IOWA STATE UNIVERSITY
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INSIDE . . .

UPDATES

The following Information Files and Decision Tools have been updated on extension.iastate.edu/agdm:

A1-33 2023-2024 ARC-CO & PLC Payment Estimator for Iowa

A1-33 2018 Farm Bill Payment Projections and Data by Crop and County (2019-2022 crop years)

C2-07 Lease Supplement for Investing in Improvements on a Rented Farm

C3-14 Understanding Cash Flow Analysis

C3-55 Financial Performance Measures for Iowa Farms

The following Video has been updated on extension.iastate.edu/agdm:

A1-10 Chad Hart's Latest Ag Outlook

The following Profitability Tools have been updated on extension.iastate.edu/agdm/outlook.html:

A1-85 Corn Profitability

A1-86 Soybean Profitability

A2-11 Iowa Cash Corn and Soybean Prices

A2-15 Season Average Price Calculator

D1-10 Ethanol Profitability

D1-15 Biodiesel Profitability

Planning for end-of-life costs and expenses

By Kitt Tovar Jensen, staff attorney, Center for Agricultural Law and Taxation, Beginning Farmer Center Coordinator, 515-294-5608 | kwtovar@iastate.edu

A common misconception in farm estate and succession planning is that an estate plan is only used after an individual passes away. In fact, a comprehensive estate plan should also provide for possible long-term care needs, dictate health care directives, and designate a trusted individual to oversee desired funeral arrangements. Determining these arrangements in advance can lessen the burden on loved ones after death. Additionally, proper estate planning can help farm families manage other potential costs such as inheritance taxes or estate taxes.

An inheritance tax is a tax on an individual bequest to a beneficiary. Currently, six states impose an inheritance tax. Generally, state laws exempt the deceased's spouse as well as lineal descendants or ascendants from paying an inheritance tax. Iowa is phasing out its inheritance tax which will end on January 1, 2025. There is no federal inheritance tax.

The federal estate tax, on the other hand, is a tax imposed on the value of an estate that exceeds the Unified Estate and Gift Tax Credit. Under the current federal tax system, the value of assets gifted during life is combined with the value of a taxable estate at death to determine the amount, if any, of gift and estate taxes due. In 2023, the basic exclusion is $12.92 million per person ($25.84 million per married couples). Because of this historically high exclusion, very few farm estates (approximately .16%) are subject to gift and estate taxes[1/].

> **Example**: A single individual dies in 2023 with a taxable estate of $13.92 million. The estate would only owe taxes on $1 million ($13.92 million – $12.92 million).

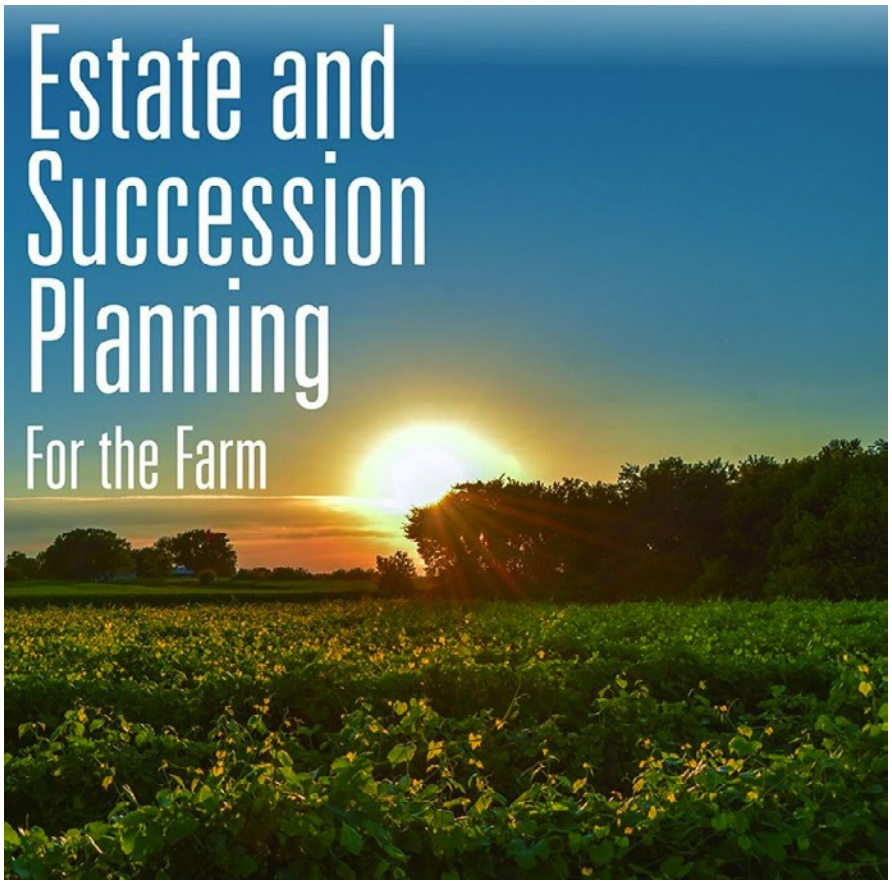
In 2026, the Unified Gift and Estate Tax Credit will revert to $5 million, adjusted for inflation. Because Congress may choose to increase or decrease the exemption beforehand, farmers must stay informed and work closely with their tax advisor and lawyer.

