column Selection Options

The screen will refresh again and show the following:
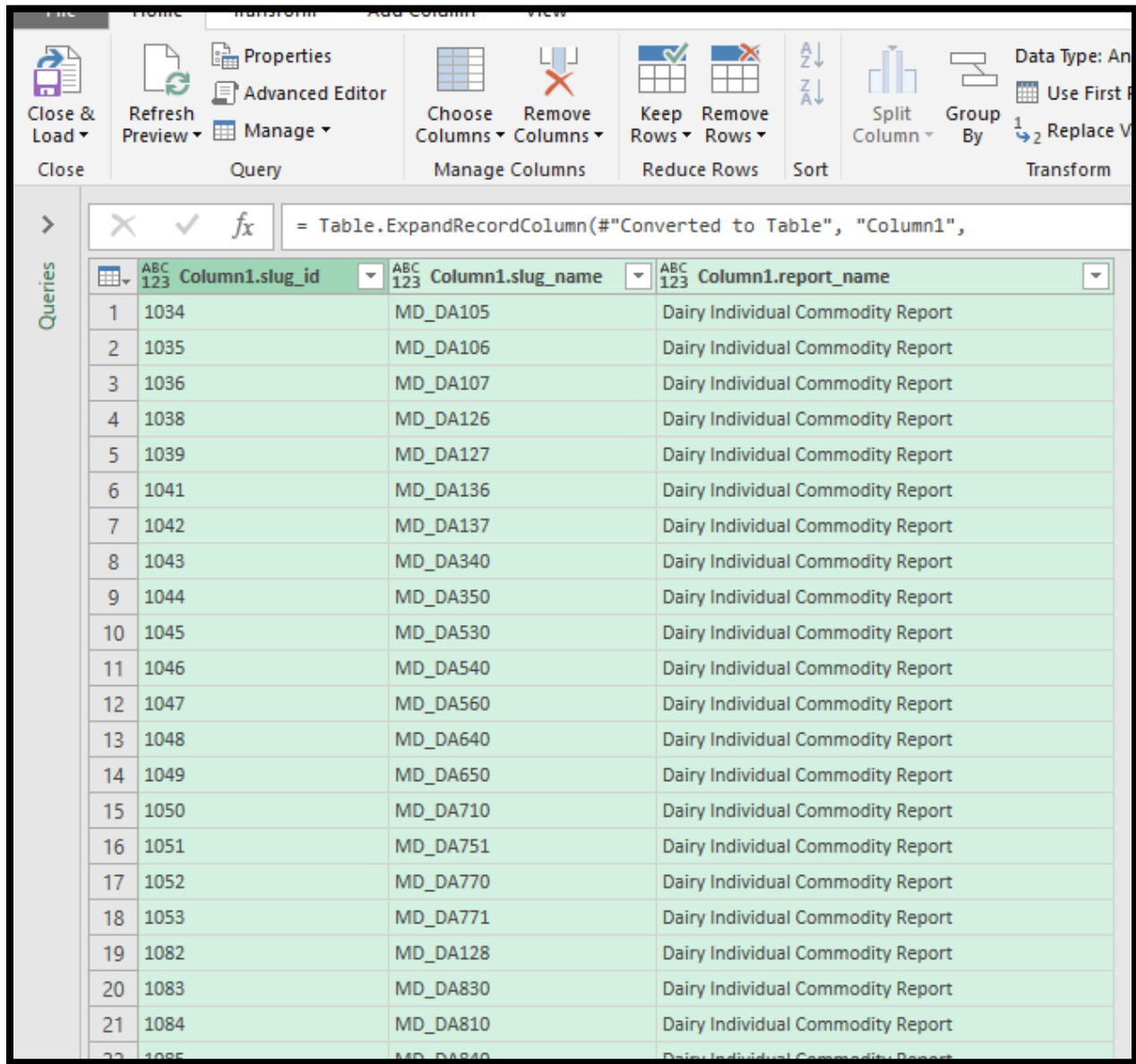
Figure 11 All Columns Shown

Click the "Close and Load" button. This will load all data into a new Excel worksheet.
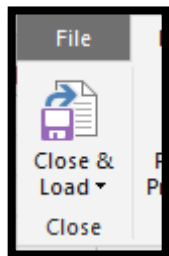
Figure 12 Close and Load Button

The worksheet will pause for a few second while the data is pulled from the MARS API. The screen will refresh and look like:

Figure 13 Columns of Data Shown In Excel Worksheet

Now that we have a complete list of all available reports, you can now pull a specific report. Let's go ahead and pull the "Cold Storage Weekly Report".

2.2   Pulling a specific report from the MARS API

Click on a new Worksheet in the Excel file. Click "From Web" on the Data Tab.
Using the example on the MyMarketNews website, we will use this string (https://marsapi.ams.usda.gov/services/v1/reports/1095). The 1095 is Slug ID for the Cold Storage Weekly Report. If you wish to pull a different report, replace the Slug ID with the desired report number. Click "OK".

