



# Ag Decision Maker

## A Business Newsletter for Agriculture

Vol. 25, No. 7

www.extension.iastate.edu/agdm

May 2021



### The rally charges on

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

Corn and soybean prices continue to march higher each passing week. The fuel for the rally has come from both a supply and demand perspective. Crop usage has been strong over the past nine months, despite the challenges presented by COVID-19. Crop supplies, while large, were reduced by weather issues worldwide, mainly drought. And those weather challenges remain in place for both the US and South America. The combination implies tightening future ending stocks, which has led to the surge in prices. Without some break in these demand and supply patterns (and it is raining in central Iowa as I write this), the price rally, especially for new crop futures, has room to continue.

The largest change year over year for crop demand has been from the international sector. Corn and soybean exports started the marketing year in a strong position and have already reached record levels. The big question moving forward will be how many

additional old crop sales will we make over the next couple of months, given where prices have already gone. Figure 1 shows corn export sales over the last three marketing years. Corn export sales topped the previous record in late March, with over five months left in the marketing year. While the pace of corn sales has slowed, it is still growing. Based on the sales from the 2018 and 2019 corn crops, the US could add another 150-300 million bushels by fall. Nearby corn futures have broken through the \$7 barrier, searching for the price levels to dissipate additional export demand.

A somewhat similar tale is playing out for soybeans. Soybean export sales are at record levels and the market is still picking up a few additional sales. China has been the major driver in the marketplace, but the most recent weekly export sales report highlighted more sales into Japan, Malaysia, Indonesia, and Colombia. Based on the 2018 and

*continued on page 2*

### Handbook updates

For subscribers of the handbook, the following updates are included.

**Grain Marketing Terms**  
– A2-05 (9 pages)

**Custom Farming – A Share of the Crop** – A3-13 (3 pages)

**Operating Leverage**  
– C1-45 (3 pages)

**Cash Rental Rates for Iowa 2021 Survey** – C2-10 (12 pages)

**Computing a Cropland Cash Rental Rate** – C2-20 (4 pages)

**Flexible Farm Lease Agreements**  
– C2-21 (4 pages)

Please add these files to your handbook and remove the out-of-date material.

*continued on page 8*

### Inside . . .

Exemption of sales tax on certain uses of utilities and fuel ..... Page 4

The earth is getting warmer ..... Page 5

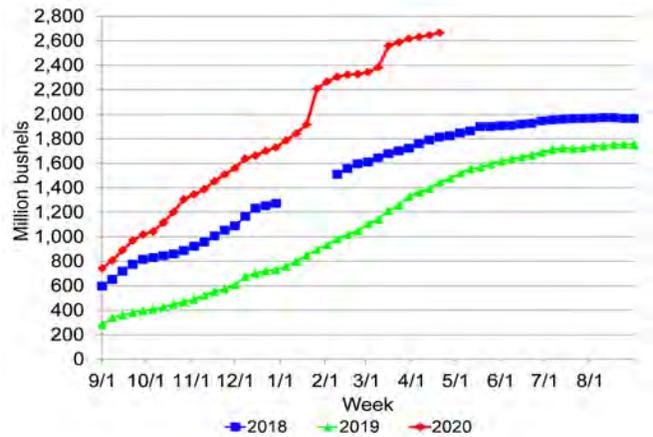
Recapping 2020 through the cattle industry lens ..... Page 6

The rally charges on, continued from page 1

2019 export patterns, there could be an additional sales push of 100-200 million bushels by fall. So the nearby futures have soared past the \$16 mark, as export sales have marched on. Advance sales for the 2021 crop have been piling up as well. Old crop supplies are getting scarce, and new crop prospects are worrisome.

