

Agriculture By the Numbers

August 2020

NDSU Extension Agribusiness and Applied Economics

An Estimate of Lost Corn Revenue in N.D. From Covid-19

Common Farm/Ranch Estate/Transition Planning Mistakes and Misunderstandings

Cattle Numbers Amid COVID-19

A Canceled Football Season May Impact the Meat Industry

Crop Supply Chain Risks From COVID-19

An Estimate of Lost Corn Revenue in N.D. From Covid-19

By David Ripplinger, NDSU Extension Bioproducts/Bioenergy Economist

Covid-19 has dramatically impacted almost all parts of the U.S. economy. The losses to the corn industry have been significant in large part because of a collapse in ethanol use as passenger travel fell.

Following a model used by Iowa State University, we estimated revenue lost by North Dakota corn farmers due to Covid-19. Here expected prices are estimated by adding the historical basis to futures prices.

By calculating the differences between expected prices before and after Covid-19, we can estimate local price impacts. Combined with corn marketing information, we can estimate revenue lost. As we are now six months into the pandemic, we also can compare actual declines with estimates.

Our analysis uses CME corn futures and DTN North Dakota corn index values since 2015, 2019 crop production data from U.S. Department of Agriculture (which includes 2019 crop harvested in 2020) and corn marketing by month also from the USDA.

Jan. 22, 2020, is an often-used Day 0 for the pandemic. On that day, the North Dakota price of corn (blue dashed line in Chart 1) was expected stay above \$3 per bushel until August, then meander near \$2.90 for the rest of the year. Instead, prices began a precipitous drop to \$2.47 in April before a small rally through June and another price decline through July (red line).

Actual prices in April and May were lower than estimates made using April 1 futures prices, while June and July expected prices track April 1 and July 1 estimates closely.

Editor: Bryon Parman
Assistant Professor/Agricultural Finance Specialist

701-231-8248
bryon.parman@ndsu.edu

NDSU

EXTENSION

An Estimate of Lost Corn Revenue in N.D. From Covid-19 – continued from page 1

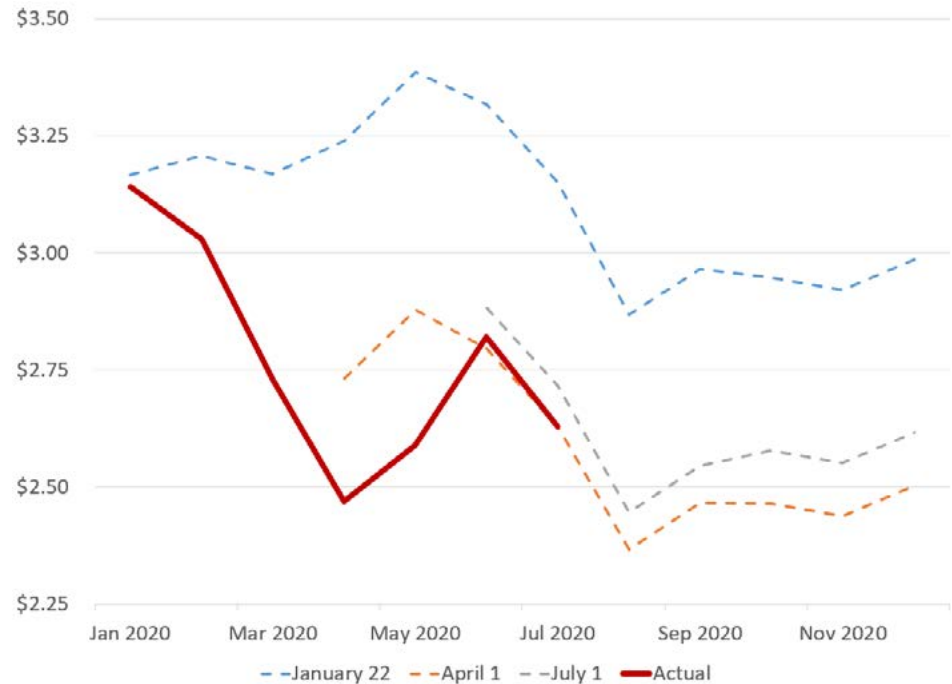
Before moving on to lost estimates, a few assumptions should be clear. First, the assumption is that North Dakota corn marketings follow national averages and North Dakota's 2019 corn crop was 455 million bushels despite a very challenging and widely delayed harvest. We also assume that the late harvest doesn't impact 2020 marketing levels. Finally, we assume the poor 2020 planting conditions don't dramatically impact corn marketing later this year.

