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Rising cattle supplies face restricted packing capacity

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

Packing plant temporary closures and slowdowns due to the COVID-19 pandemic have created unprecedented product flow disruptions and price gyrations in the meat protein supply chain. Year-over-year declines in cattle slaughter progressively worsened through April. Weekly cattle slaughter dropped by 17% for the

week ending April 11 to a decline of 35% for the week ending May 2 (Figure 1).

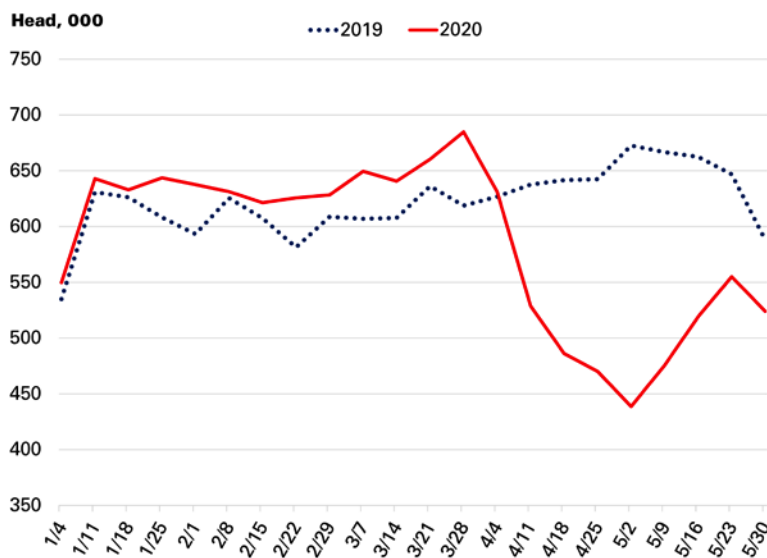
Week-over-week slaughter increases in May fueled guarded optimism that the worst of packing plant disruptions are over. Still, almost two months and counting with reduced slaughter

means a backlog of slaughter cattle is growing rapidly.

Packers place utmost concern on worker health, safety and availability. They have engineered

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Figure 1. Weekly Federally Inspected Cattle Slaughter



Data Source: USDA Market News, Estimated Daily Livestock Slaughter under Federal Inspection (SJ_LS710) and Actual Slaughter Under Federal Inspection (SJ_LS711) reports

Handbook updates

For those subscribing to the handbook, the following updates are included.

Iowa Farm Costs and Returns – C1-10 (9 pages)

Historical County Cropland Rental Rates – C2-11 (10 pages)

Please add these files to your handbook and remove the out-of-date material.

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controls such as workstation alignments and modifications, plus worker physical distancing measures where possible. How much these adjustments will reduce packing plant capacity is a huge unknown. Arbitrary 10% to 15% figures have been suggested, but they're just speculation. Only time will tell. Ingenuity will be a huge factor.

Capacity rebound is crucial

Peak fed cattle slaughter typically occurs in summer. Slaughter rates will need to rise dramatically to work through the large supplies of cattle coming, including both on-time marketings and the backlog of over market ready cattle that has developed.

Consumers need to know that there is no shortage of cattle available to produce beef. Rather COVID-19 presented a monumental challenge in converting cattle into beef. Temporary closures and slowdowns of meat packing plants, at a time when plants were running near capacity, caused a bottleneck in the cattle-beef supply chain and impacted beef packing plants' ability to receive cattle and transform them into a wide array of beef and beef products.

Economics at work

Less beef temporarily being available means less meat available for retailers to buy, mostly for grocery stores at this point. Limited restaurant traffic means meat consumption in the *food away from home* sector remains sluggish. As a result, grocery stores and consumers are bidding up the price of available beef. Wholesale beef prices have surged, reaching a level never seen before, at least in nominal terms.

The wholesale-to-retail market is reacting rationally to market economy forces. A market economy is one in which buyers and sellers freely make decisions in response to supply and demand. Those decisions drive prices and production. In a market economy, prices measure availability or scarcity. Prices are reacting to a temporary tight meat supply from packers.

Implications for retail prices

Retail grocers plan sales many weeks in advance, not only for advertising schedules, but to ensure logistics of product supply. Beef takes many weeks to get from live animal to grocery store. Wholesale prices lead retail prices by many weeks. Different cuts can have different lag lengths. Some evidence suggests retailers react more quickly to rising wholesale prices than to falling wholesale prices.

Several factors contribute to the lag in retail price response. The time required to process, package, transport, and shelve is one. Differences that exist in the assimilation of market information among both consumers and retail managers may also influence price response. The mix of procurement pricing strategies, i.e., negotiated vs. formula vs. forward contracted, may affect the price response between wholesale and retail.

Retailers' reluctance to change prices significantly in the short run is also a factor. Some retailers aren't as compelled to match the prices of competing stores on beef as they are on other items. Weekly features of high-penetration, high-frequency staples such as meat and produce increases customer traffic and can give retailers an edge. Changing retail prices is costly in terms of time, materials, as well as customer goodwill. Altogether this suggests retail prices can be somewhat rigid relative to changes in wholesale prices.

While some major retail supermarket outlets have suspended or reduced retail ads because of temporarily lower beef supplies, sales are still finding their way to retail circulars. According to the United States Department of Agriculture's National Retail Report – Beef, for the period of Friday, May 29 thru Thursday, June 4 cuts from the chuck and round saw more ad space, while cuts from the rib, loin, brisket, and ground beef items all saw less.

The *collective feature rate* of major retail supermarkets, which is the amount of sampled stores advertising any reported beef item during the current week expressed as a percentage of the total sample, was 43.8% and was a 25.1 percentage point decline compared to the previous week and was down 36.3 percentage points from a year ago. The *special rate*, which is the percentage of sampled stores with a *no-price promotion*, e.g., buy 1, get 1 free etc., was 2.5% and was down 12.6 percentage points from the previous week and 16.2 percentage points lower than last year.

Outside factors to watch

Temporarily lower beef supplies should lead to higher beef prices but that presupposes a steady demand curve. Factors such as disposable income, unemployment levels and the overall economic environment will also play a role. The outlook for beef prices out front is precarious because the current dynamic greatly depends on processing capacity, purchasing patterns, and ultimately consumer

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Rising cattle supplies face restricted packing capacity, continued from page 2

demand. Prices should begin to stabilize as those uncertainties ease.

Big swings in wholesale prices

A tendency exists to aggregate all cuts, qualities, sales types, destinations and delivery periods together as “beef.” But price impacts can differ significantly depending on which types are being considered. Just like cattle, all beef isn’t created equal. Several extrinsic and intrinsic characteristics differentiate cattle and beef. Those factors complicate price forecasting.

Since mid-March, the chuck, round and brisket components of the comprehensive cutout have surged the most. For the week ending May 29, the chuck, round, and brisket were up 92%, 97% and 105%, respectively. In contrast, the rib, flank, short plate and loin were up 51%, 39%, 41% and 80%, respectively.