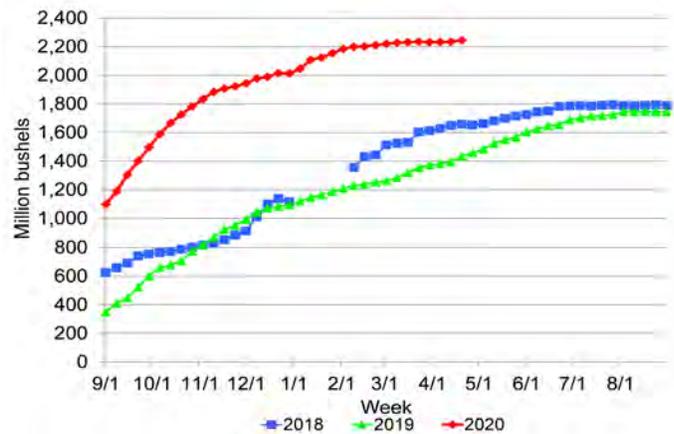
While planting progress has been brisk, the concerns about the new crops have less to do about the speed of planting and more to do with the state of the soils in which we are planting. The drought of 2020 has extended into 2021 and has expanded in recent weeks to cover substantial sections of the Corn Belt. Most of the Great Plains states and Iowa have been significantly impacted, with extreme drought conditions covering most of North Dakota and moderate to severe drought running from southeast South Dakota to Ohio. Even the eastern Corn Belt is suffering from abnormally dry conditions. The drought of 2020 allowed farmers to accelerate planting, but the lack of soil moisture could prove to be a major problem for the new seedlings. Needed rain passed through the heart of the Corn Belt during Mother's Day weekend, but more rain will be needed (and quickly) to support the emerging crops.

