

# Examining 2020 Corn and Soybean Acreage

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Spring acreage decisions are of interest to analysts and producers across the country, as COVID-19 disrupts supply chains and raises questions of longer-term demand shifts. Analysts have interest on the supply for the 2020/21 marketing year, while producers weigh profitability and agronomic considerations. The challenging part of the whole picture is that most alternative options are not any better than the first. Corn and soybeans compete for acres through most of the Corn-belt with cotton competing in the southern and southeastern portions, grain sorghum competing in the lower plains and small grains like spring wheat competing in the upper plains. Ohio does not have many large-scale alternatives outside of corn and soybeans due to growing conditions, access to end markets and specialized equipment limitations. Therefore, for most Ohio crop producers the options in randomized order are plant corn, plant soybeans, convert to forage or pasture, utilize prevented planting, Conservation Reserve Program (CRP) or to idle the ground to do capital improvements and prepare for winter wheat or barley. This article examines acreage intentions, local profitability, and the estimated national supply of corn and soybeans.

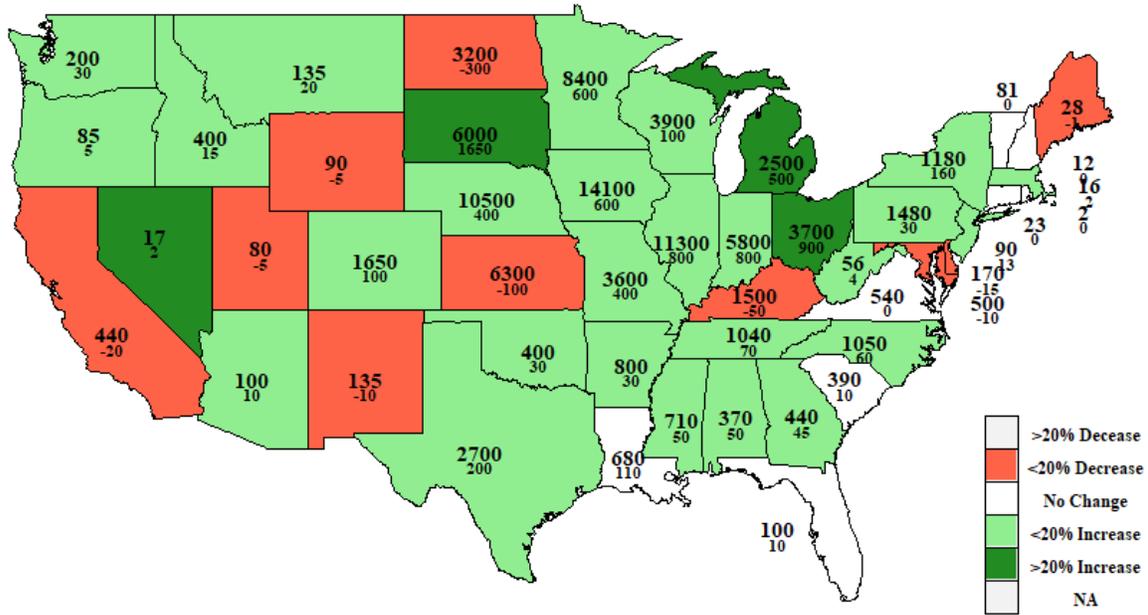
## Planting Intentions

The National Agricultural Statistics Service (NASS) released the summary of the *Prospective Plantings Survey* conducted annually the first two weeks of March on March 31, 2020. The survey of the planting intentions of 80,000 farmers is reviewed for reasonableness at both the regional field office and at the national level for accuracy. The *Prospective Plantings Report* provides a summary of planting intentions at that point in time and because market and weather conditions change between early March and planting, the March report should not be used as actual producer intentions at planting, but a starting point. Principal acres of major crops were estimated at slightly over 319 million acres, a 16.5 million acre increase from the challenging 2019 growing season, but slightly down from 319.3 million acres in 2018. The increase in principal crop acres largely came from coarse grain crops: corn, grain sorghum, barley and oats all up from 2019, 8%, 11%, 7%, and 7% respectively. The growth in feed grain acres outside of corn increases competition for feed use at a time when the livestock sector is adjusting to COVID-19 disruptions.

