

What Does Typical Acreage and Normal Yields Mean for 2020 Corn and Soybean Prices?

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I realize that we started the 2019-20 marketing year for corn and soybeans last month, and it might seem silly to talk about the 2020-2021 marketing year. However, the December 2020 corn and November 2020 soybean contracts are currently trading near their contract highs and maybe providing a pricing opportunity for the 2020 crops. I think it is worthwhile to consider how a “normal” corn and soybean crop would affect the corn and soybean markets. This article will discuss what typical corn and soybean planted area combined with normal yields might mean for 2020 ending stocks and the U.S. marketing year average (MYA) from price for corn and soybeans assuming various levels of domestic and export demand.

Over the past five growing seasons, the U.S. farmers planted, including prevented planted acres, about 180 million acres of corn and soybeans. The average allocation of the acreage is 52% corn (93.6 million acres) and 48% soybeans (86.4 million acres). I am defining normal yields as trend yields, which has been increasing over the last 30 years at 2 bushels/acre/year for corn and 0.5 bushels/acre/year for soybeans. The trend yields for 2020 corn and soybeans are 175 and 49.5 bushels/acre, respectively.

Table 1 is an example 2020 corn balance sheet that assumes typical corn acreage, trend yield, and total corn use of 14.1, 14.3, 14.5, and 14.7 billion bushels. The use levels are similar to total corn demand for 2019 (projected), 2018, 2016, and 2017, respectively.

Table 1 includes the 2019-20 corn balance sheet from the October report with potential balance sheets for the 2020-21 marketing year. USDA currently projects 2019 corn ending stocks at 1.9 billion bushels and a U.S. marketing year average (MYA) farm price of \$3.80/bushel (Table 1). A typical planted area in 2020 of 93.6 million acres would be an increase of 3.7 million acres from 2019. A trend yield of 175 bushels/acre would be a 6.6 bushels/acre increase over the 2019 corn yield. If 2020 is a typical corn year, the 2020 corn crop could be 15.02 billion bushels, and the 2020 supply could be 1.05 billion bushels larger than this year’s corn supply (Table 1).

The takeaway message from Table 1 is that stocks are likely to increase if 2020 is a year with typical acreage and normal yields. If use levels are similar to the 2019 marketing year, then stocks could swell to 2.8 billion bushels, and the price would plummet to \$3.30/bushel. Stronger demand levels are needed to offset the 1.9 billion bushels projected carry-in and the 15 billion bushel corn crop. For example, a 14.5 billion bushel demand implies ending stocks of 2.5 billion bushels and a US MYA corn price of \$3.50/bushel. The demand growth needed would require

sluggish exports to increase by 200 million bushels with feed and industrial to increase by a total of 300 million bushels from the current 2019 projected use. All of the demand categories are facing headwinds that makes the large year/year increase in use unlikely.

Table 2 provides a similar analysis for the 2020 soybean market. If the 2020 soybean planted area is typical, then farmers will plant 9.9 million more acres than in 2019. Similarly, a trend yield would be 2.6 bushels/acre more than 2019’s projected soybean yield. This typical year scenario implies total soybean supply will be 4.7 billion bushels, which is a 274 million bushel increase over 2019.

Table 2 assumes total use of 4, 4.1, 4.2, and 4.3 billion bushels, which are similar to the total use for the 2018, 2019, 2016, and 2017 marketing years, respectively. If soybean demand remains sluggish at 4 billion or 4.1 billion bushels, then soybean stocks would increase by 200 to 300 million bushels from the 2019 stocks. Because of the increase in stocks, the U.S. MYA soybean price would decline potentially by \$1.00 to \$1.40/bushel from the October 2019 US MYA projected price (Table 2).

The soybean market needs total use to increase to 4.2 or 4.3 billion bushels to cushion the impact of the potential 4.27 billion bushel soybean crop in 2020. If use is 4.2 billion bushels, then stocks might increase by about 100 million bushels, and the US MYA price would be about \$0.40/bushel lower than the 2019 price. Total use of 4.2 billion bushels would require exports to increase by 177 million bushels from 2019 without domestic use declining. In short, soybean exports would have to return to levels achieved before the trade disruption.

The takeaway message from this article is that corn and soybean stocks are likely to increase substantially from the 2019 marketing year with a corresponding reduction in the US MYA farm price. What could soften this doom and gloom forecast? Another year where weather prohibits planting and reduces yield would help keep the 2019 corn and soybean crops from swelling stocks and pushing prices lower.

Of course, relying on Mother Nature to cushion the impact of potentially large corn and soybean crops is not a proactive management strategy. A resolution to trade agreements with Japan and Mexico for corn and China for soybeans that boosts exports would also

help reduce the impact of potentially larger corn and soybean crops in 2020. Unfortunately, the trade negotiations and approval are also out of managers' control.

What managers can do is monitor the 2020 December corn and 2020 November soybean futures contracts to protect prices whenever opportunities arise. The seasonality of both markets suggests the best pricing opportunities occur during winter and early spring. Managers should develop their 2020 corn and soybean budgets to identify pricing points. Managers should consider hedging a portion of 2020 production when the pricing objectives are met. The example 2020 corn and soybean balance sheets in Table 1 and Table 2 demonstrate the weakness in corn and soybean prices if 2020 has typical acreage, normal yields, and sluggish demand.

I encourage managers to be proactive and take advantage of opportunities to manage risk and protect profit margins when these opportunities arise. Plan ahead.

Table 1. Example 2020 U.S. Corn Supply and Use Assuming Typical Acreage and Normal Yields for Various Demand Levels.

	Oct. 2019 2019-20	2020-21 Corn Balance Sheet Assuming Typical Planted Area, Trend Yields, and Varying Total Use			
Planted Area (million)	89.9	93.6			
Harvested Area (million)	81.8	85.8			
Yield	168.4	175.0			
	----- Million Bushels -----				
Beginning Stocks	2,114	1,928			
Production	13,779	15,020			
Imports	50	50			
Total Supply	15,943	16,998	16,998	16,998	16,998
Total Use	<u>14,015</u>	<u>14,100</u>	<u>14,300</u>	<u>14,500</u>	<u>14,700</u>
Ending Stocks	1,928	2,898	2,698	2,498	2,298
Stocks-to-Use Ratio	13.8%	20.6%	18.9%	17.2%	15.6%
Days of Stocks	50	75	69	63	57
U.S. MYA Farm Price	\$3.80	\$3.27	\$3.38	\$3.50	\$3.63

Source: October 2019 WASDE and author's calculations.

Table 2. Example 2020 U.S. Soybean Supply and Use Assuming Typical Acreage and Normal Yields for Various Demand Levels.

	Oct. 2019 2019-20	2020-21 Soybean Balance Sheet Assuming Typical Planted Area, Trend Yields, and Varying Total Use			
Planted Area (million)	76.5	86.4			
Harvested Area (million)	75.6	85.4			
Yield	46.9	49.5			
	----- Million Bushels -----				
Beginning Stocks	913	460			
Production	3,550	4,277			
Imports	20	20			
Total Supply	4,483	4,757	4,757	4,757	4,757
Total Use	<u>4,023</u>	<u>4,000</u>	<u>4,100</u>	<u>4,200</u>	<u>4,300</u>
Ending Stocks	460	757	657	557	457
Stocks-to-Use Ratio	11.4%	18.9%	16.0%	13.3%	10.6%
Days of Stocks	42	69	58	48	39
U.S. MYA Farm Price	\$9.00	\$7.62	\$8.08	\$8.60	\$9.21

Source: October 2019 WASDE and author's calculations.