Chapters seven and eight of the Estate and Succession Planning for the Farm workbook, https://store.extension.iastate.edu/product/4319, have additional

information on end-of-life costs and expenses.

The replay of our recent Women Managing Farmland webinar provides further insight on **End-of-Life Taxes and Expenses**, https://vimeo.com/873466236, or view the entire **Women Managing Farmland series**, https://go.iastate.edu/AGDMEVENTS.

This bi-monthly webinar series is part of a multi-year project led by the extension farm management team's women in ag program to better understand and meet the educational needs of women farmland owners. The series is offered through collaborations with Iowa State's Center for Agricultural Law and Taxation, Water Quality Initiative, and the Department of Economics. The project is bringing comprehensive land management information to audiences of women farmland owners.



Women Managing Farmland programs and resources are financially supported by a USDA National Institute of Food and Agriculture - Critical Agriculture Research and Education grant (2021-68008-34180) and a Farm Credit Services of America gift. For information on Women Managing Farmland courses, visit the **Women in Ag website**, www.extension.iastate.edu/womeninag/.

[1/] Tia McDonald and Ron Durst, **Less Than 1 Percent of Farm Estates Owed Federal Estate Taxes in 2020**, https://go.iastate.edu/XAGE6R.

Pork industry structural changes possible

By Lee Schulz, extension livestock economist, 515-294-3356 | lschulz@iastate.edu

Returns to farrow to finish production posted a sharp loss of $58 per head in April 2023 according to the Iowa State University Estimated Livestock Returns model and are projected to average a loss of $32 per head in 2023.

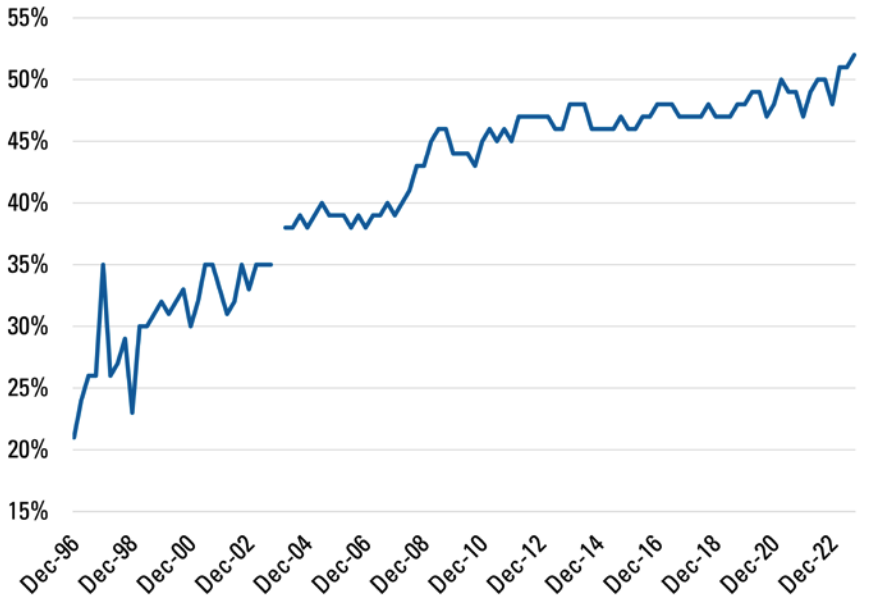
The next year continues to look difficult financially for hog producers. An average annual loss of $18 per head is forecasted for 2024. If realized, 2023 and 2024 will go down as the worst two year stretch for profitability in hog production, even eclipsing the infamous losses in 1998 and 1999. But profits will eventually return to the pork industry.