The first seven months of the table present estimates based on actual North Dakota corn prices with those estimated using Jan. 22 futures prices. Again, April and May prices differed significantly from what was expected in late January.

Losses during the first seven months of the year range from \$13.8 million in March to \$22.8 million in May. For August through the end of 2020, expected prices based on July 1 futures prices are compared against those from Jan. 22. For the last five months of 2020, expected lost revenue ranges from \$12.3 million in August to \$20.8 million in November.

Using the model described, total losses to North Dakota corn farmers from COVID-19 are estimated to be \$171.5 million. The analysis does not consider the broader impacts to the North Dakota economy, including purchases, tax revenue and indirect economic activity. Regardless, the impact of Covid-19 on North Dakota's corn farmers is staggering.

Actual and Expected Prices Based on Futures Prices



North Dakota Corn Revenue Losses

	Month	Percent Crop Marketed	Bushels Impacted	Price Impact (\$/bushel)	Revenue Loss (Millions)
Estimates Using Actual Local Prices	January	12.6%	57		
	February	7.5%	34		
	March	6.9%	31	-\$0.44	-\$13.8
	April	5.9%	27	-\$0.77	-\$20.7
	May	6.3%	29	-\$0.80	-\$22.8
	June	7.8%	35	-\$0.50	-\$17.6
	July	6.7%	30	-\$0.52	-\$15.8
Estimates Using July 1 Data	August	6.4%	29	-\$0.42	-\$12.3
	September	7.0%	32	-\$0.42	-\$13.4
	October	11.5%	52	-\$0.37	-\$19.3
	November	12.4%	56	-\$0.37	-\$20.8
	December	9.0%	41	-\$0.37	-\$15.1
					-\$171.5

Common Farm/Ranch Estate/Transition Planning Mistakes and Misunderstandings

By Ron Haugen, NDSU Extension Farm Management Specialist

Whether we like it or not, every farm or ranch will have to deal with estate planning and transition to the next generation. Farmers and ranchers make some common mistakes or have common misunderstandings when estate planning.

Here is a list of common misunderstandings or problems:

- Not doing anything — Whenever the existing estate plan no longer aligns with the client's situation or the complexity of the estate, that is time for an update. The essential documents need to be updated in instances of a birth or death, a marriage, the divorce or separation of anyone named in the will/trust, major changes in the tax law, significant changes in income or wealth, or a change in objectives.
- Title ownership of property that doesn't comply with the overall estate planning goals and objectives — This includes the improper use of jointly held property, as well as IRAs and other documents that have beneficiary designations.
- Leaving everything outright to the surviving spouse when the family wealth is "large" — In these types of estates, that strategy fails to optimize the marital deduction. Also, even though "portability" of the unused exclusion at the time of the first spouse's death is available, states that tax wealth at death don't have the same rule.
- Thinking that the farm or ranch family has insufficient wealth to need to do any estate planning — This is a very common problem. Frequently, farm/ranch families underestimate their wealth and that is revealed once they are forced to start itemizing their assets. Don't forget about insurance proceeds, and remember that asset values could appreciate.
- Not accounting for the lack of liquidity of farm and ranch estates — The biggest asset in the estate for a farmer or rancher is land. Land is inherently illiquid. That means that liquidity planning is typically necessary in a farm/ranch estate pre-death and post-death.
- Making gifts to the children without clarification in the will
- Making loans to the children without clarification in the will
- Not owning life insurance in the proper manner — Insurance often is used as a liquidity planning tool. It is also an effective strategy for funding a buy-sell agreement. While the death benefit is income tax free, it is potentially subject to estate tax if the policy is owned by the insured at the time of death. Some form of irrevocable life insurance trust likely will need to be utilized. That way, the death benefit avoids estate tax.