**Figure 1. 2020-21 corn export sales**



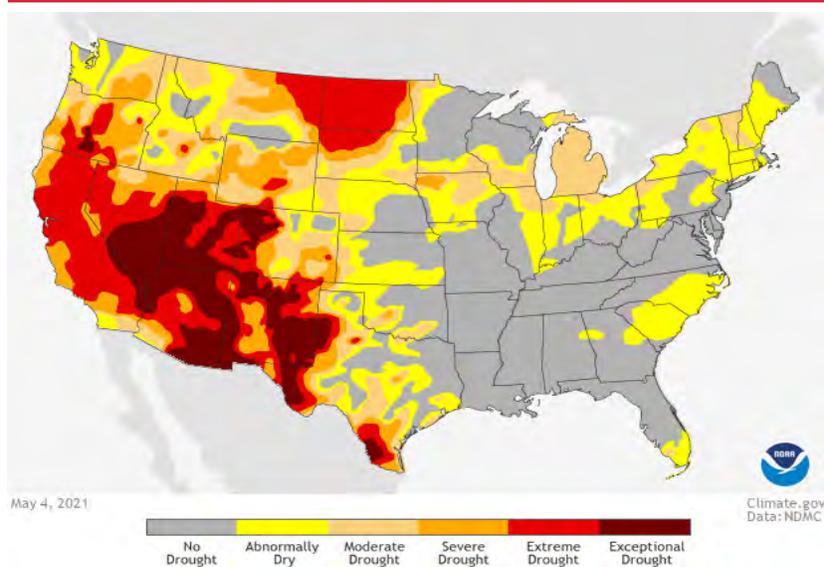
Source: USDA-FAS

**Figure 2. 2020-21 soybean export sales**



Source: USDA-FAS

**Figure 3. US drought monitor**

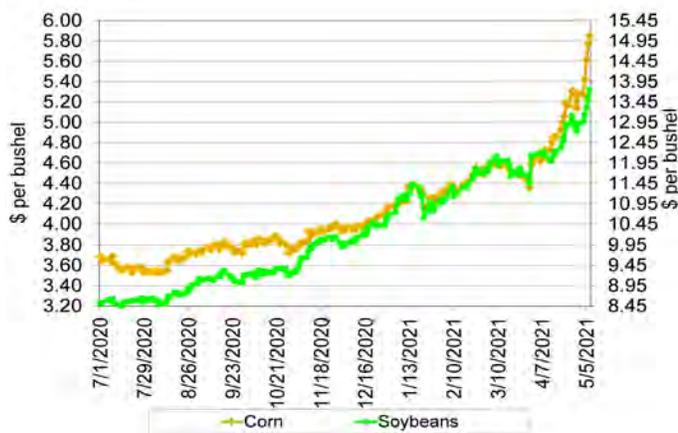


Source: NDMC

The rally charges on, continued from page 2

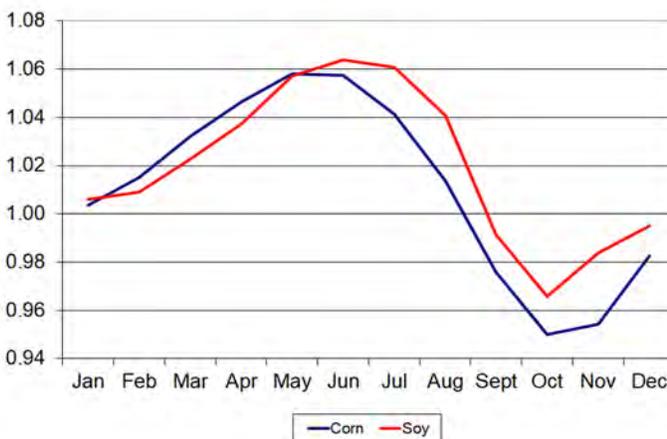
The combined force of continuing old crop sales and drought concerns have ignited a fire in the crop markets. As Figure 4 shows, the price rally started with the derecho last year, steamrolled through harvest, and maintained momentum throughout the winter and early spring. While the markets did pause for breathers briefly in January and March, the price trend has been positive for the past 10 months. And prices, like planting, have accelerated in April and May. The markets have built in substantial weather premiums for the new crops. December corn futures raced by the \$6 mark and November soybean futures have topped \$14. Crop demands have remained resilient in the midst of this price spike. But that could change quickly, especially given the most recent price surge.

**Figure 4. 2021-22 projected season-average prices**



Derived from futures

**Figure 5. Seasonal crop price indices, season-average price = 1**



Derived from USDA-NASS data, 1980-2018

Crop farmers are enjoying the price rise, but should also be preparing for the inevitable pullback. While these markets have the strong forces of the drought and international demand pushing them higher, weather patterns can change quickly, as can the buying patterns of our international customers. In the past, we've seen the markets rise this quickly before, only to come crashing down just as fast. The 2008 crop year was a classic example. Corn futures started the year around \$4 per bushel, soared to nearly \$8 around the 4th of July, only to collapse back to \$4 in the middle of harvest. We have replayed the first part of that year. Hopefully, we will not fully complete the rerun. But we should prepare for potential price reductions around harvest.

Figure 5 displays the general patterns for price movements throughout the year, based on roughly 40 years of price data. The seasonal patterns show corn and soybean prices usually peak within the next three months. The average decline in prices from early summer to harvest is roughly 10%. Years like 2008 show that it can be much greater. On the other hand, having either the drought or strong international demand continue through the summer will support higher prices entering harvest time. The 2021 crop year has become a high risk, high potential return year, like several of the years from 2006 to 2013. The seasonal patterns indicate that sales made in the early summer window often turn out well in hindsight, capturing higher average prices over the years. This year, current sales opportunities are offering some of the best returns farmers have seen in nearly a decade and creating chances to turn high potential returns to high realized ones. While we would all like to capture the highest price in the year, most of us miss it while either holding out for more or fearing we'll hit the sale button too quickly. But given the price levels today, I'm reminded of that old marketing saying, "It's hard to lose money when you're making a profit."



## Exemption of sales tax on certain uses of utilities and fuel

By Charles Brown, farm management specialist, 641-673-5841, [crbrown@iastate.edu](mailto:crbrown@iastate.edu)

Certain uses of utilities and fuel are exempt from Iowa sales tax. The purchase of water, electricity, liquefied petroleum gas or other forms of energy used for agriculture production may be exempt from Iowa sales tax.

To claim these exemptions complete Form 31-113, [Iowa Sales Tax Exemption Certificate \(Energy Used in Processing or Agriculture\)](https://tax.iowa.gov/forms/iowa-sales-tax-exemption-certificate-energy-used-in-processing-or-agriculture-31-113), <https://tax.iowa.gov/forms/iowa-sales-tax-exemption-certificate-energy-used-in-processing-or-agriculture-31-113>, and give it to your supplier. Completion and use of this form will only take care of future sales tax.

If you have been paying sales tax and shouldn't have, you need to file IA 843, [Claim for Refund \(Sales, Use, Excise, and Local Option Tax\)](https://tax.iowa.gov/forms/ia-843-claim-refund-sales-use-excise-and-local-option-tax-22-009), <https://tax.iowa.gov/forms/ia-843-claim-refund-sales-use-excise-and-local-option-tax-22-009>. Claims for refund on current purchases are due within three years of the quarterly due date for the period in which the tax was charged. Formerly, taxpayers could file a claim for refund for sales tax within four or five years of that date. The change was made by the 1999 Legislature to gradually adjust the refund periods to conform to those allowed for other taxes.