Figure 14 From Web Input Form

This screen will show, while all the data is pulled:

Figure 15 Connecting Status Menu

The Query Editor menu will display:
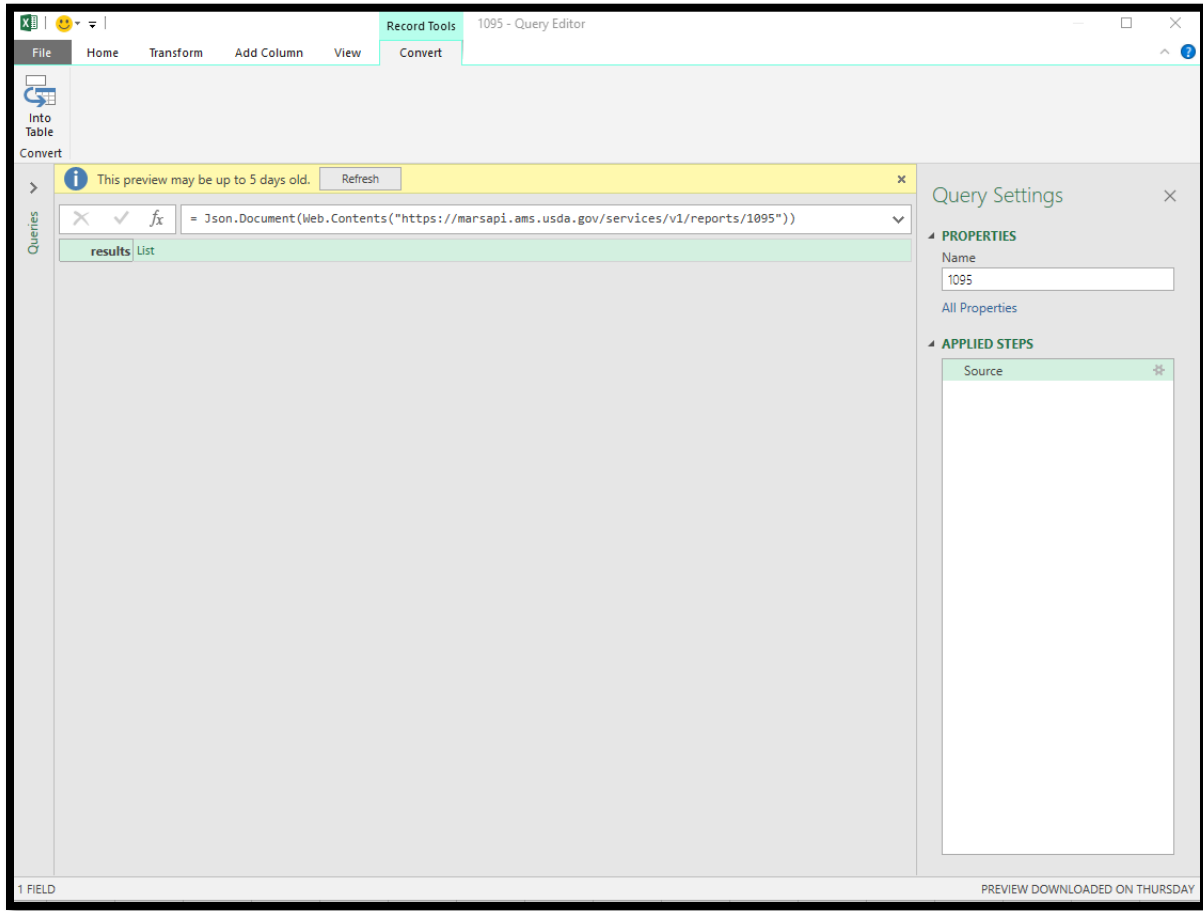
Figure 16 Microsoft Query Editor Displayed

Place your mouse on the column titled "List" in green and right click. Select "Drill Down".
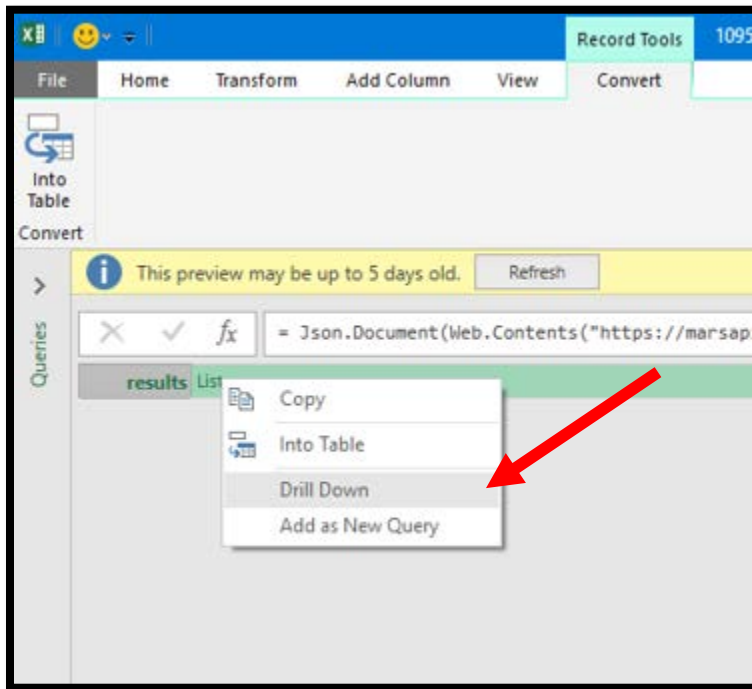
Figure 17 Selection of Drill Down