Continued on page 4.

Common Farm/Ranch Estate/Transition Planning Mistakes and Misunderstandings — continued from page 3

- Not understanding the difference between “equal” and “fair” — In situations where a family has “on-farm” and “off-farm” heirs, the control of the farming/ranching operation should pass to the “on-farm” heirs and the “off-farms” heirs should get an income interest that is roughly balanced to the “on-farm” heirs’ interests. But they at least have to recognize that “equal” does not mean simply dividing assets up equally. Communication is the key.
- Improper use of life estate/remainder arrangements — While these are popular in agriculture, if not used properly, they can result in a difficult tax situation at death. Making sure these arrangements are structured properly is worth the effort.
- Not meeting regularly with advisers
- Not keeping beneficiary designations up to date
- Not having a well-drafted buy-sell agreement
- Not preserving eligibility for special use valuation — For larger estates where the goal is to continue the farming/ranching operation into a subsequent generation, not preserving eligibility for special use valuation is a big mistake. The qualification rules are technical, and a great deal of pre-death planning needs to occur for a certain time frame before death to get things optimally arranged.
- Not doing the basics in preserving records and key documents — Storing key documents in a secure place where the people who will need to find them know where they are is very helpful. This includes the will/trust, deeds, tax returns and passwords.
- Making the plan too complex
- Failure to review the plan and update if necessary
- Failure to check the beneficiary designations on nonprobate property
- Failure to use disclaimers post-death to correct errors in the estate plan
- Naming only one child as a financial fiduciary (after the spouse) when multiple children are in the family
- Not understanding the impact of a retained life estate coupled with a gift of the remainder interest

Addressing these issues can go a long way to developing a successful estate and transition plan. The future cannot be predicted, but not having a plan in place, or having one that is deficient, won’t do much to deal with the future or anticipated events.

Partial credit: Roger McEowen, J.D., Washburn University School of Law



Cattle Numbers Amid COVID-19

By Tim Petry, NDSU Extension Livestock Marketing Economist

On July 24, the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) released the semiannual July *Cattle* inventory report and the July *Cattle on Feed* report. The current and past reports are available online at:

Cattle

<https://usda.library.cornell.edu/concern/publications/h702q636h>

Cattle on Feed

<https://usda.library.cornell.edu/concern/publications/m326m174z>

The July cattle inventory report is important because it gives a mid-year indication of possible changes to look forward to in cattle numbers, beef production and potential market price impact. The July report is less detailed and only provides total U.S. cattle inventory numbers. The January *Cattle* report provides a more detailed state-by-state breakdown of numbers, which allows regional comparisons and weather-related changes to be documented.

Most beef cattle market observers expected the July *Cattle* report to show slightly lower beef cow inventory numbers than last year and that was the case. Also, both reports were expected to document more steers and heifers not held for replacement to be higher due to the backlog of cattle waiting to be slaughtered or placed in feedlots due to the COVID-19 pandemic.

NASS reported the July 1 U.S. beef cow herd at 32.05 million head, down almost 1% from last year's 32.3 million. The Jan. 1, 2020, beef cow inventory was 31.3 million head.

But that is not a signal of herd rebuilding because the July beef cow herd tends to be larger than the previous January. Bred heifers are not counted as beef cows until they calve, and many bred beef heifers calve between Jan. 1 and July 1. Then seasonal beef cow culling typically occurs in the fall.

We are seeing indications that the beef cow herd may stabilize at near current levels for the next couple of years. The number of heifers in excess of 500 pounds kept for beef cow replacement was identical to last year at 4.4 million head.

But, of course, weather-related forage and grazing conditions are always a wild card. At the end of July, the USDA reported U.S. pasture and range conditions at 34% in the poor to very poor category, compared



with 9% last year. And the USDA estimates that 29% of the U.S. cattle inventory is in areas experiencing some level of drought. If drought conditions linger or worsen, forced liquidation may occur.

The number of steers 500 pounds and heavier, at 15 million head, was 2% more than the 14.7 million last year. And heifers in excess of 500 pounds not kept for replacement totaled 8 million, up 1% from the 7.9 million a year ago. The number of cattle on feed for more than 120 days increased 791,000 head from last year to 4.85 million.