Fuels used in heating or cooling of livestock buildings on the farm are exempt from sales and use tax. Fuel used in grain drying is exempt because it is used in processing an agriculture product.

Water used in watering livestock is exempt, as is water used by greenhouses for agriculture purposes.

Electricity used in cooling or heating livestock buildings or grain drying is exempt, but keeping the lights on does not qualify.

Proper documentation must be provided to the utility company to receive the exemption for electric energy or gas used in agriculture production. Separate meters would be ideal, but not always practical. Form 31-113 will help to calculate the percentage of the electricity or gas used for agriculture production.

Each farmer applying for utility sales tax exemption should calculate both the exempt and nonexempt percentages of utility use. Your utility company should be able to help with this calculation, if assistance is needed.

Depending on the type of operation a farmer has, the sales tax could amount to several hundred dollars a year.

Additional information can be found in ISU Extension and Outreach publication PM1321, [Farm Electric Power Sales Tax Exemption](https://store.extension.iastate.edu/product/Farm-Electric-Power-Sales-Tax-Exemption), <https://store.extension.iastate.edu/product/Farm-Electric-Power-Sales-Tax-Exemption>.



## The earth is getting warmer

By Don Hofstrand, retired extension value-added agriculture specialist

Reviewed by Eugene Takle, retired professor emeritus Iowa State University

*This article is the third in a series focused on the causes and consequences of a warming planet*

The earth is in a period of rapid warming. The last five years are the warmest on record. According to NASA, 2016 and 2020 were essentially tied for the warmest since records began in 1880. 2019 was the second warmest.

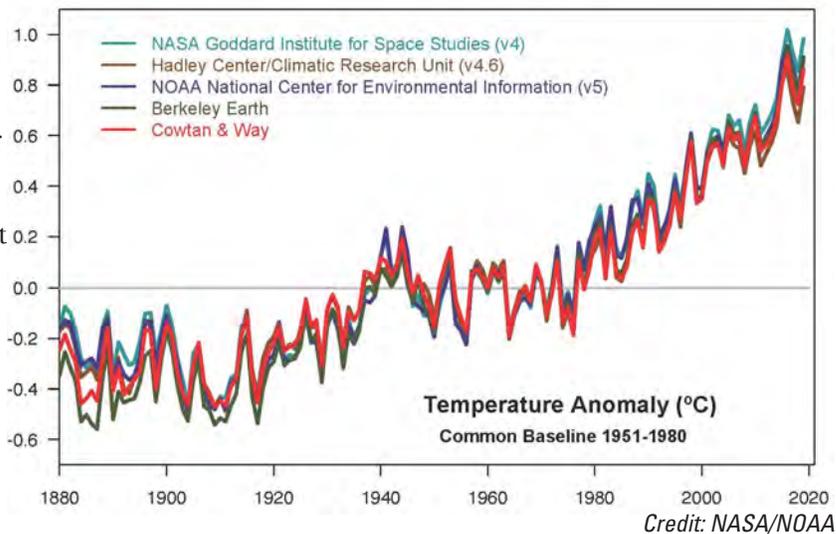
The planet's average surface temperature has risen about two degrees Fahrenheit (slightly over one degree Celsius) since the late 19th century according to NASA and NOAA.

In addition to NASA and NOAA, the warming of the planet is confirmed by other organizations such as the Met Office of England, the Potsdam Institute of Germany, the Japanese Meteorological Society and Berkley Earth.

Further evidence of a warming planet is confirmed by several changes in the earth's climate. For example, glaciers are melting, sea levels are rising, the oceans are warming, Arctic sea ice is disappearing, the land and sea surface is warming, snow cover is declining and wildlife and plant life are moving north. Each of these indicators are supported by multiple data sets.

The warming is not even across the planet. The Arctic is warming at least twice as fast as the rest of the planet. The air over land is warming faster than air over the oceans. In many regions, nights are warming faster than days and winters are warming faster than summers. Scientists have cause-effect evidence of why this is happening. In fact, all of these effects now being observed were predicted by the cause-effect climate model published in the early 1980s.

This amount of warming may not seem significant considering the variations in temperature we experience from day to day and season to season. But the average temperature of the earth has been



surprisingly constant over the last 10,000 years. This constancy has allowed for the emergence of human civilization.