The screen will refresh and display as below.
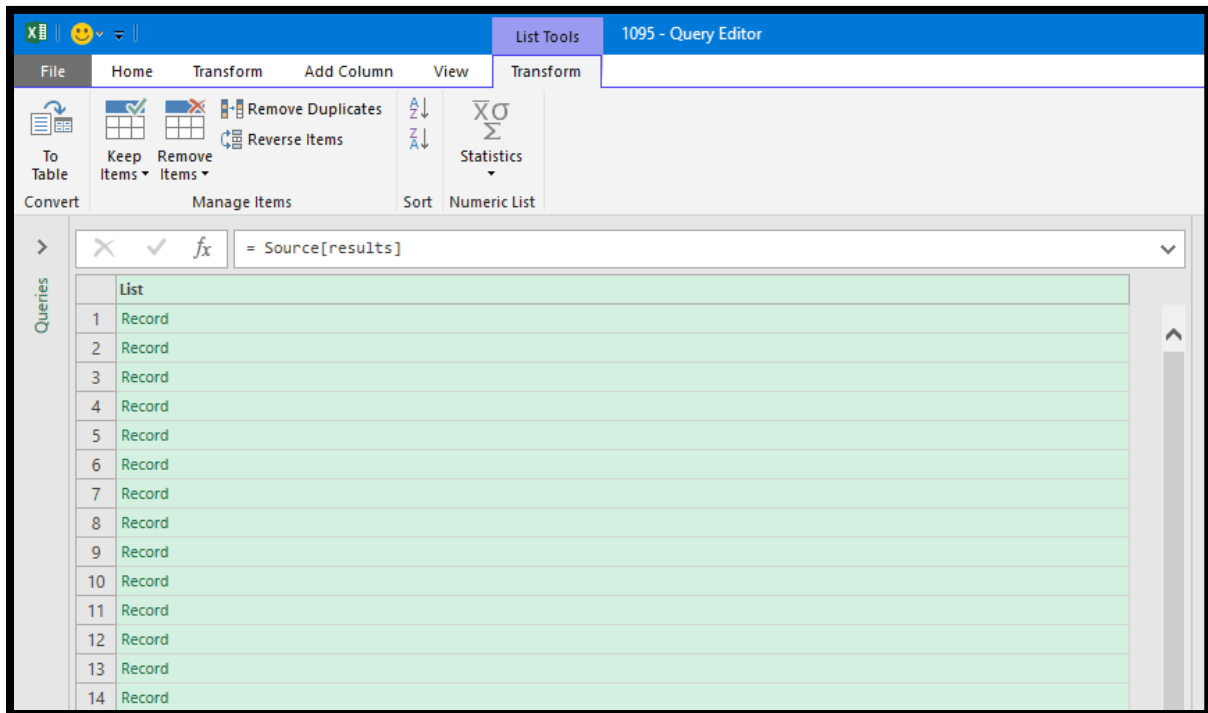
Figure 18 Transform Tab of Query Editor

Right click your mouse over the Column titled "List" and select "Copy Entire List"
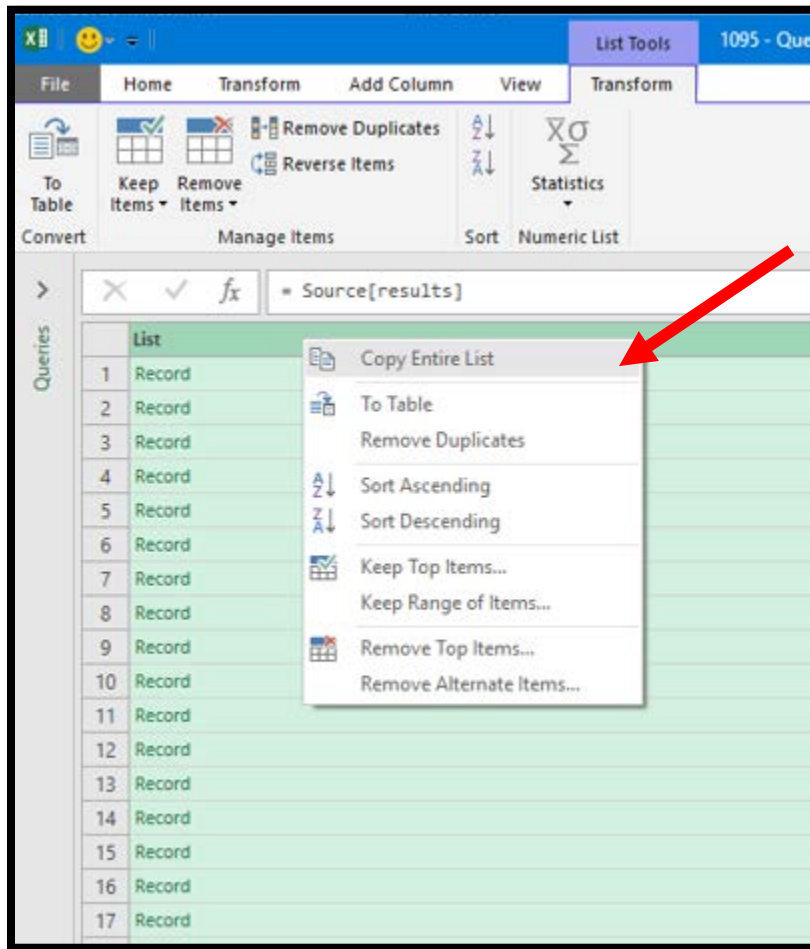
Figure 19 Transform Tab "Copy Entire List" Option