Crop producers indicated they intended to plant 96.99 million acres of corn and 83.5 million acres of soybeans. Figures 1 and 2 illustrate corn and soybean acreage intentions with percentage change from 2019 by state. States experiencing a greater than 20% increase in corn acres were states affected most by persistent rainfall in 2019 and large quantities of prevented planting acres. Almost all Corn-belt states indicated a 2020 soybean acre increase with Indiana being the exception matching their total from the prior year. Demand prospects for both crops are bearish for the upcoming marketing year. Ethanol is estimated to be down roughly 55 million bushels/week and soft international exports of soybeans are also trending down due to relatively cheap Brazilian soybeans. As mentioned in last week's update, soybean crush had a historic March 2020, but the prospects of strong crush continuing depend on logistical issues in competing countries as a result of COVID-19. The price impact for both commodities is evident in the ratio of new crop soybeans (November 2020) to corn (December 2020) currently at 2.5:1 up from 2.4:1 when the survey was taken. The higher ratio encourages more soybean acres, but timing is crucial. Given producers likely applied pre-planting nutrients and purchased seed, a larger ratio is needed to move significant national acres from corn to soybeans. Analysts have suggested 95 million corn acres. Over the last 20 years, corn acres declined more than 2 million acres from the March *Prospective Planting Report* to the *Final Acreage Report* only once- 2019 when acres fell 3.1 million. Acres increased 3.1 million in 2007. However, there may be changes regionally due to local basis. In Ohio, when adjusting for changes in harvest basis the new crop ratio increased for soybeans to 2.68:1 on April 22 from 2.46:1 March 2. This strong increase would indicate there is potential for acres not already prepared for corn planting to shift to soybeans in Ohio.

Figure 1

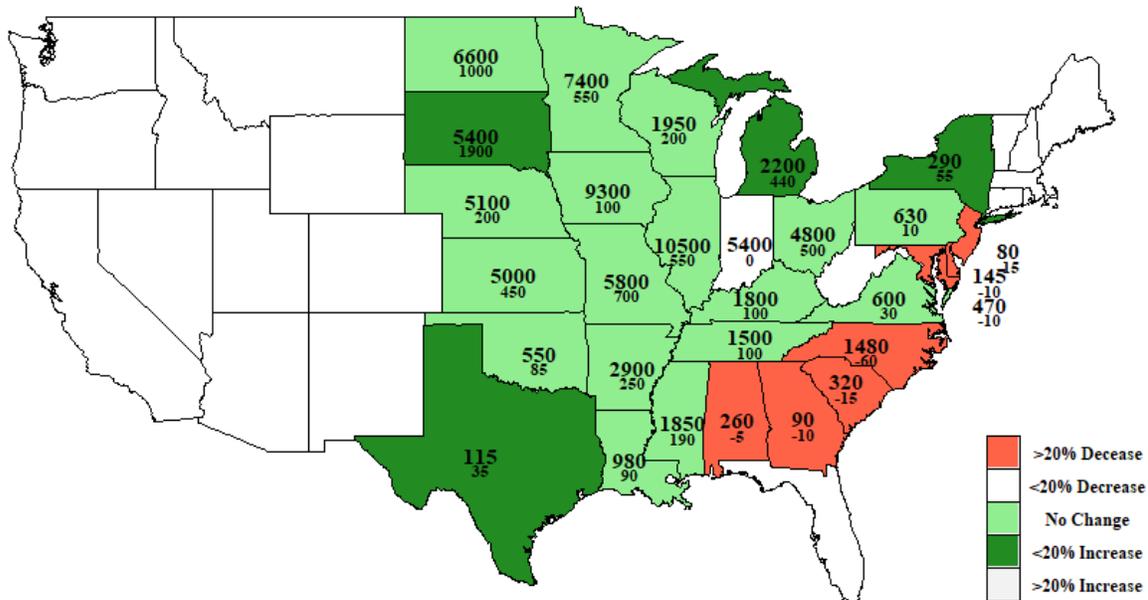
### 2020 Prospective Plantings Report and Change from 2019- Corn Thousand Acres



Data Source- USDA-National Ag Statistics Service, March 31, Prospective Planting Report