These changes make intuitive sense. Chuck and round prices are being driven higher by grocery demand for value cuts and ground beef. The rib and the loin are higher priced beef cuts and haven’t benefited as much from the shift in meat buying from restaurants to groceries.

USDA’s Ag Marketing Service summarizes wholesale beef prices into a carcass equivalent value, known as the cutout value. It’s a single value derived from individual meat cut prices and is a rather broad measure with many assumptions, which USDA periodically adjusts by using industry input.

Daily, morning and afternoon, and weekly National Boxed Beef Cutout And Boxed Beef Cuts values are reported by USDA. These values are for negotiated or cash sales, with delivery within 0-21 calendar days and within the domestic market. Values are limited to USDA Choice and Select grades. Branded product is not included. All product is fresh except frozen 50% lean trimmings. Aged product is not included.

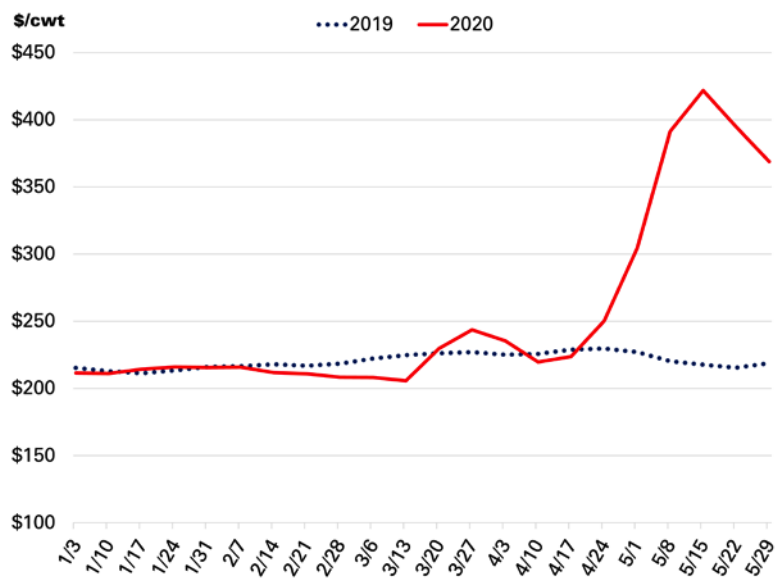
Weekly, on Monday for the prior week, USDA provides the National Comprehensive Boxed Beef Cutout report which incorporates all sales methods. For the week ending May 29,

49% of sales were formula; 34% were negotiated for delivery within 21 days; 15% were negotiated for delivery in 22 days or more; and 2% were forward contracted. This was similar to the purchasing volume reported in USDA’s National Weekly Fed Cattle Comprehensive report where 45.05% of steer and heifer sales were formula transactions, 23.61% were negotiated, 10.70% were forward contracted, and 20.63% were negotiated grid for the week ending May 25.

In terms of quality breakdowns, the weekly comprehensive report lists Prime (3% of the loads for week ending May 29), Branded (22%), Choice (30%), Select (10%), and Ungraded including cuts, grinds, and trim (35%) categories. The weekly comprehensive cutout value is the most representative of all wholesale beef transactions.

The comprehensive cutout value bottomed for the year for the week ending March 13, then rebounded later in the month, then slipped in early to mid-April, then surged into the week ending May 15 before tumbling the following two weeks. The overall comprehensive cutout value for the week ending May 29 was \$368.85 per cwt., up 69% from the same week a year ago (Figure 2). For reference, the weekly negotiated Choice cutout was \$374.04 per cwt., up 67% from the same week a year ago.

Figure 2. Weekly National Comprehensive Boxed Beef Cutout



Data Source: USDA Market News.

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How to streamline your CFAP application

By Alejandro Plastina, extension economist, 515-294-6160, plastina@iastate.edu

If you are a farmer or rancher who faced price declines and additional marketing costs due to COVID-19, you have until August 28, 2020 to file for the Coronavirus Food Assistance Program (CFAP) with your local USDA Farm Service Agency (FSA) office.

The CFAP application form AD-3114 is [available online](#) for producers who prefer to fill it out manually, www.farmers.gov/sites/default/files/documents/AD3114_200519V01%20%20FINAL.pdf. However, according to the Paperwork Reduction Act, filling out the AD-3114 form is estimated to take one hour per response. In order to streamline the CFAP application in times of social distancing and phased reopening of businesses, the USDA has published a CFAP Payment Calculator that serves multiple purposes:

- helps producers organize the information needed to apply for CFAP;
- informs producers of the initial payment and the potential for subsequent payments;
- automatically populates a printable version of the AD-3114 form; and
- saves in-person or on-the-phone consultations with FSA staff.

This article provides a step-by-step guide to using USDA's CFAP Payment Calculator. Reading the article in full before downloading the spreadsheet, and following steps 1-18 sequentially will save you time and frustration.

You will need a computer with internet access and spreadsheet software. In order to print the completed AD-3114 form, you will also need a printer connected to the computer.

Follow these steps to calculate your CFAP payment and print the AD-3114 form:

1. Download the [CFAP Calculator](#) and save it to your computer, www.farmers.gov/sites/default/files/documents/CFAP-Payment-Calculator_farmers.gov%20_Version-1.2_final.xls.
2. Open the Calculator from the saved location. A message highlighted in yellow (Figure 1) might appear at the top of the spreadsheet asking your permission to "Enable Editing." Press the gray button with the legend "Enable Editing" to operate the spreadsheet.
3. If a message highlighted in red appears (Figure 2) at the top of your screen indicating "Blocked Content," then proceed as described in Step 4. If no such message appears, go to Step 5.
4. Close the file in the spreadsheet software. To allow your computer to run the program embedded in the Calculator (called "Macros"), use the Windows File Explorer (PC computer) or Finder (Mac computer) to browse to the saved file in your computer, click the second mouse button on the file name to access its Properties, locate the "Unblock" option at the bottom, check the Unblock box, and press OK. Then open the file in the spreadsheet software and click on the "Enable Editing" button. The Calculator should be operational.
5. The spreadsheet is organized into five tabs, but you will enter data only on the "Data Entry" tab, and only in the cells highlighted in light-yellow. You only need to fill out the sections relevant to your operation: Dairy, Non-Specialty Crops, Livestock, Aquaculture/Nursery, and Specialty Crops.
6. **Fill out the top section** with State, County, Name, and Address.