A small change in average temperature can cause significant changes in climate. For example, the earth's average temperature during the last ice age, when huge ice sheets covered much of North America, was only about 10 to 12°F colder than it was at the beginning of the industrial revolution.

With strong economic growth and no efforts to curb greenhouse gas emissions, the rate of warming will remain strong or even increase. Under these conditions the temperature is estimated to have increased by about 8°F with a range of from 5.5 to 9.5°F from 1900 to 2100.

The speed of warming is also a concern. Rapid warming makes it difficult for life on earth to adapt. It took thousands of years for the earth to move out of the ice age. By comparison, the projected 8°F increase by the end of the century described above will have occurred in only 200 years.

A listing of USDA and university websites focused on weather and climate can be found on the [Ag Decision Maker Outlook page](http://www.extension.iastate.edu/agdm/outlook.html#weather), [www.extension.iastate.edu/agdm/outlook.html#weather](http://www.extension.iastate.edu/agdm/outlook.html#weather).



## Recapping 2020 through the cattle industry lens

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

The cattle industry, like probably everyone else, is more than happy to keep 2020 in the rearview mirror. But emerging data document the resiliency of beef production.

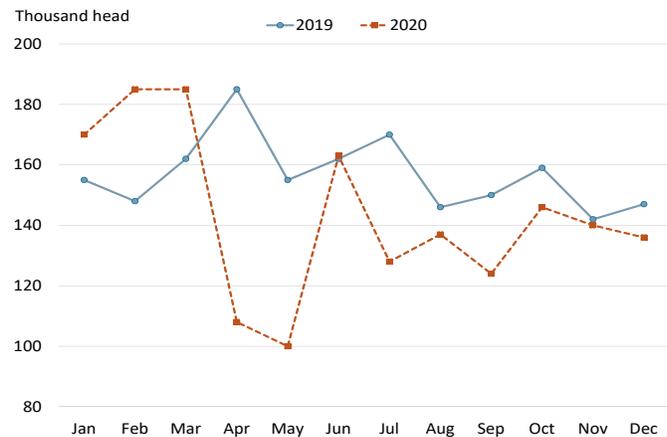
US feedlots marketed 25.132 million fed cattle last year, down 754,000 head from 2019. Marketings from both 1 to 999 head feedlots and 1,000 head or more feedlots dipped roughly 3%. Just over 87% of the marketed cattle were produced in large feedlots, a ratio that has remained consistent over recent years.

As of January 1, 2021 the one-time capacity of feedlots with over 1,000 head capacity was 17.200 million head, up 100,000 head from January 1, 2020. Capacity is a flow indicator. Cattle go in, and then go out. COVID-19-related disruptions slowed capacity utilization or turnover rate. Turnover can be calculated for 1,000 head or more capacity feedlots by dividing annual feedlot marketings by one-time capacity. Longer feeding times in 2020 slowed turnover rates. Even though this metric fell from 2019 and 2018 levels, it was still higher than in the six prior years.

Persistently negative returns are often a sign of overcapacity. That currently is not the case. Some capacity cushion exists that allows cattle to stay in lots if down-stream disruptions occur. That proved advantageous during COVID-19 disruptions. But no excess capacity that needs to be painfully wrung out of the system exists.

Last year, 42% of the fed cattle marketed in Iowa came from feedlots with a capacity of 1 to 999 head, down 2 percentage points from 2019. Iowa marketings dipped 159,000 head, or 8.5%, from 2019 (Figure 1). The majority of the decline was from farmer-feeders. Feedlots with a capacity of 1 to 999 head marketed 98,000 head or 12.0% fewer. Marketings from Iowa feedlots with a capacity of 1,000 head or more slipped 61,000 head, or 5.7%.

**Figure 1. Monthly fed cattle marketings, all Iowa feedlots**



Data Source: USDA-NASS and IDALS, Iowa Ag News—Cattle on Feed

### Despite COVID-19, beef kept moving

USDA's National Agricultural Statistics Service published the *Livestock Slaughter 2020 Summary* in April. Data come from reports completed by the Food Safety and Inspection Service, and USDA, combined with data from state-administered non-federally inspected slaughter plants. Commercial beef production totaled 27.173 billion pounds in 2020, actually up 0.1% from 2019. Production averaged 533 million pounds per week – an amazing number if you think about it!