Click the "To Table" button
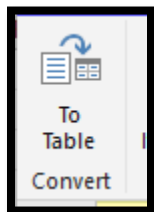
Figure 20 To Table Convert Button

A menu will appear. Click "OK"
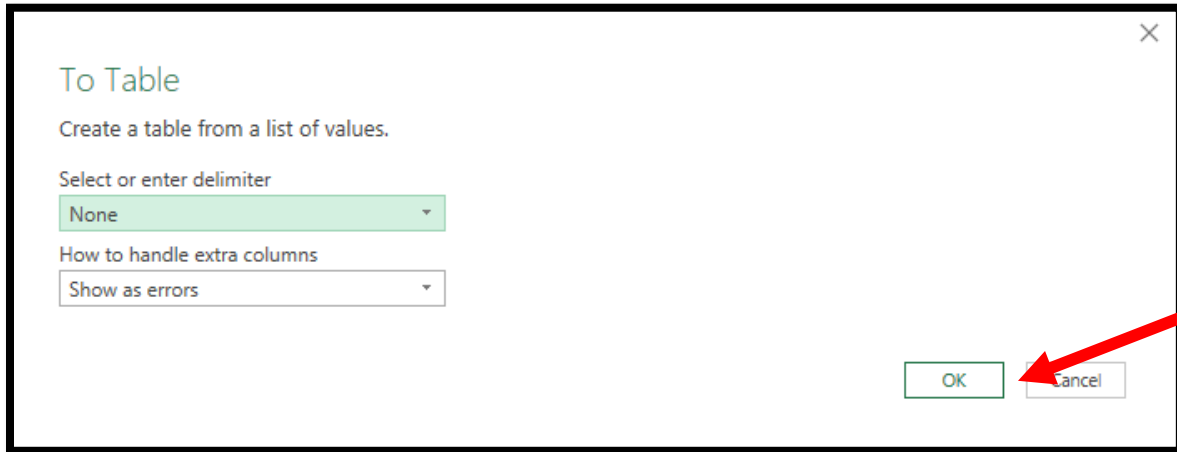
Figure 21 "To Table" Menu

The screen will refresh and display as below.
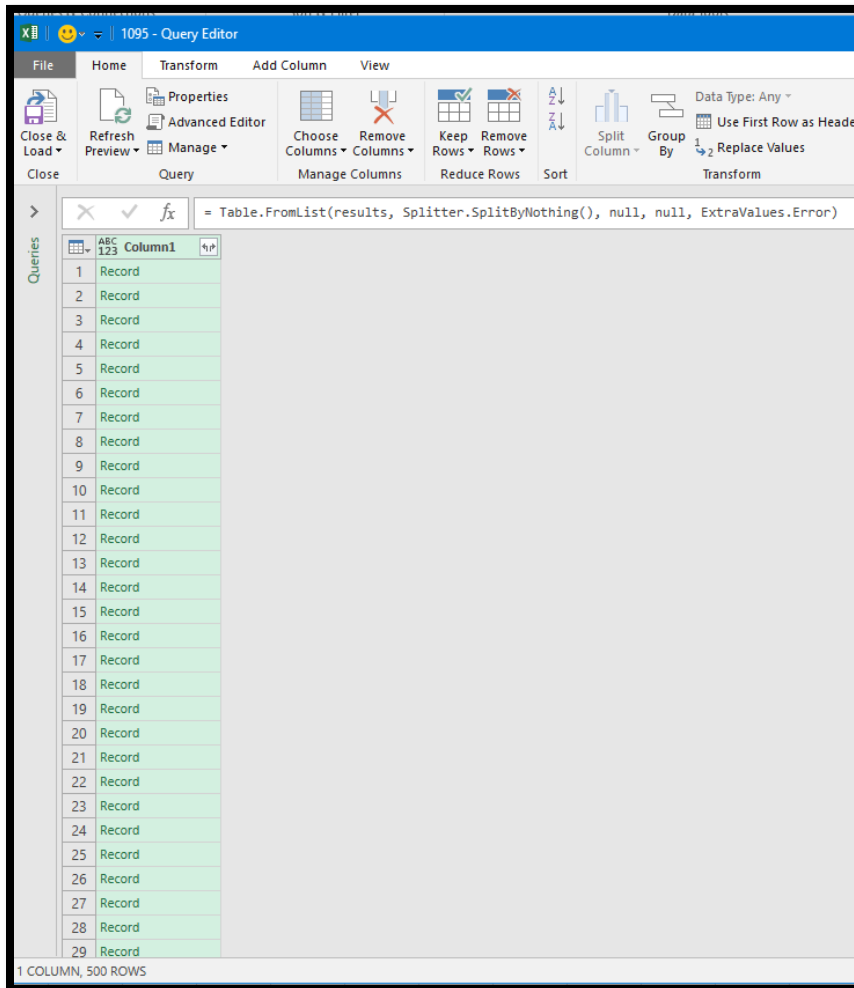
Figure 22 Query Editor with data shown