Figure 1. Example of enable editing message

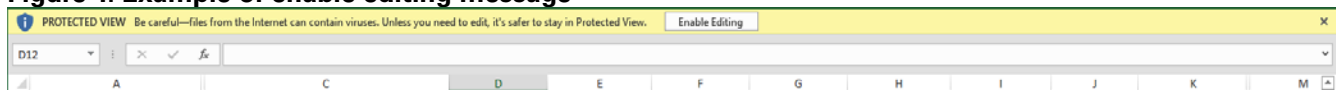
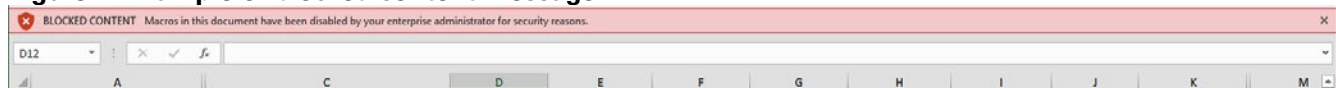


Figure 2. Example of blocked content message



How to streamline your CFAP application, continued from page 4

7. **If you produced Dairy in 2020**, fill out Part 1: enter the total pounds of production, including any dumped milk, in January, February, and March 2020. If you do not produce dairy, leave Part 1 blank.
8. **If you produced corn, soybean, oat, or other Non-Specialty Crops (including Wool) in 2019**, fill out Part 2: in each row, select a crop from the drop-down menu (if you click on a light yellow box under “Crop”, a drop-down arrow will appear to the right); enter the 2019 total production across all your farms; and the 2019 total production not sold as of January 15, 2020. If your crop is not listed in the drop-down menu of Part 2, then see if it is listed in the drop-down menu of Part 5. If your crop is not listed in Parts 2 or 5, then it is not eligible for CFAP. If you did not produce Non-Specialty Crops in 2019, leave Part 2 blank.
9. **If you owned Livestock in 2020**, fill out Part 3: in each row, select a livestock category; enter the total sales between January 15, 2020, and April 15, 2020 for owned inventory as of January 15, 2020, including any sales of offspring from owned inventory; and the highest inventory between April 16, 2020, and May 14, 2020. If you did not own livestock in 2020, leave Part 3 blank.
10. **If you were an Aquaculture/Nursery farmer in 2020**, fill out Part 4: in each row, enter the name of the commodity that suffered value loss; the total value of sales from all farms between January 15, 2020 and April 15, 2020; and the total value of marketable inventory from all farms as of April 15, 2020. Note that reported losses in Part 4 are not included in the Calculated Initial Payment reported by this Calculator. USDA is continuing to review data associated with the impact of COVID-19 on value loss crops. Specific value loss crops that meet the eligibility criteria will be identified in the future. If you were not an aquaculture/nursery farmer in 2020, leave Part 4 blank.
11. **If you produced Specialty Crops in 2020**, fill out Part 5: in each row, select a crop from the drop-down menu; enter the total value of production sold between January 15, 2020, and April 15, 2020; the total volume of production shipped but not sold between January 15, 2020 and April 15, 2020; and the total acres with production not shipped or sold between January 15, 2020 and April 15, 2020. If your crop is not listed in the drop-down menu of Part 5, then see if it is listed in the drop-down menu of Part 2. If your crop is not listed in Parts 2 or 5, then it is not eligible for CFAP. If you did not produce Specialty Crops in 2020, leave Part 5 blank.
12. **If the CFAP application is for a corporation, a limited liability company, or a limited partnership** seeking an increase in the per-person payment limitation, fill out Part 6: enter the names of members/partners or stockholders who provide 400 hours or more of active personal labor or active personal management, or combination thereof, to the farming operation. If two or three members of the corporation, LLC, or LP are listed in Part 6, the payment limit will be increased from \$250,000 to \$500,000 or \$750,000, respectively. If the application is not for a corporation, LLC, or LP, leave Part 6 blank.
13. **Revise** for completeness and correct any mistakes. Check for typos, and make sure you are not leaving out any eligible commodity in the Data Entry tab.
14. **Check your Calculated Initial Payment** by clicking on the orange button “GO TO ESTIMATED PAYMENT REPORT” in the top left part of the Data Entry tab. This action will take you to the tab called “ECPR”, and the Calculated Initial Payment amount will appear in the box at the top of the tab. The Calculated Initial Payment equals 80% of the Estimated Gross Payment before limitations and other reductions. For aquaculture/nursery farmers, the Calculated Initial Payment does not include value losses reported in Part 4 (see Step 10).
15. **Your Initial Payment will be the lesser of the Calculated Initial Payment or \$200,000 per individual** (equivalent to 80% of the \$250,000 payment limit per individual). For corporations, limited liability companies, and limited partnerships, the limit is 80% of the payment limitation calculated in Step 12. You can print the calculations in the “ECPR” tab by clicking on the red button at the top of the tab called “PRINT ECPR.” Go back to the “Data Entry” tab by clicking on the blue button at the top called “GO TO DATA ENTRY”.

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- 16. **Save the file** for future reference: go to File menu in your spreadsheet software, and select the Save command.
- 17. **Print the AD-3114 form** by clicking on the yellow button “PRINT AD-3114” in the top left part of the “Data Entry” tab. Depending on the number of eligible commodities you produced, some of your commodities might not show up in the printed AD-3114 form. In that case, click on the light-orange button “PRINT AD-3114 Continuation.”
- 18. Revise the print out for accuracy, sign, and call your FSA county office to **schedule an appointment** and arrange how to submit your application electronically: by scanning, emailing, or faxing.

Any part of your Calculated Initial Payment (see Step 14) below 80% of your payment limit and above **Your Initial Payment** (see Step 15) might trigger subsequent payments at a later date.

Note that the present article was developed for USDA’s CFAP Payment Calculator Version 1.2, last accessed on June 1, 2020. The USDA might update the Calculator without prior notice and render some or all parts of this information outdated.

[For more information on CFAP](http://www.farmers.gov/cfap), visit www.farmers.gov/cfap, or call 877-508-8364 to speak directly with a USDA employee in the CFAP Call Center.



Searching for a price boost

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

The crop markets basically treaded water throughout the month of May. After four months of steadily eroding prices, traders seemed to find floors for the corn and soybean markets. While the coronavirus stands as the greatest reason for the price retreat, several other factors joined it to bring prices where they are today. Trade and tariff issues continue to dog the agricultural markets. Global oil production has exceeded global needs for most of 2020. And we had a great start to the 2020 growing season, leading to concerns about another set of large crops coming in this fall. The challenges are many and they continue, but now is also the time to look for opportunities and explore where rebounds can occur.

In the World Agricultural Supply and Demand Estimates (WASDE) report released in May, USDA outlined their projections for the 2020 marketing year. Those projections show 2020 as another rough year for farm finances, with average prices for corn and soybean retreating from the levels held over the past couple of years. But the projections also show a rebuild in crop usage from the damage inflicted

over the several months from COVID-19 and various other issues.

For corn, the biggest challenge is just the sheer size of the potential crop. In the March planting intentions survey, farmers nationwide indicated that they planned on planting 97 million acres to corn. That would be the most area planted to corn since 2012. With the rapid pace of planting this spring, the acreage target seems achievable and the likelihood of trend-line yields has increased. With USDA’s trend yield at 178.5 bushels per acre, corn production could reach 16 billion bushels, besting the 2016 record by nearly 850 million bushels.