The estimated supply of feeder cattle outside feedlots on July 1, at 37.4 million head, was up 300,000 head from the 37.1 million last year. All were signs that cattle have been backlogged due to supply chain issues surrounding the COVID-19 pandemic.

The July *Cattle* report also gives the first estimate by NASS of the 2020 calf crop.

The 2020 calf crop (includes beef and dairy calves) in the U.S. is expected to be 35.8 million head, down about 1% from last year. The decline was due to a declining beef cow herd because the number of milk cows on July 1 was up about 1%, at 9.35 million head.

The bottom line for cattle prices from a supply standpoint is the higher number of heavy-weight cattle in feedlots and the larger number of feeder cattle outside feedlots will continue to pressure prices in the near term. Longer term into 2021, the smaller beef cow herd and calf crop will be supportive to prices.

From a beef demand standpoint, much uncertainty continues because unknowns about the length and severity of COVID-19 will continue to cause volatile cattle prices.

A Canceled Football Season May Impact the Meat Industry

By Bryon Parman, NDSU Extension Agricultural Finance Specialist

Rumors and speculation have been swirling about whether we will have college or professional football in the fall.

At the professional level, as of this writing, the expectation is that we will have a season, but no preseason, and a set of protocols and standards that need to be met for the regular season to happen. What still is undetermined, however, is if fans will be allowed in the stands or if statewide social distancing measures will limit or eliminate the amount of tailgating that will be allowed around the stadiums.

The college level is a different story. So far, four of the power five Football Bowl Subdivision (FBS) conferences have said they will play conference-only games, and the Big 12 is likely to follow suite in the near future. Meanwhile, several of the Football Championship Subdivision (FCS) level conferences already have announced a cancellation of fall competition, including, as of this writing, the Patriot League, the Colonial Athletic Association, the Mid-Eastern Athletic Conference, the Ivy League, the Southwestern Athletic Conference and all junior college-affiliated schools.

Several other DII and DIII schools have done the same. So far, the Missouri Valley Conference, in which NDSU and UND participate, have made no such announcement. However, a vote was conducted on July 24 by the governing body of the National Collegiate Athletic Association (NCAA) regarding if/when NCAA-sanctioned tournaments will occur for

fall sports. This would affect every level of college football except FBS, which has different entities outside of the NCAA who determine participation in the FBS level playoff.

The result of the July 24 vote was that a decision will be delayed until at least August. If fall championships for football are canceled, this would make any game played effectively an exhibition game with no opportunity to declare an NCAA champion.

The cancellation of fall sports, mainly football as it is a major revenue sport for many schools, will have severe financial ramifications for colleges across the nation, but it also may have some negative financial implications for agriculture. Tailgating and game-watch parties are a big tradition across the U.S.

I have had the privilege of tailgating at the University of Nebraska, Kansas State University, Mississippi State University, the Kansas City Chiefs and now NDSU. Many of these stadiums hold 50,000 to 100,000 people, while many more gather outside the stadium to grill and enjoy time with friends and family, or enjoy at-home watch parties.

Some also gather at sports bars or restaurants to cheer on their favorite teams, consuming a variety of foods. For sports bars, a large percentage of their yearly revenue depends on fall sports watchers frequenting their establishments during football season.

Continued on page 7.