The screen will refresh. There will be an icon to the right of "Column1". Click the "Double Arrow" icon. The screen will refresh. Click "Ok".
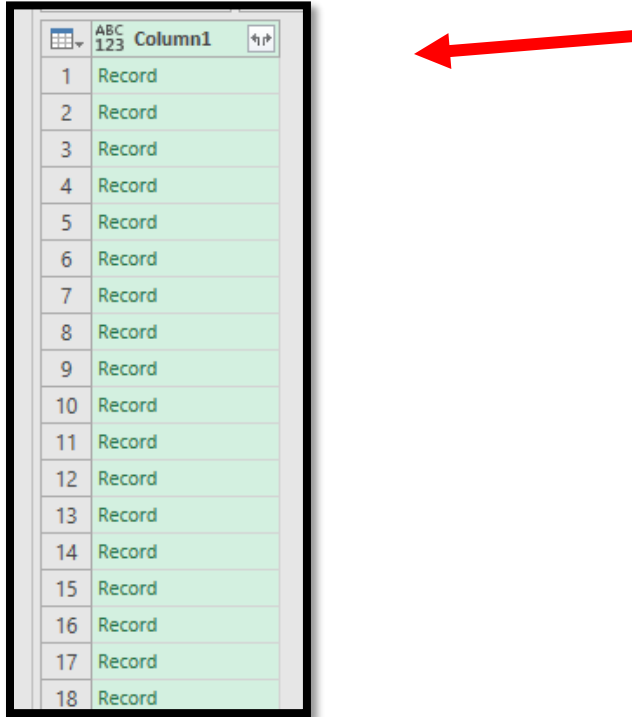
Figure 23 Click Double Arrow to expand

The screen will refresh and show. Click "Ok". If you want to exclude columns from importing, de-select the columns here and click "Ok"
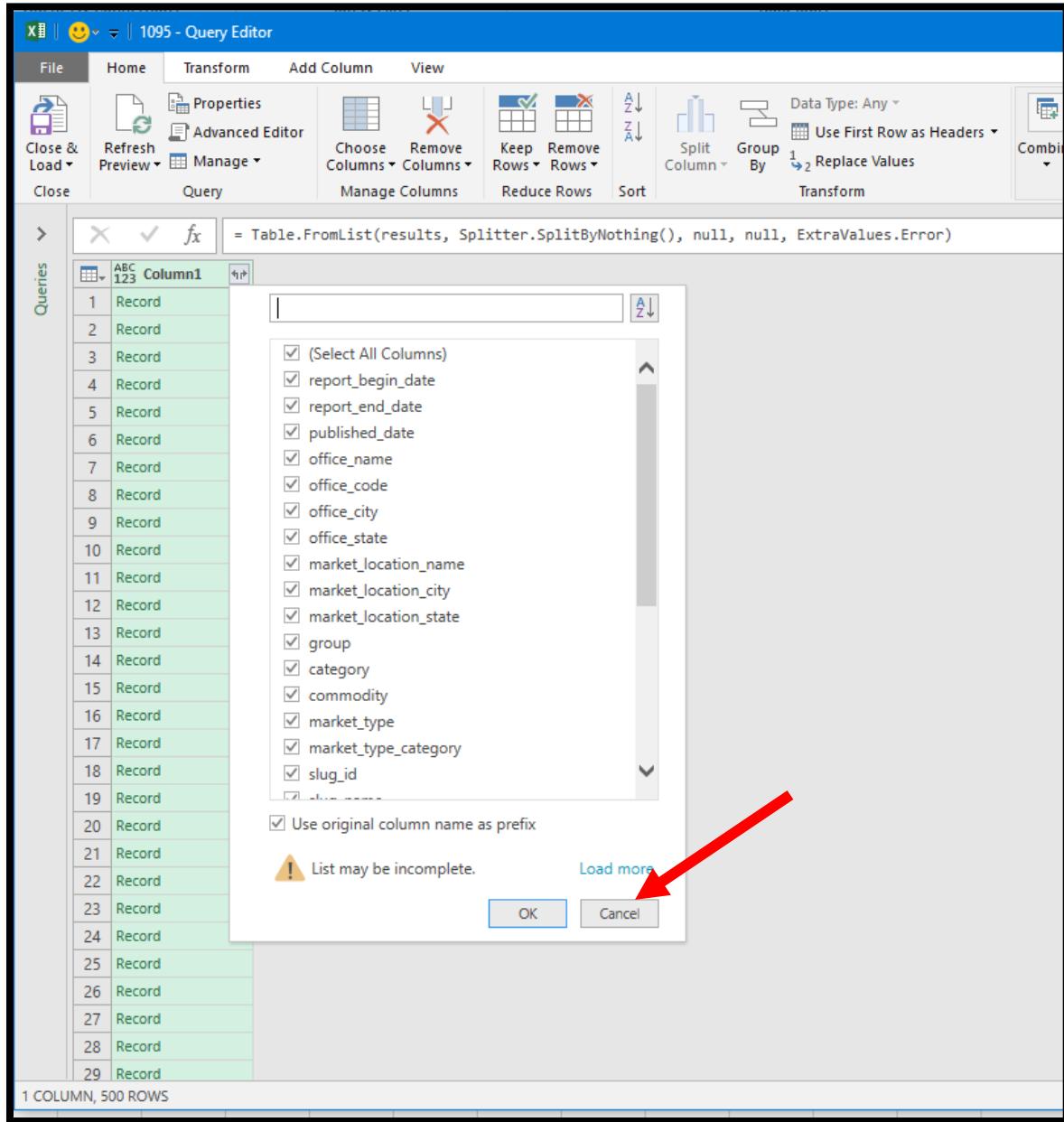
Figure 24 Column Selection Menu