Combine that production with the two billion bushels expected to be in storage and you’ve got over 18 billion bushels of corn to use during the 2020/21 marketing year. But corn usage is also projected to reach record levels for 2020. The problem is it only beats the previous record by 1 million bushels. The grey box in Table 1 highlights corn usage. The impacts of the trade disputes and

Searching for a price boost, continued from page 6

Table 1. Corn supply and use (Source: USDA-WAOB)

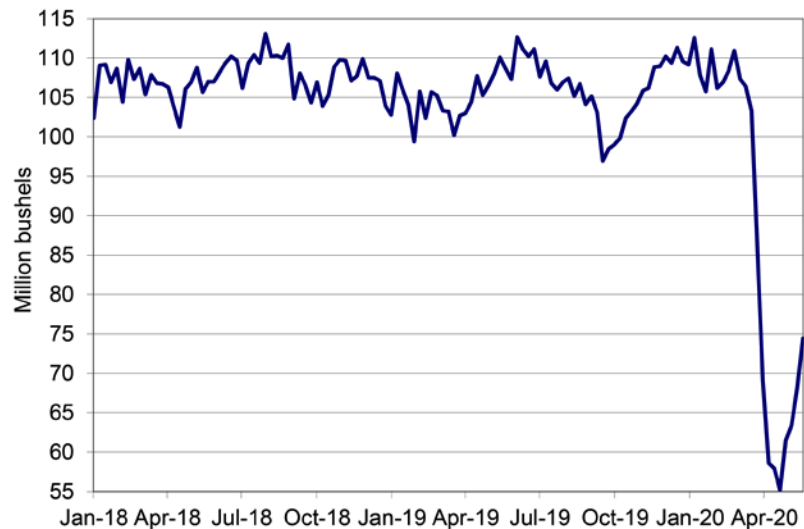
		2016	2017	2018	2019	2020
Area Planted	(million acres)	94.0	90.2	88.9	89.7	97.0
Yield	(bushels/acre)	174.6	176.6	176.4	167.8	178.5
Production	(million bushels)	15,148	14,609	14,340	13,663	15,995
Beginning Stocks	(million bushels)	1,737	2,293	2,140	2,221	2,098
Imports	(million bushels)	57	36	28	45	25
Total Supply	(million bushels)	16,942	16,939	16,509	15,928	18,118
Feed and Residual	(million bushels)	5,470	5,304	5,432	5,700	6,050
Ethanol	(million bushels)	5,432	5,605	5,376	4,950	5,200
Food, Seed and Other	(million bushels)	1,453	1,451	1,425	1,405	1,400
Exports	(million bushels)	2,294	2,438	2,065	1,775	2,150
Total Use	(million bushels)	14,649	14,799	14,288	13,830	14,800
Ending Stocks	(million bushels)	2,293	2,140	2,221	2,098	3,318
Season-Average Price	(\$/bushel)	3.36	3.36	3.61	3.60	3.20

the coronavirus have knocked out nearly a billion bushels of corn usage. While corn feed usage has ramped up by roughly 400 million bushels (mainly to fill in for the disappearance of distillers grains from the marketplace earlier this year), corn usage for ethanol and exports has shrunk by nearly 1.4 billion bushels. Both of these sectors of corn demand share some common obstacles. The strong value of the US dollar and the ever-changing array of tariff settings worldwide has hurt export potential for corn and ethanol. And the coronavirus pandemic and the myriad of government restrictions based on business and travel have altered typical consumer patterns and trade flows.

However, USDA projects both sectors will rebound for the 2020 crop. As Table 1 shows, corn usage for ethanol is projected to increase by 250 million bushels. Meanwhile, corn exports are expected to rise by 375 million bushels. But for the corn market to find some upward momentum in prices, we will need to see even larger gains in both sectors. Both sectors hit their records with the 2017 crop, with ethanol consuming 5.6 billion bushels of corn and the international markets grabbing 2.4 billion bushels. The lower projected corn prices do support additional corn usage in both areas. But the area I'll focus on the most will be ethanol, as it has the most room to expand.

Between the global oil supply glut and the severe drop in travel due to the coronavirus, the ethanol industry hit a brick wall this spring. As Figure 1 displays, corn usage for ethanol had been fairly steady for the past couple of years, going through 105-110 million bushels per week. That pace continued into 2020, until the “stay at home” and “shelter in place” orders rapidly spread across the US. With gasoline usage in the US dropping to levels not seen since the late 1960s, ethanol production nose-dived. Within a three week stretch, ethanol plants reduced production by roughly 50%. Several plants shut down, while the remaining plants reduced output significantly.

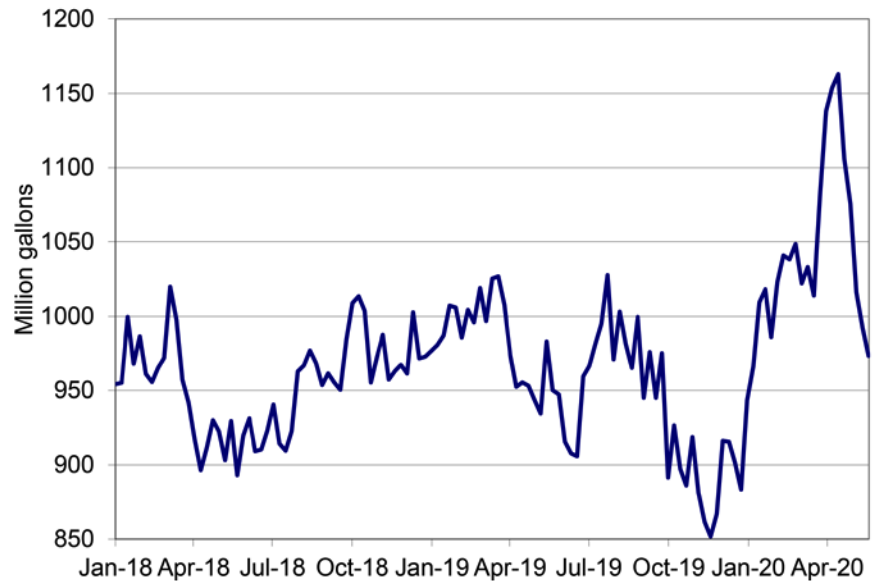
Figure 1. Corn converted to ethanol (based on ethanol production data from EIA)



Searching for a price boost, continued from page 7

But even with the drastic cuts in production, ethanol stocks continued to rise (Figure 2), the falloff in fuel usage was just that great. Mid-April was the worst period for the industry as stocks ballooned to 1.15 billion gallons, even as production dropped. However, the production restrictions did finally catch up to the falling demand. By the end of April, ethanol stocks were declining. As the calendar turned to May and many states began to ease coronavirus restrictions, fuel usage and ethanol usage rebounded somewhat. That has driven ethanol back to more normal levels and allowed some of the ethanol plants to increase production. The question for

Figure 2. Ethanol stocks (Source: EIA)



the 2020 marketing year is “Can ethanol production return to that consistent 105-110 million bushel range of corn usage each week?” If so, then we could see USDA boost the ethanol number for 2020.