Figure 2

### 2020 Prospective Plantings Report and Change from 2019- Soybean Thousand Acres

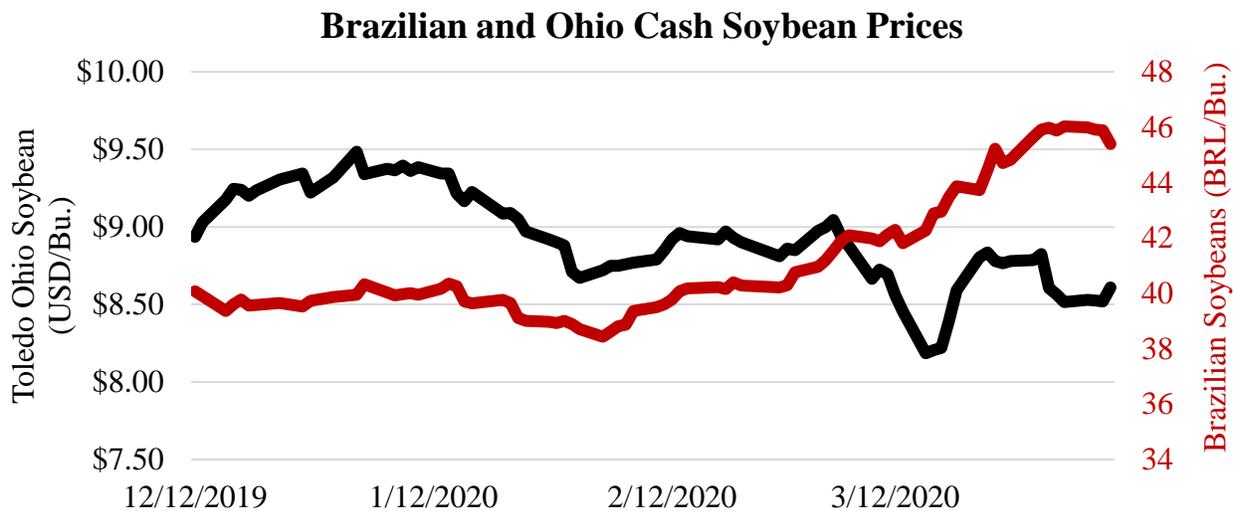


### Estimated National Supply of Corn and Soybean

Under the above planting intentions and the current outlook for corn demand, a large US ending corn supply appears imminent. With a historical relationship of harvested corn acreage to planted acres and a trendline yield of 178.5 bushel/acre this implies national production at 15.887 billion bushels- a new record. To match the record in 2016 at 15.148 billion with the same trend line yield, planted acreage would need to fall over 4 million acres. A reduction this large would require 0.3 million additional grain sorghum acres in Kansas, Oklahoma and Texas, increased spring wheat acres in the Upper Plains by about 1.2 million and close to 2.5 million acres switched to soybeans in the Eastern Corn-belt. While possible, this would still leave the US with a 17.4-billion-bushel supply which includes an expected increase in 2019/20 marketing year carryout. Under a scenario where the Safrinha crop in Brazil and the Black Sea region both have production declines due to drought, China increases purchases of US corn to meet its Phase 1 trade commitments and ethanol production returns to full capacity there is still roughly 2.3 billion bushels in 2020/21 carryout. This appears to be the best-case scenario for corn price with an average yield. A dry summer in the US reducing yields is an undesirable way to increase corn price. Under any scenario, the likelihood of a large US corn crop is likely with prices remaining below cost of production for many producers.

Any substantial reduction in corn acres is expected to increase soybean acres above the 83.510 million reported in the *Prospective Planting Report*. After a year of record soybean carryout built on decreased soybean exports in 2018/19 the drastically smaller than expected 2019 soybean crop of 76.1 million acres reduced estimated 2019/20 soybean stocks to a manageable level. Increasing the soybean acres above the *Prospective Planting Report* by 2 million acres with a national trend line yield of 50.5 bushel/acre implies a 4.278-billion-bushel crop, the fourth largest on record. While domestic soybean crush has continued to set new monthly records and will likely increase year over year, US soybean exports continue to fall below the seasonal pace needed to reach the current USDA estimate of 1.775 billion bushels by 260 million bushels or 15%. Support for US exports in the current marketing year will likely need to come from China buying large quantities of US soybeans August through December. When looking at demand for the 2020/21 soybean crop one concern is the market signals Brazilian producers are receiving to expand soybean production and therefore exports. In last week's market outlook, it was discussed how currencies in Brazil and Argentina have fallen roughly 30% compared to the US dollar. This decreases the incentive to buy US products in the short-term, but since commodities in South America are based off the Chicago Board of Trade, the decreased currency rate also encourages Brazilian producers to lock in high prices and expand production in the long-term. Without stronger international demand, the US soybean crop at 83.5 million acres and supplies at 4.7 billion bushels appear adequate to reach \$8.50 cash soybean prices for 2020/21.