When we look back, we will likely see continuation of two trends: more contract production and more packer owned hogs. Such structural changes provide both challenges and opportunities to everyone in the pork supply chain. Those who manage through this tough time will earn rewards.

Who does what under contract production?

The total number of hogs under contract owned by operations with over 5,000 head, but raised by contractees, accounted for 52% of the total United States hog inventory, up 2% from 2022 (Figure 1). This is according to the latest Hogs and Pigs Report, published by USDA's National Agricultural Statistics Service, and reporting inventories as of September 1, 2023. This contract production statistic has been included in the narrative of the quarterly Hogs and Pigs Report since December 1996 when it was 21%.

Figure 1. Percent of total US hog inventory owned by contractor operations with over 5,000 head, but raised by contractees. (Quarterly, December 1, 1996 through September 1, 2023.) Data Source: USDA-NASS.



Production contracts deal specifically with the production and management of hogs.

A production contract is an agreement between a contract grower or contractee and a contractor or integrator. It sets terms, conditions and fees the contractor will pay to the contractee to produce pigs. A production contract shifts some risk and control from the grower to the contractor. Most production contracts include written terms for length of contract, terms for renewal, conditions for termination and specific language defining which party is responsible for certain inputs in the production of pigs.

Typically, a contractor provides pigs or breeding stock, feed and other services to a grower. The grower manages the hogs at his or her farm operation until they are ready for market or transfer to other farms. Contract growers have large capital investments in specialized buildings and equipment. Fixed costs to operate such facilities have a major impact on the profitability and net returns to the grower's investment and management. Growers also face other

business risks including rising interest rates, changes in fuel and utility rates and counter-party risk.

Complexity heightens counter-party risk

Hopefully production contracts reduce risk exposure for both parties. But contracts also make both parties more vulnerable to actions, or failures to perform, by the other party. That's counter-party risk.

Rising use and increasing contract complexity bring potentially more counter-party risk for producers. Counter-party risk was minimal when producers were more or less stand-alone businesses. They purchased inputs and sold hogs through arms-length transactions in spot markets with many buyers and sellers.

Integrators also face financial risks and economic pressures. Risk exposure includes potential hikes in grain, soybean meal and other feed ingredient prices, changes in hog prices, changes in transportation costs and production risks associated with disease or other factors that reduce pig performance and efficiency. Sometimes contractors provide contractees incentive bonus payments for better feed conversion or lower death loss to share some of this risk but also some of the reward.

The integrator's goal under the contract is cost effective hog production. The integrator's intent is to pay the grower for management and services to produce pigs and transfer facility maintenance and manure management responsibilities to the grower. The business expectation of both parties is that the arrangement will provide both parties an opportunity for return on investment.

Earlier profits drive current losses

Many producers realized record high profits in 2014. Estimated annual farrow to finish profits were $51 per head, beating the previous annual record of about $35 per head in 1975, 1978, 1987, and 2005. Everything in agriculture is cyclical. Profit levels help predict future investment and production levels. Hog producers plowed money back into their operations that brought them to the dance in 2014. This helped contribute to larger operations.