The screen will refresh and appear like this.
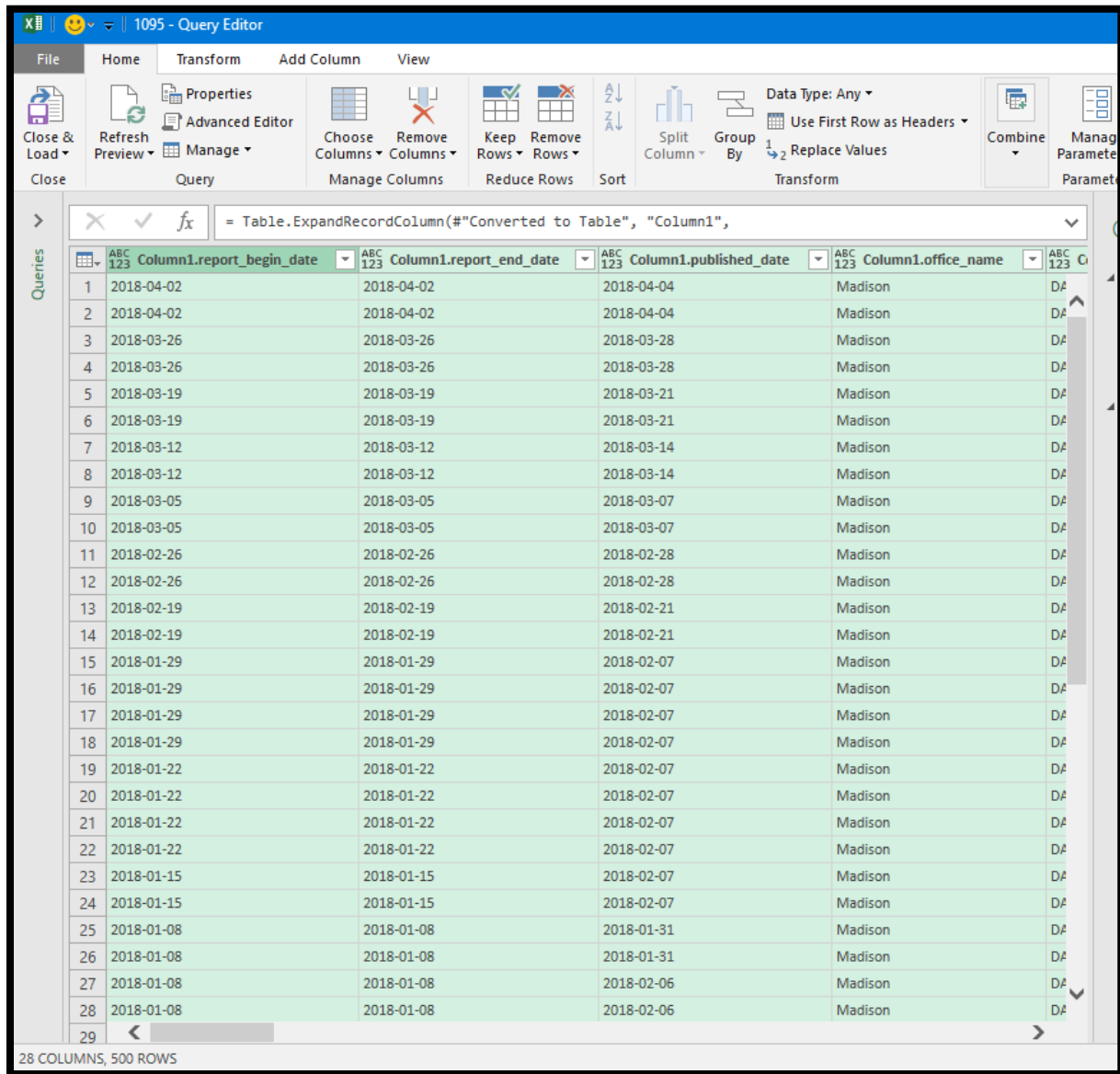
Figure 25 Columns of Data Shown

Select "Close and Load" button.
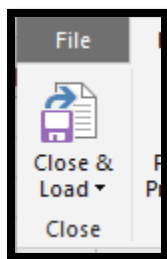
The screen will refresh and appear as below. You have successfully pulled data from the MARS API. You are free to manipulate, modify, or delete data here. This is your local copy of this data.