Shifting gears to soybean, the supply challenges are not as great, but they may be building. In March, farmers indicated they would plant 83.5 million acres to soybean (Table 2). With the quick planting this spring, there’s a fair amount of chatter that the number could be higher in the June planting report.

But even with 83.5 million acres, we are still looking at the potential for a 4 billion bushel soybean crop, the fourth one out of the last five years. The planting problems last year helped hold production in check, as exports fell, limiting ending stocks. So total soybean supplies are high, but are not projected at record levels.

On the usage side, domestic crush has been slowly and steadily building over the past few years. USDA continues that trend. So the wildcard, as has been the case for the last decade, is export demand. The

Table 2. Soybean supply and use (Source: USDA-WAOB)

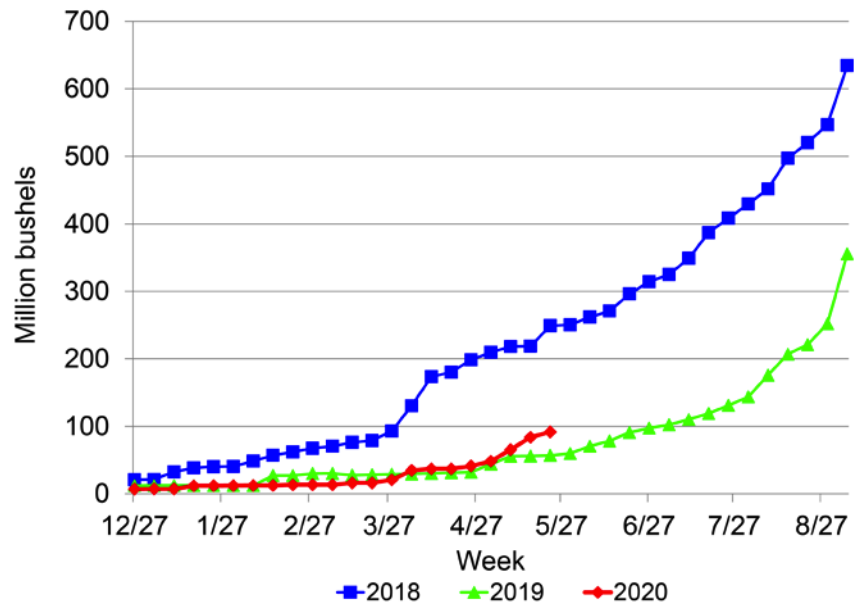
		2016	2017	2018	2019	2020
Area Planted	(million acres)	83.4	90.2	89.2	76.1	83.5
Yield	(bushels/acre)	52.0	49.3	50.6	47.4	49.8
Production	(million bushels)	4,296	4,412	4,428	3,557	4,125
Beg. Stocks	(million bushels)	197	302	438	909	580
Imports	(million bushels)	22	22	14	15	15
Total Supply	(million bushels)	4,515	4,735	4,880	4,481	4,720
Crush	(million bushels)	1,901	2,055	2,092	2,125	2,130
Seed and Residual	(million bushels)	146	113	131	101	135
Exports	(million bushels)	2,166	2,129	1,748	1,675	2,050
Total Use	(million bushels)	4,214	4,297	3,971	3,901	4,315
Ending Stocks	(million bushels)	302	438	909	580	405
Season-Average Price	(\$/bushel)	9.47	9.33	8.48	8.50	8.20

Searching for a price boost, continued from page 8

trade dispute with China led to a significant fall in exports for the 2018 crop. The hangover from that dispute and the coronavirus have widened that export gap a bit further for the 2019 crop. So the key to any chance at price recovery for the 2020 crop will be in an export rebound. USDA does project one, with exports expanding by 375 million bushels. But that still puts us around 100 million bushels below the export levels in 2016 and 2017, before the trade tensions.

And here, just like with ethanol and for corn, we are seeing signs of a rebound. But the question is also the same, will the rebound take us back to where we were before. Soybean export sales for the 2019 crop are still well below the levels we had for 2018, but the gap has been shrinking. A few weeks ago, the export gap was 250 million bushels. Now, it's down to 150 million bushels. And within the last couple of weeks, we are beginning to see increased action in advance sales for the 2020 crop. As Figure 3 conveys, while 2020 sales are still well below 2018 levels, they have now exceeded 2019 levels. Of course, China is the big market to watch here. While there has been a lot of market concentration on "did China buy soybean today or not", the data show China has been slowly increasing their soybean purchases for both the 2019 and 2020 crops. Currently, 2019 sales to China are running nearly 10% above the pace we had for the 2018 crop.

Figure 3. Soybean export sales for 2020/21 (Source: USDA-FAS)



And for the 2020 crop, China represents just over half of the advance sales seen in Figure 3. If China is to even come close to meeting the targets in the Phase 1 trade deal signed early this year, then we will see soybean sales jump in the latter half of the year.

The potential for better prices for both corn and soybean is there to be found. But it depends on a couple of key sectors returning to pre-COVID-19 and pre-trade war levels. Both sectors are now moving in the right direction, but both also have a long way to go to get back to where they once were. The weekly updates on ethanol production and export sales have become even more critical to watch this summer, as they'll outline the prospects for better prices or not.



Mixed liquidity results for Iowa farms in 2019

By Alejandro Plastina, extension economist, 515-294-6160, plastina@iastate.edu

The accrued net farm income across commercial Iowa farms averaged \$77,946 in 2019, according to the analysis of anonymized data from mid- to large-size farms collected by the Iowa Farm Business Association¹. Such income level was 35% higher in real terms² than in 2018, and equivalent to three times the income observed in 2015. However, this income was equivalent to only one-third of the 2012 income (Figure 1).

Despite the observed improvement in average income, not all Iowa farms were profitable in 2019. Figure 1 shows the farms grouped into three groups -- top, middle and bottom third. The bottom third of farms (ranked according to their annual return to management) has consistently averaged negative accrued net farm income levels since 2015. In contrast, the top third group has consistently averaged incomes more than twice the state average. For a more detailed analysis of the three groups, see [Ag Decision Maker File C1-10](http://www.extension.iastate.edu/agdm/wholefarm/html/c1-10.html), www.extension.iastate.edu/agdm/wholefarm/html/c1-10.html.

A higher average income in 2019 did not translate into an overall improvement in financial liquidity for Iowa farms. Not only was the share of farms with vulnerable liquidity larger in December 2019 compared to a year earlier, but working capital needs were also higher. On the contrary, the shrinking share of farms with no liquidity problems saw their working capital increase in 2019.