However, significant investment in the pork industry during the last decade brought considerable asset fixity and asset specificity. Producers keep producing in tough times because they cannot sell specialized facilities for what they have invested in them. That's asset fixity. Producers also keep producing in tough times because costs to convert facilities to alternative uses exceeds their value to produce hogs. That's asset specificity. Both delay production cuts in response to losses. One could argue this continues to play out in current survey estimates of the number of sows, gilts, boars, and young males for breeding on US farms.

The US breeding inventory on September 1, 2023 was 6.079 million head, down 1.2% from September 1, 2022 (Table 1). During the 1970s, year-to-year breeding herd changes of +/- 10% were not unusual. Even during the late 1990s year-to-year declines in the breeding herd were over 5%. Technology developments and industry structure has changed a lot since then.

Producers were not the only ones expanding during the last decade. In 2012, the US had 600 federally-inspected hog slaughter plants, according to the Livestock Slaughter Annual Summary report published by USDA's National Agricultural Statistics Service. This number rose to 636 in 2017, fell to 619 in 2019, before increasing to 659 in 2022.

Changes in the number of producer-owned and packer-owned hogs

Vertical coordination includes all of the ways that output from one stage of production and distribution is transferred to another stage. Vertical integration is one of several strategies that falls under the vertical coordination umbrella.

The decision to integrate vertically depends on many factors, including the change in profits associated with vertical integration, the risks associated with the quantity and quality of the supply of inputs (or outputs) before and after integration, and other factors. A vertically integrated firm, which

Table 1. USDA quarterly hogs and pigs report summary. Source: USDA NASS

	United States			Iowa		
	2022	2023	2023 as % of '22	2022	2023	2023 as % of '22
Sep 1 inventory *						
All hogs and pigs	74,125	74,319	100.3	23,600	24,400	103.4
Kept for breeding	6,152	6,079	98.8	930	880	94.6
Market	67,973	68,241	100.4	22,670	23,520	103.7
Under 50 pounds	21,893	21,913	100.1	5,990	6,220	103.8
50-119 pounds	19,677	19,756	100.4	7,650	7,840	102.5
120-179 pounds	14,013	14,110	100.7	5,180	5,260	101.5
180 pounds and over	12,390	12,463	100.6	3,850	4,200	109.1
Sows farrowing **						
Mar–May	2,967	2,901	97.8	500	460	92.0
Jun–Aug	3,062	2,949	96.3	510	460	90.2
Sep–Nov [1]	3,092	2,930	94.8	535	490	91.6
Dec–Feb [2,3]	2,952	2,912	98.6	480	480	100.0
Jun–Aug pigs per litter	11.13	11.61	104.3	11.65	11.80	101.3
Jun–Aug pig crop *	34,096	34,229	100.4	5,942	5,428	91.3

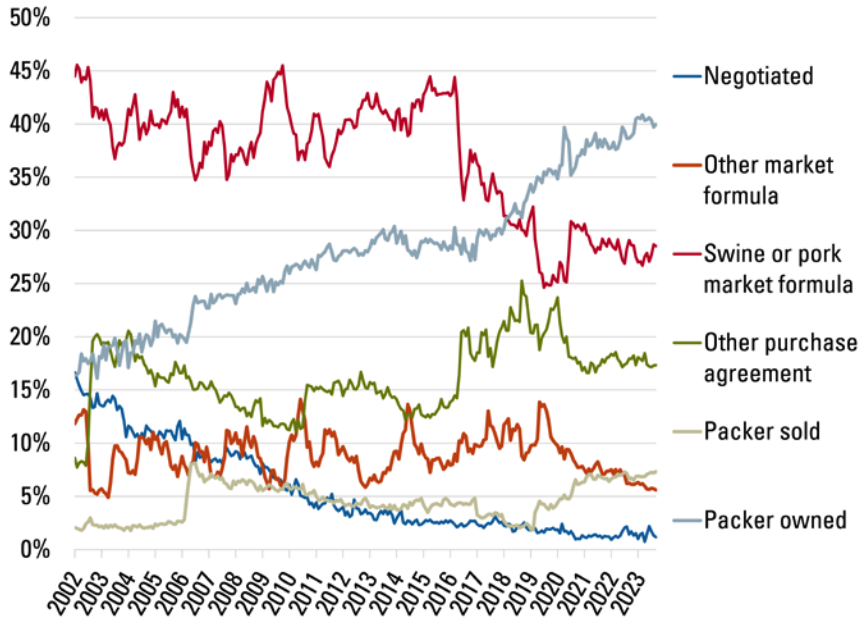
Full USDA report: https://downloads.usda.library.cornell.edu/usda-esmis/files/rj430453j/s4656z59w/4t64j6395/hgpg0923.pdf