A Canceled Football Season May Impact the Meat Industry — continued from page 6

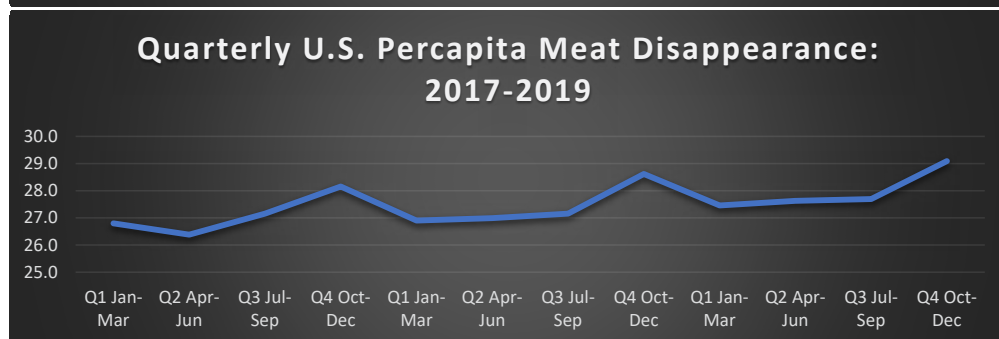
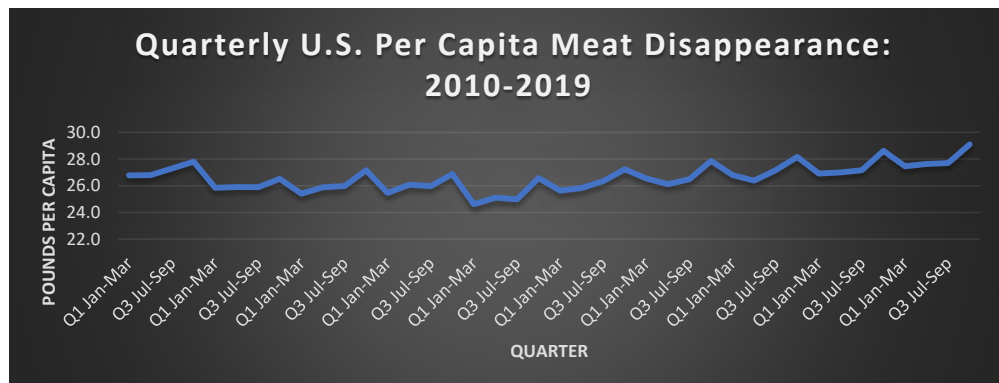
A common menu item during gameday festivities is a variety of meats prepared in various ways. Favorites include ribs, brisket, chicken wings, steaks, burgers and bratwurst. As an agricultural economist, for me this begs the question: How would a lack of football affect meat demand in the fall?

Using U.S. Department of Agriculture - Economic Research Service data for quarterly meat disappearance, a pattern emerges showing that quarterly per capita meat disappearance is lowest in most years during quarter 1 (January - March) and highest in most years in quarter 4 (October - December). Additionally, the second highest consumption quarter yearly tends to be quarter 3 (July - September).

The first chart includes all red meat, including pork, veal, lamb/mutton, poultry and beef combined, to eliminate as much as possible the substitution effect. This is to avoid the possibility that someone may choose one meat type over the other due to prices or availability.

The second figure simply zooms in on the last three years rather than the last 10 to better illustrate the meat disappearance differences by quarter. In this figure, we easily can see that in any given year, meat disappearance per capita is much higher in quarter 4 (October - December) than any other quarter, and the next highest tends to be the third quarter (July - September).

Fourth-quarter meat disappearance levels are obviously not entirely attributed to tailgating or football watch parties. The Thanksgiving and Christmas holidays occur during that same time, and much of the U.S. calf crop is weaned in the fall so that the uncertainty of the production season is mostly relieved by then impacting supply expectations and prices. Furthermore, the third quarter, July - September, occurs in the midst of the summer grilling season, including July 4 and Labor Day, during which consumer demand is high.



Data from: www.ers.usda.gov/data-products/livestock-meat-domestic-data/livestock-meat-domestic-data/#All%20supply%20and%20disappearance

Of course, trade increases in supply during the fall (for beef) and weather, as well as many other variables, have a large impact on consumer demand and supply, which leads to big changes in meat disappearance. However, millions of people gathering every Saturday (and Sunday for the National Football League) and preparing a variety of meats, usually in excess of what the attendees can consume, are hard to ignore.

Although the evidence is anecdotal, anyone who has attended a tailgating party or football watch party can attest that consumption of meats often exceeds what one would consume during a typical nonfootball Saturday. Unfortunately, this fall, we may find out how much seasonal meat demand is dependent upon America's most popular sport.

Crop Supply Chain Risks From COVID-19

By Frayne Olson, NDSU Extension Crop Economist/Marketing Specialist

The U.S. Department of Homeland Security has listed food and agriculture, as well as transportation systems, as critical infrastructures during the COVID-19 epidemic. This means workers in these industries have special responsibilities to maintain their normal work schedule during the pandemic.