At any time, if you want to refresh the data, click the "Refresh" button. The Excel file will automatically pull the data again from the MARS API.
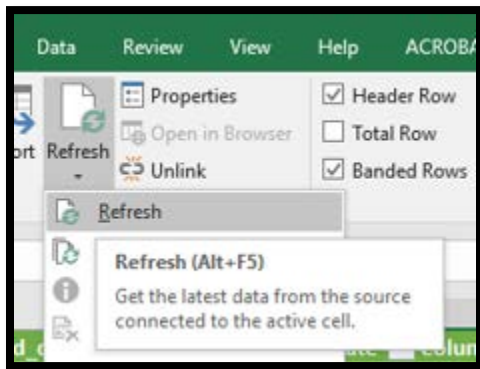
3 Livestock Mandatory Price Reporting System Web Service to Excel

3.1 Overview

The Livestock Mandatory Price Reporting System (LMPRS) offers a public facing Web Service that allowd users to query for publicly released aggregated data reports. The Help Guide for this web service is available https://mpr.ams.usda.gov/mpr/webServiceGuide.pdf.

This web service is dated, has limited filtering capabilities, and only offers XML data extraction. It is expected that later in 2018, LMPRS data will be available in MARS via My Market News[3]. Once on MARS, our customers can pull this data through the API in a Json format.

This guide explains how to create query strings using the URL to request data and provides provides several examples on how to tailor the data to the desired results. The examples use the LM_CT100 5 Area Daily Weight Average Direct Slaughter Cattle – Negotiated report, but these instructions apply to any LMPRS report.

3.2 Implementation

By referencing the Help Guide (https://mpr.ams.usda.gov/mpr/webServiceGuide.pdf) , there are several working examples to pull from. Users are free to tweek the URL to the data query they desire.

The URL for pulling "LM_*CT100, 5 Area Daily Weighted Average Direct Slaughter Cattle – Negotiated"* for data between 01/08/2018 and 01/12/2018, below is:

https://mpr.datamart.ams.usda.gov/ws/report/v1/cattle/LM_CT100?filter={"filters":[{"fieldName":"Report%20date","operatorType":"BETWEEN","values":["01/08/2018","01/12/2018"]}]}

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[3] https://mymarketnews.ams.usda.gov/

Select File >> Save As

Figure 26 LMPRS Data shown in XML format

The filename will populate with your selected data set. Save to a local location. Select "Save".
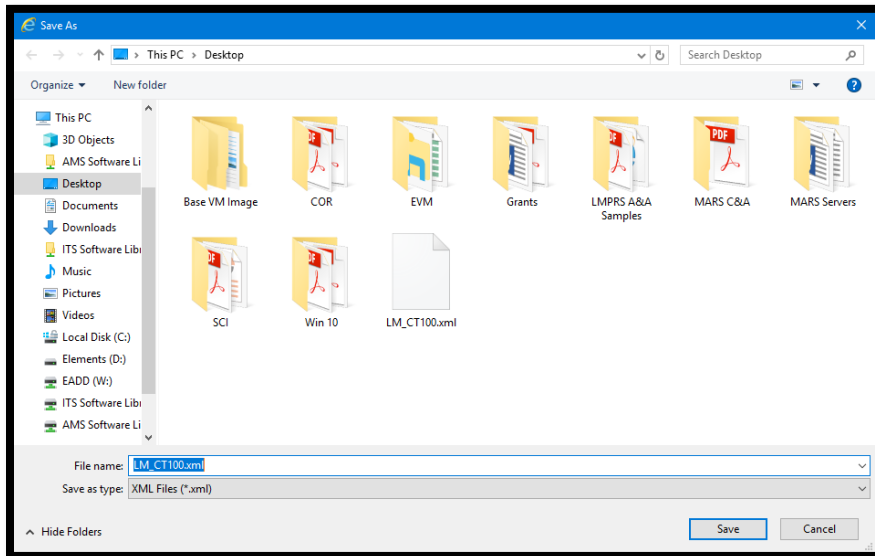