* 1,000 head; **1,000 litters; [1] Intentions for 2023. [2] December preceding year. [3] Intentions for 2023-2024.

retains ownership control of a commodity across two or more levels of production, represents one type of vertical coordination. Vertical integration in agriculture often involves ownership of both farm production and processing activities, particularly in certain parts of the livestock sector, including hogs.

The term "packer-owned swine," as defined in the Code of Federal Regulations, means swine that a packer (including a subsidiary or affiliate of the packer) owns for at least 14 days immediately before slaughter. USDA's Agricultural Marketing Service summarize producer-sold, packer-sold and packer-owned transactions in the National Daily Direct Hog Prior Day Report - Slaughtered Swine (LM_HG201).

Figure 2. Hogs marketed by transaction type, national, monthly. Data Source: USDA-AMS.



So far this year, 40.4% of the total barrow and gilt volume included in the LM_HG201 report was packer-owned, up from 28.4% of the volume in 2016 (Figure 2). What changed? Two new pork processing plants opened in 2017 and another new plant opened in 2019. Producers own these new plants. Hogs that were once categorized

as producer-sold are now packer-owned.

Reductions in the number of hog operations and increases in farm size have also occurred alongside increases in production contract use and packer ownership of hogs. According to data from the Census of Agriculture the number of hog operations with inventory declined 45,994 operations, or 37%, between 1997 and 2002 and continued to drop through 2012. In 2017, the number of hog operations with inventory actually increased. There were 66,439 hog operations in 2017, which was up 3,193 operations or 5% higher than in 2012, but still 47% less than in 1997.

The average hog farm size roughly doubled over those two decades, as measured by the number of hogs in inventory per farm. The share of the U.S. hog inventory on farms with 5,000 or more head rose from 40% in 1997 to 73% in 2017. Overall, the US hog inventory increased by 18% over the 20-year period, and the average farm size rose from 490 hogs in 1997 to 1,089 hogs in 2017.

The 2022 Census of Agriculture data is set to be released in February 2024. This data will capture some of the structural changes currently underway in the pork industry.

Commercial slaughter and price forecasts

Table 2 contains the Iowa State University price forecasts for the next four quarters. Prices are for the Iowa-Minnesota producer sold weighted average carcass base price for all purchase types. Basis forecasts along with lean hog futures prices are used to make cash price projections. The table also contains the projected year over year changes in commercial hog slaughter.

Table 2. Commercial hog slaughter projections and price forecasts, 2023-2024

	Year-over-Year Change In Commercial Hog Slaughter (%)	ISU Model Price Forecast, IA-MN Base Price, All Purchase Types ($/cwt)	CME Futures (9/29/23) Adjusted for IA-MN Producer Sold Weighted Average Carcass Base Price for All Purchase Types Historical Basis ($/cwt)
Oct-Dec 2023	0.97	71-75	73.22
Jan-Mar 2024	0.39	73-77	74.90
Apr-Jun 2024	-1.99	84-88	85.41
Jul-Sep 2024	1.47	87-91	88.83