Overall liquidity

Liquidity is analyzed using four indicators: the current ratio, the annual change in working

Figure 1. Average accrual net farm income in Iowa (in real 2019 dollars)

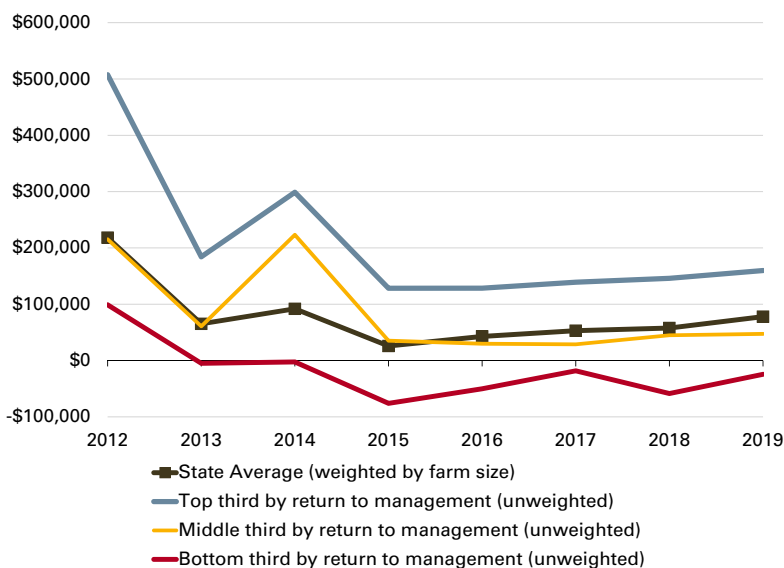
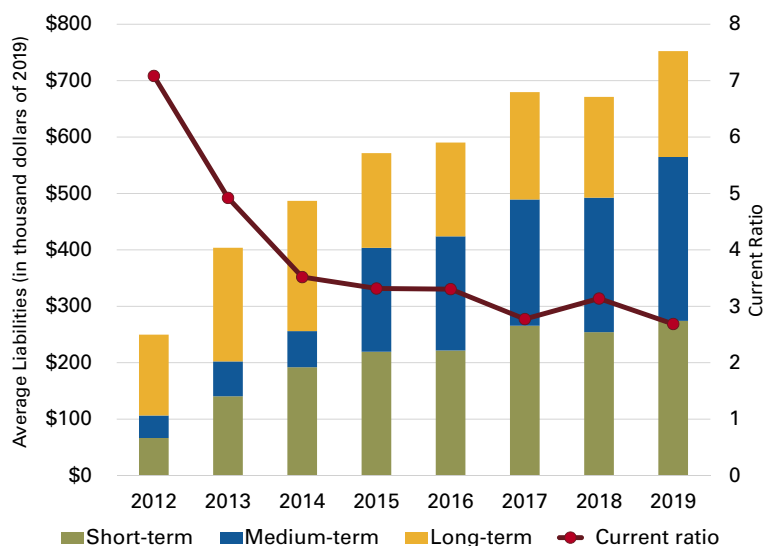


Figure 2. Current ratio and average liabilities (by maturity) of Iowa farms



capital per acre, the share of farms with less than \$250 in working capital per acre, and the share of farms with vulnerable liquidity ratings.

¹ The IFBA is an independent association, managed and controlled by its farmer-members.

² Deflated with the Consumer Price Index for All Urban Consumers (CPI-U 1982-84=100) published by the US Bureau of Labor Statistics, re-expressed as 2019=100.

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The average current ratio³ for Iowa farms peaked in 2012 at 7.08. It has since declined to 2.77 in 2017, increased to 3.14 in 2018, and dropped again to 2.69 in 2019. Having 2.69 dollars in cash, inventories, and other liquid assets per each dollar of liabilities that will come due over the next twelve months might be considered a strong liquidity position for the average farm. However, it is important to note that this level is the lowest observed since December 2001. As illustrated in Figure 2, current or short-term liabilities increased by 8% or \$20,000 in 2019, to \$274,088. That increase was less pronounced than the 12% or \$81,256 increase in total liabilities between December 2018 and December 2019.

A major drawback of comparing financial indicators across all farms in the sample through time is the variability of the sample size and its composition across years. In order to partially address this issue, Figure 3 illustrates changes in working capital per acre between the first of the year and December 31st for the same set of farms at those two points in time. In 2019, the average change in working capital per acre among the 401 farms with detailed balance sheets at both points in time was -\$18. This loss was similar to the one observed in 2017. However, it must be noted that the sample size became smaller through time, from 565 in 2015 to 401 in 2019. The next section shows similar results when the number and composition of farms in the sample is kept unchanged through the years.

Figure 4 shows the annual share of farms with working capital per acre in four different groups: below zero, between zero and \$250, between \$250 and \$500, and beyond \$500, for each December since 2014. This is an attempt to understand the actual distribution of liquidity across farms, rather than measuring it for the state-average farm. The share of farms with negative working capital increased almost uninterruptedly from 10% in December 2014 to 17% in December 2019, while the

Figure 3. Average change in working capital per acre between January 1 and December 31

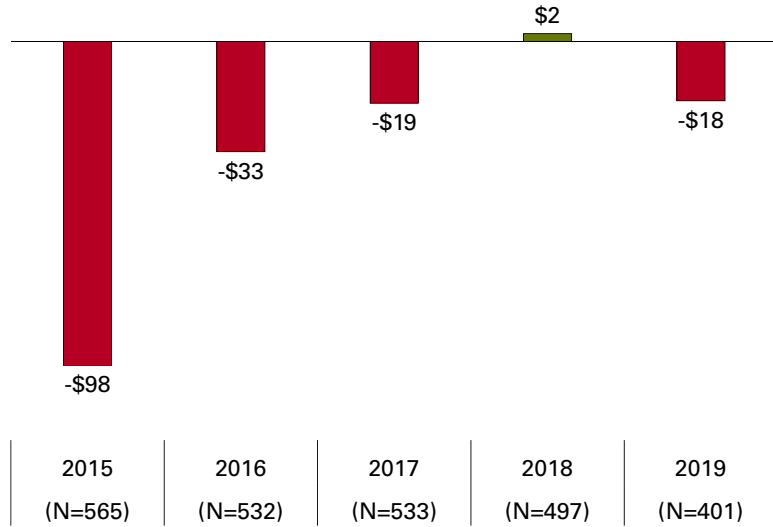
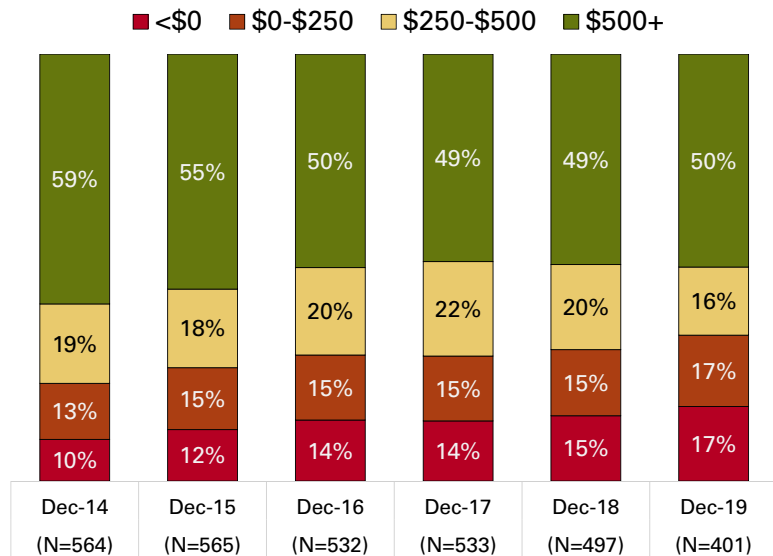


Figure 4. Distribution of farms by working capital per acre



share of farms with working capital below \$250 per acre increased from 23% to 34% over the same period.