Figure 27 Save XML File down to your local machine

Open Microsoft Excel with a blank Worksheet.
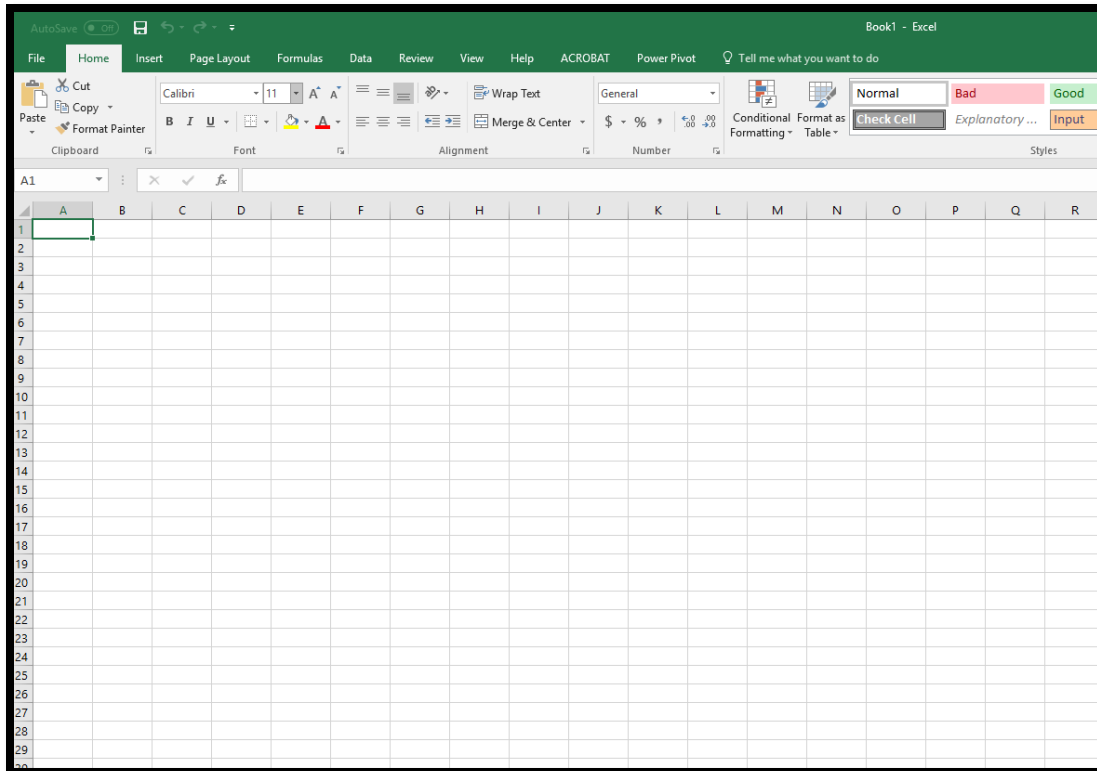
Figure 28 Excel with blank worksheet

Select File >> Open >> Browse >> Select XML file. Select Open.
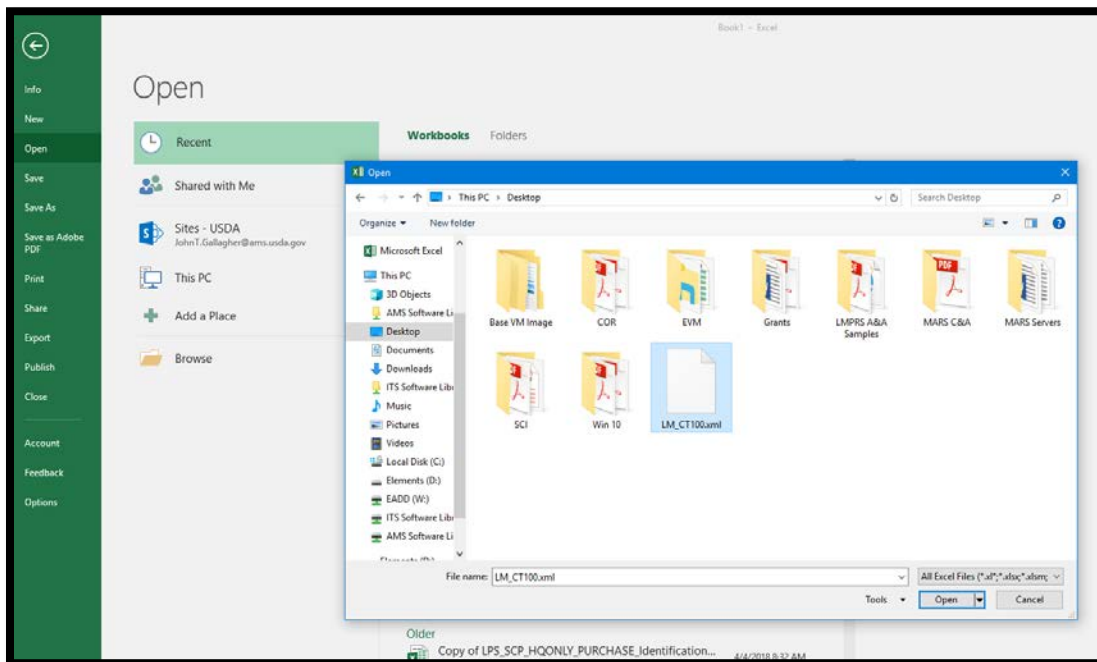
Figure 29 Select XML file

A menu will appear. Leave the default selection and select "Ok".
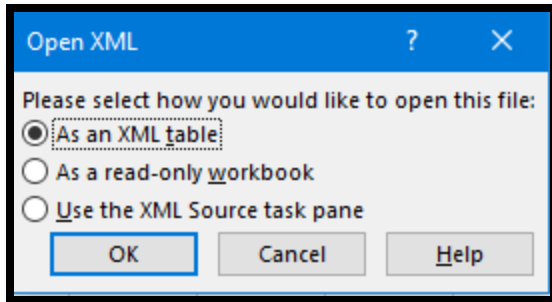
Figure 30 Leave default selection and select OK

Data will automatically import and display as below:

Figure 31 Imported XML Data showing.

The import of LMPRS data into the spreadsheet is static. It is not dynamically connected to LMPRS, as is the MARS API is.

The AMS team is working to incorporate LMPRS data into the MARS API so that in the future, users will be able to have both voluntary and mandatory in one location. This tie in should be completed before the end of 2018.