However, this does not mean that business interruptions or supply chain disruptions will not occur. Everyone within the food and agricultural supply network, including farm managers, must be prepared for unexpected disruptions in the flow of inbound and outbound products, and the financial risks created by these disruptions.

Most businesses involved in agriculture have begun modifying processes and procedures to reduce the spread of the coronavirus and protect employees and customers from contracting the virus. For example, many agricultural processors and grain handlers in the region have restricted facility access to employees only, moved to electronic shipping documents and required outside delivery or shipping workers to remain in their trucks during loading and unloading. They also have adjusted work spaces to allow for more social distancing.

Despite these efforts, employees still are getting sick, being quarantined and missing work, sometimes for many weeks. Agribusiness managers are trying to adjust work schedules, cross-train employees and prepare contingency plans in case key employees are not able to perform their job responsibilities. The two greatest concerns are the death of an employee from the virus and a widespread infection within a company that causes the business to close during a peak season, such as harvest or spring planting.

Farm managers need to be prepared for potential supply chain disruptions this fall through next spring for production inputs, such as seed, fertilizer and crop protection chemicals, and grain deliveries. Large-scale shutdowns within crop supply chains are unlikely, but temporary slowdowns or shutdowns of individual agribusiness are possible.

Continued on page 9.



abishome_istockphoto.com

Crop Supply Chain Risks From COVID-19

— continued from page 8

A local grain elevator or processing plant may have to temporarily stop receiving due to widespread employee illness and facility cleaning. If this happens during harvest, farm managers may be forced to store more crop on-farm than expected or deliver crops to an alternative elevator farther away. Contracted deliveries may need to be re-scheduled or delivered to a different location, adding to farm level costs.

Disruptions in outbound transportation from local elevators to processing plants or export facilities could result in more negative local basis levels. A slowdown in outbound elevator shipments can limit the ability of the elevator to receive farmer deliveries.

A more negative local basis is the signal an elevator sends to slow inbound farmer sales. While these changes may be temporary, they still can create potential cashflow challenges for farmers.

Another potential risk is a major U.S export customer refusing delivery of products due to concerns about COVID-19 contamination. China recently requested testing and exporter certification that soybeans imported from the U.S., Brazil and Canada were COVID-19 free.



Soybean export companies from the three countries are resisting the request, saying there is no evidence that the coronavirus can be transmitted to humans through food products. Even though Chinese companies continue to receive shipments of U.S., Brazilian and Canadian soybeans, the risk of import restrictions remain.

A final potential supply chain risk from COVID-19 is for the resupply of key farm inputs, such as fertilizer, seed and crop protection chemicals. Fortunately, the majority of these inputs were already on-farm or in local storage when the coronavirus pandemic began in the U.S. early last spring.

Even though the odds are low that supply chain problems could occur this fall, delays could happen. Farm managers can take steps to reduce the impacts of possible supply chain interruptions. First, plan ahead. Place orders for farm inputs or schedule deliveries for crops in advance.

Fortunately, most agribusinesses will allow a farm manager to separate the pricing decision from the delivery or receipt of the product. For example, you can lock in the price for a portion of your soybean crop today but deliver the grain in December.

Second, be patient. Everyone I have spoken to is trying their best to adjust to the rapidly changing economic and public health conditions from COVID-19. Stress levels are already high, especially during busy times such as harvest. Most of the risks discussed in this article are beyond anyone's control.

Third, be flexible. If an unexpected problem occurs, take some time to evaluate all of the possible solutions. Don't make the problem worse by guessing. Ask questions, talk to others who have a similar problem and make decisions based upon the best information available.

NDSU EXTENSION

EXTENDING KNOWLEDGE >> CHANGING LIVES

The NDSU Extension does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names. NDSU encourages you to use and share this content, but please do so under the conditions of our Creative Commons license. You may copy, distribute, transmit and adapt this work as long as you give full attribution, don't use the work for commercial purposes and share your resulting work similarly. For more information, visit www.ag.ndsu.edu/agcomm/creative-commons.

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708, ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881.