Exports remain a drag

By Chad Hart, extension crop market economist, 515-294-9911 | chart@iastate.edu

While there are plenty of differences between last year's outlook and this year's, one thing has not changed, international sales have been weaker than average. The September and October USDA reports incorporated new acreage information from the USDA Farm Service Agency (FSA) and new survey data from National Agricultural Statistics Service's (NASS) farmer and objective yield surveys. For both crops, USDA's new estimates indicate more acreage and less yield. The national corn planted area estimate was raised to 94.9 million acres, 6.3 million more acres than last year. The national average corn yield estimate dropped to 173 bushels per acre, just slightly below last year's level. Putting together the acreage and yield updates, USDA found evidence to keep the corn production estimate north of 15 billion bushels for the year. That puts this year's production over 1 billion bushels above last year and within 10 million bushels of the 2021 total. Similar supply changes were observed in the soybean market. Nationally, USDA slightly increased total planted area for soybeans to 83.6 million acres, down nearly 4 million from 2022. The national average soybean yield estimate came in at 49.6 bushels per acre, on par with last year's yield. Overall, the projection for national soybean production is 4.104 billion bushels, which is a large crop, but not quite as large as last year.

USDA also updated corn usage, with cuts impacting the major usage categories. The September Grain Stocks report set the 2022-23 corn ending stocks at 1.361 billion bushels, 90 million bushels below the previous estimate. Thus, USDA made several adjustments to get the corn balance sheet to balance out. They started with small adjustments to 2022 supplies, lowering production by 15 million bushels and imports by 1 million. But the larger changes occurred in usage. 2022 feed and residual usage increased by 124 million bushels, but all other usage categories were reduced. Corn usage for ethanol fell 18 million bushels, as did corn usage for sweeteners. 2022 corn exports were lowered by 4 million bushels. And while stocks were reduced, USDA lowered its 2022-23 season-average price estimate by a penny, to $6.54 per bushel. For the new (2023) crop, feed and residual usage estimates fell by 25 million bushels and exports declined by 25 million bushels. Overall corn usage is projected to be higher, but the gains continue to shrink. The 2023-24 ending stocks are now set at 2.111 billion bushels, down 110 million bushels from the September estimate, but up 749 million bushels from last year. The 2023-24 season-average price estimate stands at $4.95 per bushel.

Soybean usage adjustments were mixed. For the 2022 crop, much like with corn, production and imports were lowered slightly. Soybean crush was reduced by 8 million bushels. Seed and residual usage dropped by 23 million bushels. And exports were actually increased by 2 million bushels. Those changes boosted the 2022-23 ending stocks to 268 million bushels, so stocks rose, but the market remains tight. The 2022-23 season-average price estimate stayed at $14.20 per bushel. For the 2023 crop, the usage changes were in both directions. The domestic crush expectation increased by 10 million bushels. But exports continue to fall, with 35 million bushels removed there, based on a combination of greater global supplies and competition. Despite the export cuts, 2023-24 ending stocks are projected at 220 million bushels, down 48 million from last year. The 2023-24 season-average price estimate was set at $12.90 per bushel.

As the paragraphs above outline, crop usage is shifting just as quickly as supplies, with exports

being the category with the largest shifts. For corn, USDA's projection showed 2.025 billion bushels exiting the country from the 2023 crop. That would be 364 million bushels above last year's total, but still well below the export totals for the 2020 and 2021 corn crops. The early export sales data is looking slightly better than last year, but still below the 5-year average pace. By the time the corn harvest reaches one-third complete, we usually have roughly 800 million bushels already sold to international markets. Over 2020 and 2021, those early sales exceeded a billion bushels. Currently, we are at 600 million bushels. It's an improvement from last year, but still below the pace we need to hit USDA's target.

Figure 2 shows the year-over-year gains thus far. We are seeing additional sales in many countries, but the gains are only partially filling the sizable losses from last year. Mexico is both our largest corn export market and the biggest gainer this year. Japan, Colombia, and Canada have also purchased more corn. The largest decline is with China, continuing the reduction that started with the 2021 crop. Chinese corn purchases surged under the Phase 1 trade deal for the 2020 and 2021 crops, but have fallen dramatically since the deal expired. Despite the fall in sales, China remains our 4th largest customer for corn (the countries listed in Figures 2 and 4 are the current top 6 markets for each crop, in order). And China will likely be the key to reaching USDA's target for 2023 corn exports.