Even during April and May 2020, roughly 415 million pounds per week of a wide range of beef products moved through the pipeline, mostly through retail groceries. COVID-19 restricted movement through restaurant, food service and export markets each week. Still, beef had to keep moving because cold storage space is limited and demand was strong.

### Iowa leads meat production

Iowa accounted for 16.1% (8.960 billion pounds) of 2020 US commercial red meat production, up from 15.7% (8.624 billion pounds) in 2019. Not enough detail is available to say how much of Iowa's red meat production is beef, veal, pork, and lamb and mutton.

Recapping 2020 through the cattle industry lens, continued from page 6

These statistics also indicate where slaughter occurs, not necessarily where farm production happens. A large share of Iowa cattle are slaughtered in either Nebraska or east of the Mississippi River.

Still, Iowa has led the nation in commercial red meat production the last two years. Prior to that, Nebraska had the distinction for 23 consecutive years, 1996-2018. From 1977 to 1995 Iowa held the title, except in 1986, when Kansas had the top spot.

The *Meat Animals Production, Disposition, and Income Annual Summary* was released at the end of April. The USDA report provides the annual balance sheet and income estimates for cattle and hogs by state and nationally. US production of cattle and calves totaled 45.458 billion pounds in 2020, up 1.9% from 2019. Total 2020 production of cattle and calves and hogs and pigs in Iowa totaled 15.126 billion pounds, down 8.9% from 2019. Production rose 0.8% for cattle and calves, but dipped 10.3% for hogs and pigs. Cattle and calves accounted for 14.1% of the combined production of cattle and calves and hogs and pigs in Iowa, up from 12.7% in 2019.

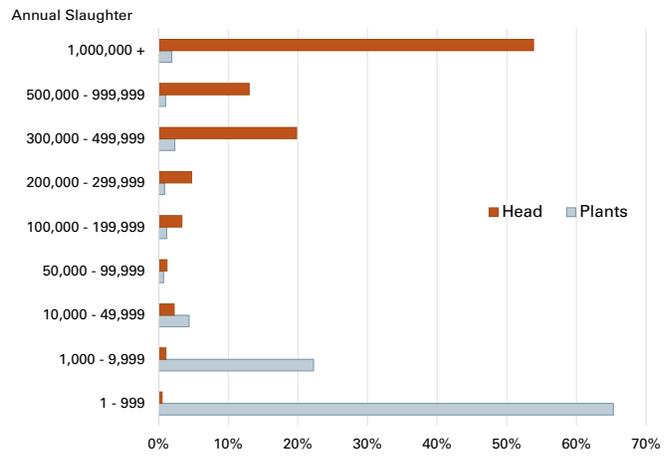
### Small packing plants grow

The US had 683 federally inspected (FI) cattle slaughter plants in 2020, compared with 670 in 2019. This is the largest number of FI cattle slaughter plants since 2004. Of these, 446 plants slaughtered between 1 and 999 head of cattle during 2020, down 34 plants from 2019. These plants didn't go away. Many smaller plants scaled up production.

In 2020, there were 152 FI plants that slaughtered between 1,000 and 9,999 head of cattle, compared to 107 plants in 2019. Using simple category averages, this equates to plants going from slaughtering roughly seven head per week to 44 head per week based on slaughtering 52 weeks per year. Plants slaughtering between 1 and 9,999 still only processed 1.6% of the total FI cattle kill (Figure 2).

The 13 largest plants, each slaughtering over one million head per year, slaughtered 53.9% of all FI cattle. While up 1.5 percentage points from 2019, these large plants had the smallest share of slaughter since 2005.

**Figure 2. Federally inspected cattle plants and head slaughtered, % of total by size group**



Data Source: USDA-NASS, Livestock Slaughter 2020 Summary

The number of FI cattle plants and the number of head slaughtered is not reported for Iowa to avoid disclosing data for individual operations. Iowa has 23 FI packing plants slaughtering cattle, calves, hogs, sheep and lambs, goats, or bison. Iowa has 93 other or non-federally inspected livestock slaughter plants. These could be plants which sell and transport only intrastate where state inspectors assure compliance with individual state standards. Or they could be plants that do not sell meat but operate on a custom basis only.