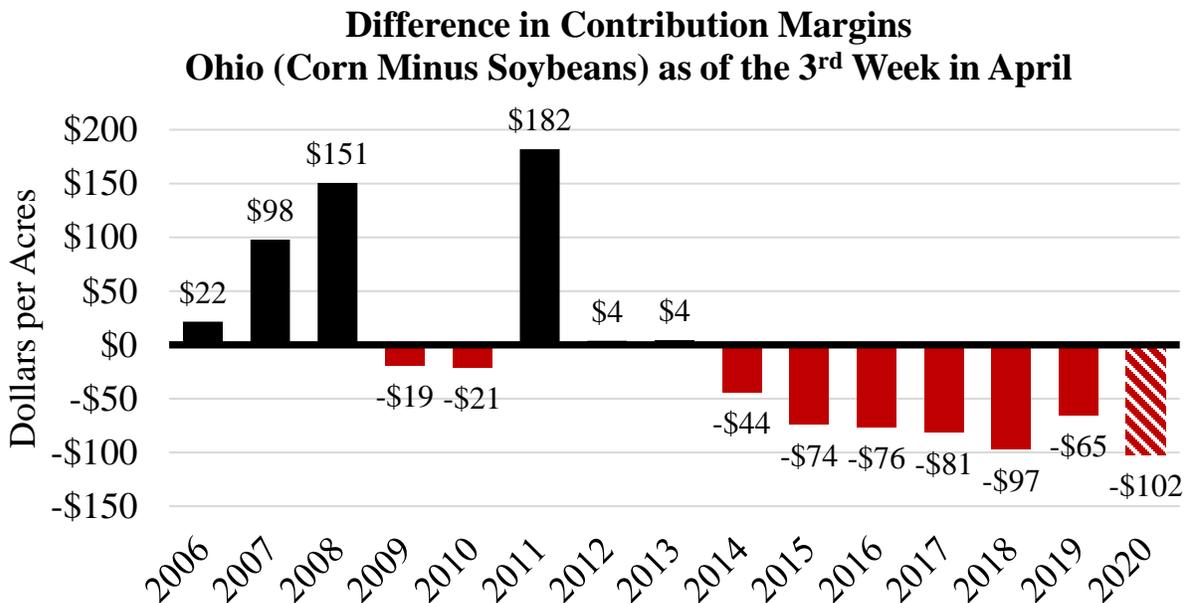
Figure 3.



### Production Cost Considerations

Examining relative prices is one part of estimating Ohio acreage adjustment from the *Prospective Planting Report*, with the second part being consideration of production costs for each commodity given expected prices at planting. Historically, when both corn and soybeans have had market prices in the early spring below estimated costs, preference has been given to soybeans due to lower variable costs. Corn is given preference when both crops show anticipated positive returns. Illustrated in Figure 4 is the difference in contribution margins between the two crops for west central Ohio cropland. The contribution margin is the difference between expected market revenue and total variable costs. To get expected market revenue the regional harvest basis bid was subtracted from the harvest futures price during the 3<sup>rd</sup> week of April for both commodities each year and multiplied by a 40-year trend yield. The variable costs are sourced from annual OSU Production Budgets produced by Barry Ward. This calculation represents what was known to producers directly before planting each year. Since 2014, soybeans have been favored to corn acres at planting. Crop insurance and government payments coupled to production have changed this relationship in final returns per acre in years of adversity, but that income support was unknown to producers at planting. Similarly, Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) payments are not tied to production and therefore are not included. The difference in 2020 contribution margins is the strongest since corn was favored before the 2011 growing season at \$102/acre.

Figure 4



Based on the March 1<sup>st</sup> *Grain Stocks Report* released by NASS on March 31, 2020 Ohio had roughly 44% of the 2019 corn production in on-farm storage and roughly 35% of the 2019 soybean production held on-farm. At these levels there was a significant decline in farm level working capital as Ohio cash prices declined due to COVID-19. It is estimated that \$19.90/ acre in 2019 crop revenue has been lost since the beginning of March when adjusted for the percentage already sold. For a farm of 1,100 acres split 50/50 corn and soybeans this would result in a working capital decline of \$21,890. This working capital would have likely been used to pay input costs related to the 2020 crop. Selling old crop corn and soybeans on the cash market currently is undesirable for most farms. Finding alternative ways to generate short-term working capital is anticipated. Interest costs have declined for operating loans and additional cost savings can come from switching to soybean acres. However, even for soybeans the market conditions at this point in April are worse than the same point in recent years including 2018 when trade disputes negatively

impacted soybean prices before planting. Farmers may want to consider the potential of switching to soybeans and look to make new crop marketing sales.

### **Summary**

The planting intentions reported by US producers during the first of March coupled with current demand prospects make a corn supply near 18 billion bushels likely during the 2020/21 marketing year. A large soybean increase near 5 billion bushels is also possible. Market conditions always change between the March *Planting Intentions Report* and when planting starts, with 2020 futures prices already accounting for lost demand and the potential of large supplies. A reduction in planted corn acres with increases to grain sorghum, spring wheat and soybeans is expected. The reduction is likely not going to be more than 2 million acres making the 2020 corn crop with expected yields a new record. Marketing conditions and financial considerations would support a shift to soybean acres in the Eastern Corn-belt and looking for opportunities to market new crop soybeans at current harvest prices. Little new crop corn marketing is happening, with the hope of short crops globally. As farmers know, a lot can happen between now and harvest, but market conditions suggest a continued deterioration of farm financial positions in 2020.

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