



## Estimating March 1<sup>st</sup> US Soybean Stocks

**Ben Brown**

College of Agriculture, Food and Natural Resources  
University of Missouri

**Carl Zulauf**

Department of Agricultural, Environmental and Development Economics  
Ohio State University

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This article provides an estimate of US soybean stocks as of March 1, 2021. On March 31, USDA (United States Department of Agriculture) will release its March 1 survey estimates in the *Grain Stocks Report*. A record low stock to use ratio and relatively high prices for soybeans implies the March stocks report should not be overshadowed by the *2021 Prospective Plantings Report* also released on March 31.

In the [March 9, 2021](#) WASDE (*World Agricultural Supply and Demand Estimates*), USDA estimated a US 2020/21 ending stock to use ratio of 2.6% for soybeans. If realized, this is marginally less than the record low set in 2013/14. Increased sales to the People Republic of China and a reduction in US production contributed to the low ratio. Combined soybean shipments and outstanding sales to China through the first week of March 2021 increased 195% compared to the same week the year prior (446 million bushels March 2020 vs 1.317 billion bushels March 2021). Meanwhile, 2020 US soybean production shrunk by 178 million bushels due to reduced acreage and yield between September 2020 and January 2021.

Estimating stocks begin with an estimate of supply at the start of the quarter. To estimate March 1 stocks, the starting value is the December 1 stocks estimate in the December *Grain Stocks Report*. At the start of the December to March quarter, soybean stocks stored in all positions on December 1, 2020 totaled 2.933 billion bushels. Soybeans unharvested as of December 1 are counted as on-farm storage and included in the *Grain Stocks* report. The US has imported fewer soybeans through the first five months of the marketing year compared with the previous 5-year average, but the expectation is for imports to pick up as domestic availability tightens. Adding in 3 million bushels of soybean imports during the quarter implies total soybean supplies of 2.936 billion bushels.

Soybean exports have been strong. Export inspections through the last week of February total 1,920 million bushels. The US Census Bureau count of total exports exceed inspections by 67 million bushels. Assuming the difference remains 67 million bushels, 1,987 million bushels have been shipped through the first half of 2020/21- 88% of USDA's expected target for the 2020/21 marketing year. Subtracting the

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1,113 million bushels exported in the first quarter leaves 874 million bushels of second quarter soybean exports.

Soybeans crushed through the first half of the marketing year is estimated using USDA's [Oilseed Crushings, Production, Consumption and Stocks](#) reports for September through January. These reports sum to 949 million bushels. Another report, by the National Oilseed Processors Association (NOPA) released March 15, 2021, reports that its members crushed 155.2 million bushels in February 2021. For the first five months of the 2020/21 marketing year, NOPA estimates were 94.4% of USDA's reported total. Using the 94.4% adjustment factor, NOPA's 155.2 million bushels becomes 164 million bushels crushed during February, implying a total of 1,113 million bushels were crushed during the first half of 2020/21- 51% of USDA's projection of soybeans crushed during the market year. Soybeans crushed in the second quarter total 555 million bushels (1,113 million bushels for first half of the year minus 558 million for the first quarter).

Soybeans used for feed, seed, and residual are hard to estimate by quarter. Over the previous five marketing years, the distribution of seed, feed and residual use by quarter is rather large. Historically, the value has a positive average in quarters one and three (possibly due to higher feed use in quarter one and seeds for planting use in quarter three) but a negative average for quarters two and four. The first quarter of 2020/21 had a feed, seed, and residual use of 74.4 million bushels. Over the five previous marketing years, second quarter feed, seed, and residual use has made up as much as 22% in 2015/16 and as little as -53% in 2017/18 of annual feed, seed, and residual use. Average share is -21%. Assuming USDA's estimated annual value of 124 million bushels is correct, the -21% average share implies a reduction of 26 million bushels for the 2<sup>nd</sup> quarter and 48.4 million bushels used for feed, seed and residual use during the first half of the marketing year. The smaller share of first half feed, seed, and residual use relative to the previous five years increase the bushels available for consumption over the remaining six months.

Total soybean consumption during the second quarter of the 2020/21 marketing year is estimated to be 1.403 billion bushels: 874 million bushels of exports plus 555 million bushels of domestic crush minus 26 million bushels of feed, seed and residual use. This exceeds the previous 5-year second quarter consumption average of 1.087 billion bushels by 316 million bushels. Given December 1, 2020 stocks of 2.936 billion, March 1<sup>st</sup> stocks are estimated to be 1.533 billion bushels (2.936 billion bushels minus 1.403 billion bushels).

If year-end annual stocks estimated by USDA in March of 0.120 billion bushels remain the same and March 1<sup>st</sup> stocks are near the value calculated above, US soybean consumption is estimated near 1.439 billion bushels during the second half of the marketing year, assuming 29 million bushels of soybean imports. Imports are expected to be higher than in recent years as US soybean users are likely to find international soybeans price competitive to tight domestic supplies.

USDA's March 1<sup>st</sup> stocks report and 2021 planting intentions, both released on March 31, 2021: will set the tone for soybean prices over the last six months of the 2020/21 marketing year. The historical tightness of soybean stocks with anticipated stronger than normal consumption in the second quarter justifies a reminder to not overlook grain stocks in favor of planting intentions on March 31<sup>st</sup>.

Table 1 summarizes the estimates provided in the article.

**Table 1. Estimated 2020/21 Second Quarter Soybean Supply and Demand**

(million bushels)

Beginning December 1 Stocks	2,933	
Imports	+3	
<b>Total Supply</b>		<b>2,936</b>
Exports	874	
Domestic Crush	555	
Feed, Seed, and Residual	-26	
<b>Total Second Quarter Consumption</b>		<b>1,403</b>
<b>Estimated March 1, 2021 Stocks</b>		<b>1,533</b>

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## References

National Oilseed Processors Association, *Crush Report*. March 15, 2021. <https://www.nopa.org/resources/nopa-crush-report/>

United State Census Bureau, *Trade Data*. March 5, 2021. <https://www.census.gov/foreign-trade/index.html>

United States Department of Agriculture, National Agricultural Statistics Service. *Grain Stocks*. January 12, 2021. <https://usda.library.cornell.edu/concern/publications/xg94hp534>

United States Department of Agriculture, National Agricultural Statistics Service. *Fats and Oils: Oilseed Crushings, Production, Consumption and Stocks*. March 1, 2021. <https://usda.library.cornell.edu/concern/publications/mp48sc77c>

United States Department of Agriculture, World Agricultural Outlook Board. *World Agricultural Supply and Demand Estimates*. March 9, 2021. <https://www.usda.gov/oce/commodity/wasde>