Iowa has 3% of the FI slaughter plants nationally, and 5% of the other slaughter plants. Pennsylvania has the most FI livestock slaughter plants with 84 and Texas is second with 42. Nothing is known about size though. Texas and Montana are tied for the most other livestock slaughter plants with 164.

### Good volume, lower prices

Nationally, cash receipts from marketings of cattle and calves slipped 4.8%, from \$66.267 billion in 2019 to \$63.089 billion in 2020 (Figure 3). Lower prices, not less production, was the culprit. The 2020 figure is 22.2% smaller than 2014's record \$81.077 billion. This marks the lowest level of cattle industry cash receipts since 2011.

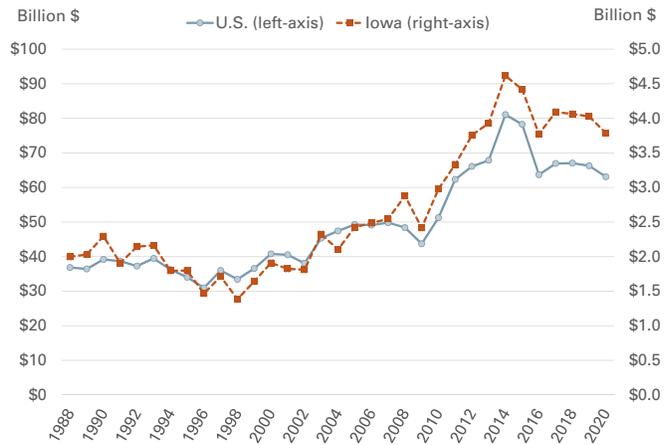
In Iowa, 2020 cattle and calf cash receipts slid 6.0% to \$3.786 billion. Value of Iowa cattle and calf production dipped 9.1%. Value of production removes the value of sales between producers

Recapping 2020 through the cattle industry lens, continued from page 7

(predominantly calves and feeder cattle) leaving just net value added by cattle producers. Iowa is a net importer of feeder cattle. In 2020, Iowa shipped in 110,000 fewer cattle, or 7.0% less than in 2019. Iowa cattle marketings fell 55,000 head or 2.2%, though calf marketings were unchanged.

Iowa dropped a spot and now ranks fifth for cattle and calf cash receipts (\$3.786 billion) and remained the number five state for value of production (\$2.347 billion). Nebraska (\$9.645 billion), Texas (\$8.510 billion), Kansas (\$8.320 billion) and Colorado (\$3.820 billion) took the top four spots for total cash receipts. Texas remained the number one state for value of cattle and calf production (\$7.245 billion) due to its larger cow-calf sector. Feedlots make up a larger portion of Nebraska's cattle industry. The value of feeder cattle that feedlots buy is deducted from total cash receipts to compute the value of actual production in Nebraska. The same can be said for Oklahoma over Iowa with respect to value of production.

Figure 3. Cattle and calf cash receipts



Data Source: USDA-NASS, Meat Animals Production, Disposition, and Income Annual Summary.

Updates, continued from page 1

**Internet Updates**

The following [Information File and Decision Tools](#) have been updated on [www.extension.iastate.edu/agdm](http://www.extension.iastate.edu/agdm):

- Determining the Custom Operator's Share of the Crop – A3-13 (Decision Tool)
- Cash Rental Rate Estimation – C2-20 (Decision Tool)
- Flexible Lease Agreement Worksheet – C2-21 (Decision Tool)
- Evaluating Your Estate Plan: Estate Planning Questionnaire – C4-57 (18 pages)
- Net Worth Statement (short form) – C3-19 (Decision Tool)

**Current Profitability**

The following [profitability tools](#) have been updated on [www.extension.iastate.edu/agdm/info/outlook.html](http://www.extension.iastate.edu/agdm/info/outlook.html):

- Corn Profitability – A1-85
- Soybean Profitability – A1-86
- Iowa Cash Corn and Soybean Prices – A2-11
- Season Average Price Calculator – A2-15
- Ethanol Profitability – D1-10
- Biodiesel Profitability – D1-15

This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to [www.extension.iastate.edu/diversity/ext](http://www.extension.iastate.edu/diversity/ext).

**Permission to copy**

Permission is given to reprint ISU Extension and Outreach materials contained in this publication via copy machine or other copy technology, so long as the source (Ag Decision Maker Iowa State University Extension and Outreach) is clearly identifiable and the appropriate author is properly credited.