Based on their current ratio in December of each year, the sample farms were assigned a liquidity rating of vulnerable, normal, or strong. According to the *Farm Financial Scorecard*⁴, a current ratio above 2 indicates a *strong* liquidity position; a ratio

³ The current ratio is calculated as current assets divided by current liabilities.

⁴ Becker, K., Kauppila D., Rogers G., Parsons R., Nordquist D., and R. Craven. 2014. "Farm Finance Scorecard." Center for Farm Financial Management, University of Minnesota. Available online, www.cffm.umn.edu/wp-content/uploads/2019/02/FarmFinance-Scorecard.pdf. Last accessed June 8, 2020.

Mixed liquidity results for Iowa farms in 2019, continued from page 11

below 1.3 indicates a *vulnerable* liquidity position, and a ratio between 1.3 and 2 is *normal* and indicates that liquidity should be kept under close watch⁵. To avoid outliers, only farms with current ratios between 0 and 50 were selected. Given the large number of farms in the sample with no short-term debt, a fourth category is shown in Figure 5 along with the three liquidity categories. In December 2014, there were 4.2 farms with strong liquidity or no current liabilities per each farm with vulnerable liquidity (70.8% vs. 16.8% of the sample, respectively). Five years later, in December that ratio declined to 2.1, given the increase in the share of farms with vulnerable liquidity to 28.8% and the reduction in the share of farms with strong liquidity or no current liabilities to 61.6%.

Figure 6 shows the evolution of working capital per acre for each of the four groups of farms represented in Figure 5. In December 2019, the average working capital per acre was lower in nominal terms (not adjusting for inflation) than five years earlier. Farms with vulnerable liquidity experienced the largest drop in working capital per acre between December 2018 and December 2019, averaging -\$72. The declining number of farms with no current liabilities and farms with normal liquidity experienced improvements in average working capital per acre over the same period.

Liquidity analysis for selected farms

The declining number of farms in our sample through the years and the changing composition of the annual samples might drive some of the results presented in the previous section. In what follows, the analysis is limited to a subset of 348 farms with detailed balance sheet records across the most recent three years; and we interpret the data from January 1, 2017, as data from December 31, 2016.

⁵ While dairy farms or other farms that have continuous sales throughout the year can safely operate with lower current ratios, operations that concentrate sales during several periods each year (such as cash grain farms) need to strive for higher current ratios, especially near the beginning of the crop year.

Figure 5. Distribution of farms by liquidity rating

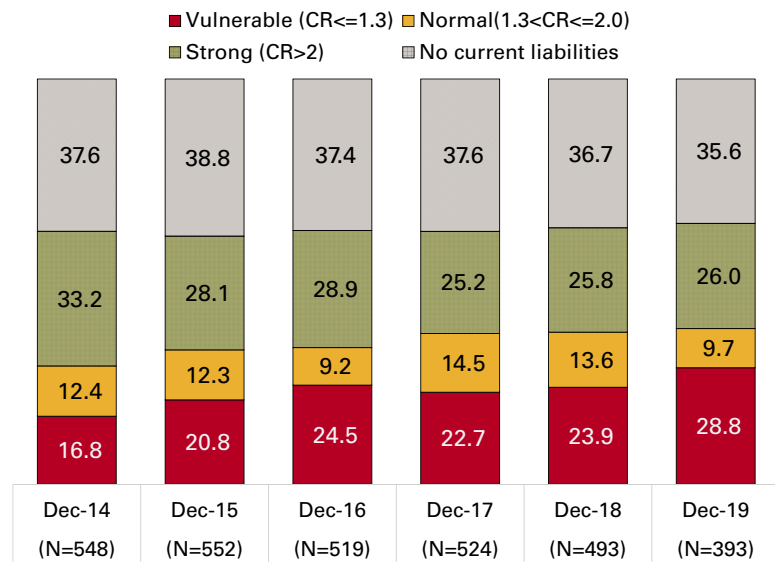


Figure 6. Average working capital per acre by liquidity rating

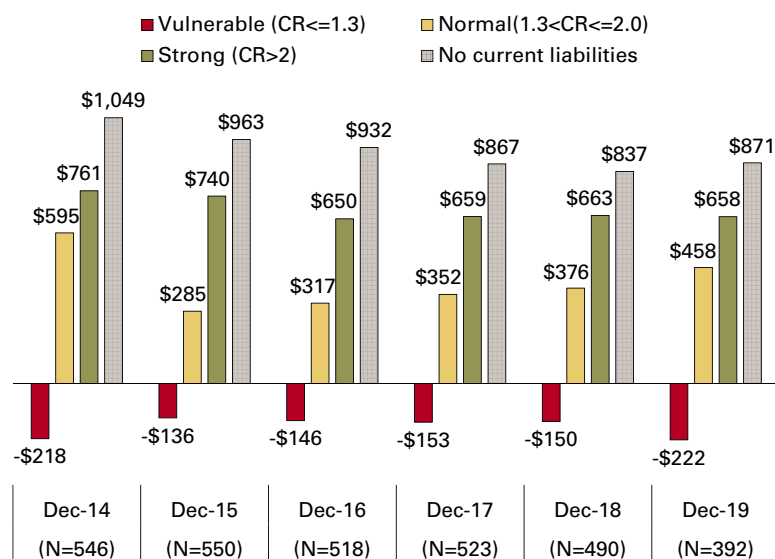


Figure 7 highlights the growth in the share of farms with vulnerable liquidity from 23.9% in 2016 to 27.9% in 2019, and the decline in the share of farms with strong liquidity from 28.4% to 24.7% over the same period. Note that while the percentages of farms in each category differ across Figures 5 and 7, the qualitative results derived from them are similar.

Between December 2016 and December 2019, working capital per acre among the growing group of farms with vulnerable liquidity declined, on average, by \$15.50 per year. The average working capital per

Mixed liquidity results for Iowa farms in 2019, continued from page 12

acre for the other three groups improved over the same period (Figure 8). Taken together, Figures 7 and 8 are indicative of a growing proportion of farms with increasing needs for short-term financing.

On average, the 348 selected farms lost \$19.50 in working capital per acre in 2017, gained \$20.20 in 2018, and lost \$30.70 in 2019.

Conclusions

This article explores the evolution of financial liquidity among mid- to large-size Iowa farms in 2019 against a backdrop of growing accrued net farm income. Several indicators point to a larger share of farms with increasing needs for short-term financing with respect to 2018, but also to a declining share of farms with strengthened liquidity. Multi-year trends suggest that overall farm liquidity continues to undergo a slow but persistent erosion process.