Figure 1. US corn export sales. Source: USDA-FAS.

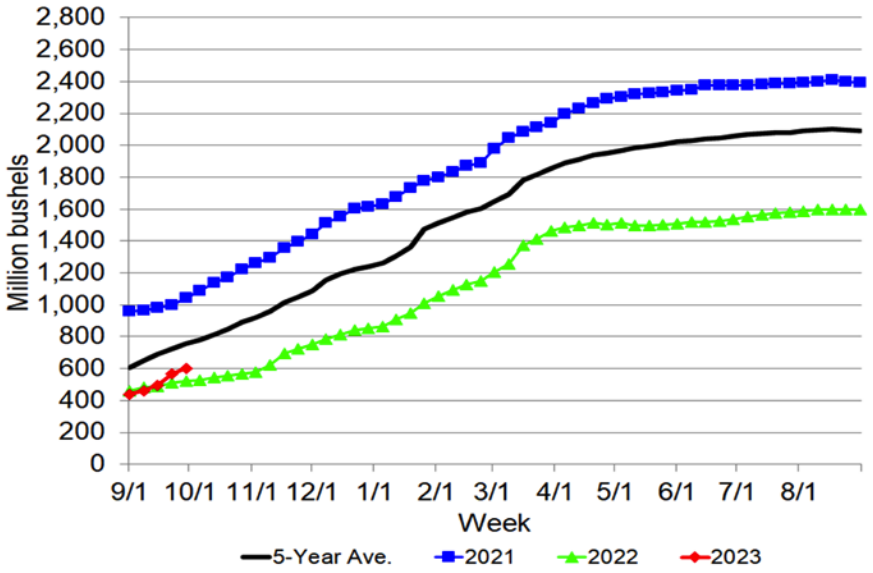
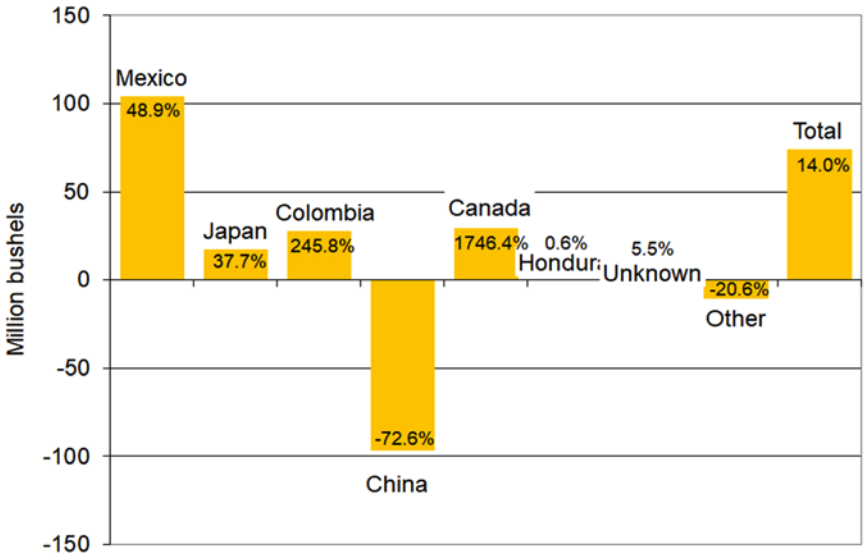


Figure 2. US corn export sales changes. Source: USDA-FAS.



For soybeans, the general story on exports is similar, and again the early data is not encouraging. USDA's current export projection sits at 1.755 billion bushels. That is down 70 million bushels from a couple of months ago, is down 237 million from last year, and is down 511 million from 2020. So, the soybean market is staring at a roughly 22% pullback in exports over 3 years. And given the relatively dependence of soybeans on exports, it's a significant cut. US soybeans are facing increased competition with record global supplies and a strong US dollar.