The erosion in farm liquidity is concerning, and is a major contributor to stress among the farming community. It is important to be aware of the array of confidential and 24/7 free-of-charge resources related to legal issues, finance, stress, crisis, and disaster that are available through Iowa Concern (1-800-447-1985, or www.extension.iastate.edu/iowaconcern) and COVID Recovery Iowa (1-844-775-WARM, or <https://covidrecoveryiowa.org>).

The number one anchor of farm financials through this long-term erosion of liquidity has been the equity held in farmland and machinery that serve as the basis for second mortgages, restructured loans, sale-leaseback agreements, and asset liquidations. Increased flexibility in farm lending regulations and payments from government programs compensating losses due trade tensions and the coronavirus pandemic have also been key policy tools to maintain the viability of a growing share of Iowa farms. One tool to help farmers better manage liquidity is the use of a realistic cash-flow budget. Several publications by Iowa State University Extension and Outreach

Figure 7. Distribution of selected farms by liquidity rating

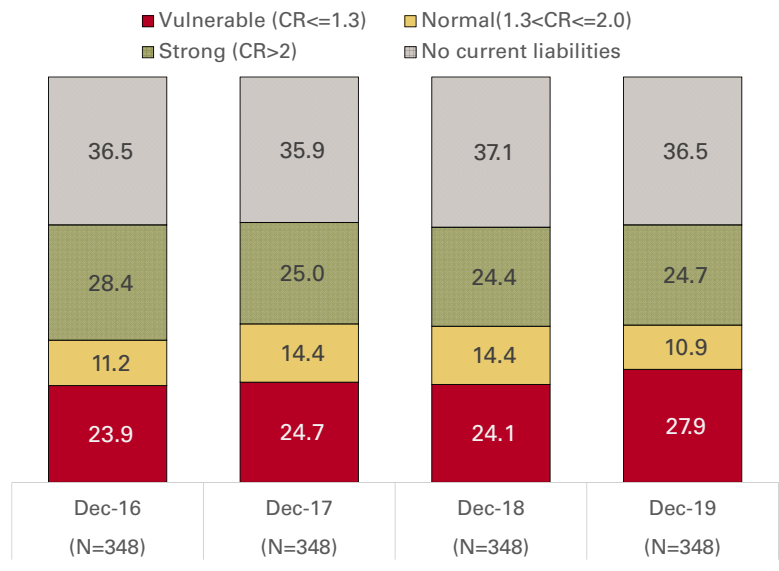
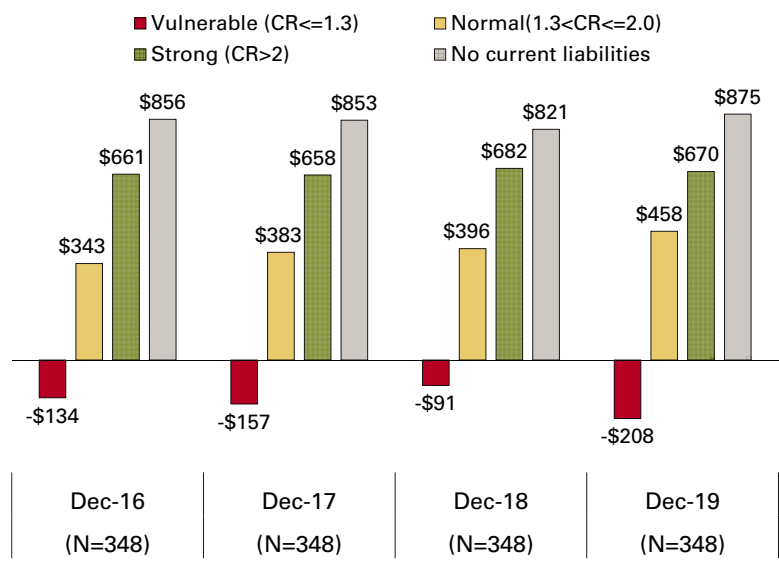


Figure 8. Average working capital per acre by liquidity rating



discuss how to develop and implement effective cash-flow budgets: AgDM Files [Twelve Steps to Cash Flow Budgeting, C3-15](#), www.extension.iastate.edu/agdm/wholefarm/html/c3-15.html, [Understanding Cash Flow Analysis, C3-14](#), www.extension.iastate.edu/agdm/wholefarm/html/c3-14.html, [Cash Flow and Profitability are Not the Same, C5-213](#), www.extension.iastate.edu/agdm/wholefarm/html/c5-213.html, and [Farm Financial Management: 16 Ways to Stretch Cash Flow, C3-58](#), www.extension.iastate.edu/agdm/wholefarm/html/c3-58.html.

COVID-19 Resources

For up-to-date resources regarding COVID-19, the CARES Act, Coronavirus Food Assistance Program (CFAP), and more, visit the [AgDM Blog](https://blogs.extension.iastate.edu/agdm/covid19/), <https://blogs.extension.iastate.edu/agdm/covid19/>, or the [printable list of resources](https://blogs.extension.iastate.edu/agdm/files/2020/05/Link-list.pdf), <https://blogs.extension.iastate.edu/agdm/files/2020/05/Link-list.pdf>

[Iowa State University](https://web.iastate.edu/safety/updates/covid19) <https://web.iastate.edu/safety/updates/covid19>

[ISU Extension and Outreach](http://www.extension.iastate.edu/disasterrecovery/recovering-disasters) www.extension.iastate.edu/disasterrecovery/recovering-disasters

[ISU Center for Agricultural Law and Taxation](http://www.calt.iastate.edu/covid-19-resources) www.calt.iastate.edu/covid-19-resources

[ISU Extension and Outreach Human Sciences, Finding Answers Now](http://www.extension.iastate.edu/humansciences/disaster-recovery)

www.extension.iastate.edu/humansciences/disaster-recovery

[ISU Extension and Outreach Agriculture and Natural Resources Specialists](http://www.extension.iastate.edu/ag/anr-staff-directory)

www.extension.iastate.edu/ag/anr-staff-directory

Questions regarding on-farm decisions for crop and livestock farms are often unique to the needs of the individual operation. Your extension specialists remain available during this time.



We are here to help!

IOWA STATE UNIVERSITY
Extension and Outreach

Iowa Concern Hotline
800-447-1985

24/7 confidential phone support

Updates, continued from page 1

Internet Updates

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

Hail Damage Can Affect Crop Insurance Yields – A1-49 (2 pages)

Powers of Attorney and Other Forms of Substitute Decision Making – C4-54 (6 pages)

External Scanning – Industry Analysis – C6-44 (3 pages)

Current Profitability

[The following tools](#) have been updated on 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

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the Assistant Secretary for Civil Rights (ASCR) about the nature and date of an alleged civil rights violation. The completed AD-3027 form or letter must be submitted to USDA by: (1) Mail: U.S. Department of Agriculture Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW Washington, D.C. 20250-9410; or (2) Fax: 833-256-1665 or 202-690-7442; or (3) Email: program.intake@usda.gov. This institution is an equal opportunity provider.

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