Digging down into the country level data, most of the changes are relatively small, with the exception of China. Compared to this time last year, Chinese soybean purchases are down by 200 million bushels. That is two-thirds of overall drop in soybean exports.

Corn prices have been treading water since August. Meanwhile, soybean prices have mostly drifted lower. The season-average price estimates based on futures have floated in the $4.70-4.90 range for corn and the $12.40-12.80 range for soybeans during the first half of October. Traders have been watching US crop supply and usage estimates retreat at roughly the same pace. For prices to break out these ranges, we'll need to see some positive export news.

Listen to the latest **Market Outlook video**, https://youtu.be/E6mRbzs8X1k, for further insight on outlook for this month.

Figure 3. US soybean export sales. Source: USDA-FAS.

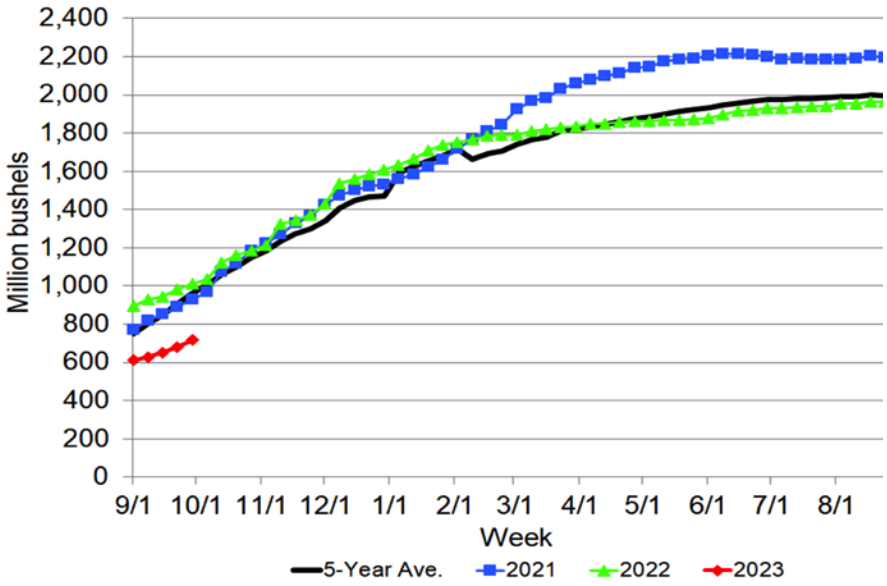
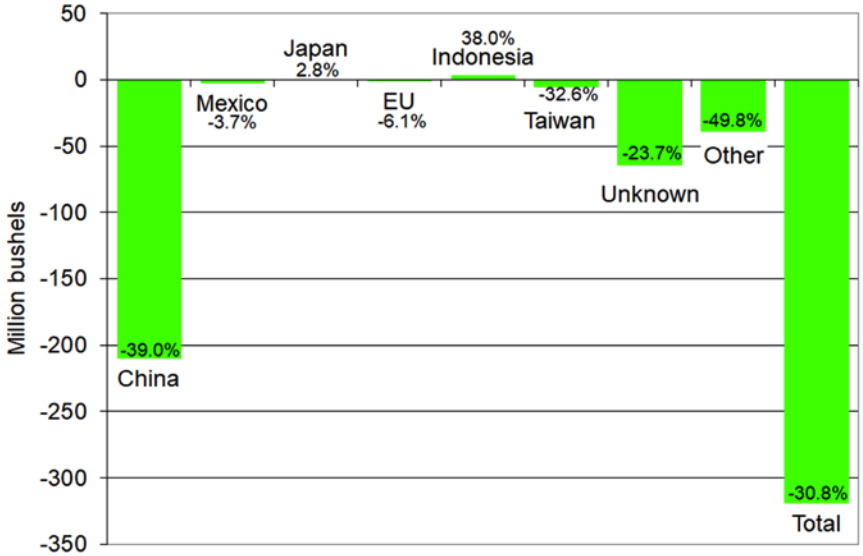


Figure 4. US soybean export sales changes. Source: USDA-FAS.



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