Soybean Supply and Demand Forecast

- U.S. soybean planted acreage is expected to increase 11.5 million acres over the forecast period.
- U.S. soybean yields are expected to increase 7 bushels per acre or an increase of 17%.
- Expected soybean production increases are forecast to exceed 1.1 billion bushels over the forecast period.
- Soybean crush and exports are expected to increase 200 million bushels and 925 million, respectively, from the baseline year of 2011 through to 2020. That translates into increases of 12% over the period for the volume crushed and 76% in exports. Soybean exports will be used to fulfill China’s appetite to crush soybeans domestically.

- Listed below are events that have influenced soybean crush margins as shown in Figure 1.
  - In early 1990s, Russia stopped importing grains.
  - Normal crop yields from 1998 through 2001 coupled with lower world demand.
  - A continual increase in palm oil production led to a glut of oil and lower prices.
  - A consolidation of the world oilseed crushers during the 1990s and early 2000s resulted in a more disciplined industry.
  - In 2005, the trans-fat issue started shifting oil demand away from soybean oil.
  - World biofuel policies combined with U.S. ethanol policies started to significantly increase corn and oil demand yearly from 2005 to present.
  - From 2006 through 2007, the world experienced wheat crop failure in several nations.
  - Record energy prices result in higher biofuel demand for corn and oilseeds in 2008.
  - Barring a collapse in crude oil prices back to $30 per barrel, soybean crush margins will remain in the 35 cent to 90 cent per pound trading range.
Figure 1: Historical CBOT Nearby Futures Soybean Crush Margins

Source: CBOT
Figure 2: U.S. Soybean Supply and Demand (million bushels)

Source: USDA and Informa
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SOYBEAN PRODUCTS

• U.S. biodiesel mandate is driving the increase in oilseed crush.
  - The mandate is increasing to 1.28 billion gallons in 2013. The 280 million gallon increase represents a vegetable oil and animal fat demand increase of 2.1 billion pounds.
  - Biodiesel production consumes 4.8 billion pounds of vegetable oil, of which 3.7 billion pounds soybean oil, equivalent to 21% of total soybean oil consumption.

• World demand for vegetable oil is increasing as the world population becomes wealthier. In 1974 world GDP per capita in constant U.S. dollars based on the year 2000 was $3,620 and in 2007 had risen to $6,029,\(^1\) while vegetable oil consumption rose from 6.3 kg/capita/year to 11.4 kg/capita/year as food from 1974 to 2007\(^2\) or not quite doubling.
  - The increase in crush to meet vegetable oil demand is expanding the amount of soybean meal available for domestic feeding and exports.

• Oilseeds that are higher in oil content, such as canola, are benefiting from the high oil price versus meal price.

• Soybean oil usage in food products has declined from 16.3 billion pounds in 2000 to 14.2 billion in 2010 while biodiesel usage increased from 63 million in 2000 to 2.6 billion in 2010.
  - The trans-fat issue that lowered soybean oil consumption is no longer a major issue. This will allow soybean consumption to increase.

• Throughout the forecast period, soybean oil production will increase as domestic use and exports do the same. Ending stocks will remain stable as the U.S. exports excess production.

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Figure 3: U.S. Soybean Oil Supply and Demand (million pounds)

Source: USDA and Informa
• The U.S. will continue to be a large soybean meal exporter.
  o Exports are forecast to increase by 2.4 million short tons, reaching 11 million by 2014 before declining to 8.5 in 2020. Exports will decline as domestic use increases as animal numbers rebound.

• Domestic soybean meal usage is expected to increase approximately 5 million tons from 31 million in 2011 to 36 million in 2020. Over the next 10 years, the U.S. soybean meal demand is expected to increase by 15%.
  o Increases in canola meal and DDGS production are replacing corn and soybean meal in feed rations.
Figure 4: U.S. Soybean Meal Supply and Demand (thousand tons)

- Exports
- Imports
- Production
- Domestic Use
- Ending Stocks

Source: USDA and Informa
**Major Importing Countries**

- U.S. barley exports to any one country are less than 500 thousand MT.

- U.S. oat imports primarily come from the Netherlands and Canada.

- U.S. corn exports are largely shipped to Asia and Mexico.
  - The two largest importers are Japan and Mexico.
    - Japan is a developed country with a declining population.
    - Corn import levels are declining.
  - In crop year 2011, China has imported a significantly higher level of corn than in the last ten years.
    - Increasing corn imports are offsetting export declines in Japan and South Korea.
    - Corn traders are closely monitoring whether China buying corn is a one year aberration, an acceptance that a minimum level of imports are necessary, or a mirror of soybean import patterns.
    - Once China’s policy allowed soybean imports, China’s soybean imports exploded and changed world trading patterns.
    - Informa believes China will accept a minimum level of corn imports as a necessity, but still attempt to remain nearly grain self-sufficient.
      - China does not want U.S. corn to become a trade negotiation tool. China still remembers the U.S. grain embargo of the former U.S.S.R. in the late 1970s.
        - The South Korean, Colombian and Panamanian trade agreements will improve agricultural exports. South Korea will be able to import more pork products from the U.S.

- U.S. soybean trade is dominated by China as shown in Figure 9.
  - In crop year 2010, China accounted for 60% of U.S. soybean exports.
  - China is also buying South American soybeans, which creates an export surge between the U.S. and South American harvest periods.

- China’s buying of soybeans is creating optimism for other agricultural products, such as corn and pork.
Figure 5: World Soybean Production and Net Trade, 2010
Figure 6: World Soybean Meal Production and Net Trade, 2010
Figure 7: World Soybean Oil Production and Net Trade, 2010
• U.S. soybean meal exports are largely shipped to Canada and Mexico.

• The U.S. biodiesel mandate is reducing the amount of oil available for export.
  o Crop year 2011 soybean oil exports are expected to decrease 884 thousand MT or 61%.

• China corn acreage is expected to increase slightly at the expense of other crops in an attempt to remain grain self-sufficient.

• China domestic consumption of corn is continuing to increase as the population becomes wealthier and in turn, consumes more meat and processed products.
  o The government is attempting to curtail the rate of economic growth to prevent inflation.
    ▪ Increasing commodity imports will shrink inflation.
    ▪ Pork is the main dish in China and the increasing price of pork is a major area of concern for the Chinese government.
      • China could meet domestic pork demand by increasing pork imports and in turn, reduce domestic corn consumption.
      • China could grow the domestic pork industry, which would increase demand for corn.
        o Historically, China’s policy was to develop markets to create jobs. For example, China imports soybeans and crushes them domestically instead of importing soybean products.
Figure 8: China Corn Supply and Demand (thousand metric tons)

Source: USDA and Informa
• China’s soybean acreage is expected to remain steady.

• Due to China’s large population, selling cooking oil locally has not been a problem. So, the level of crush is determined by soybean meal demand.

• As China’s domestic consumption of meat increases and animal production switches from “back yard” to modern commercial animal operations, the demand for soybean meal has increased.

• The government has enacted policies that made importing the soybeans and crushing more attractive than importing soybean products.

• China soybean annual net imports have increased by 24 million MT from 2006 through 2010. From 2010 through 2020, soybean annual net imports are expected to increase an additional 54 million MT to 106 million MT in 2020.
Figure 9: China Soybean Supply and Demand (thousand metric tons)

Source: USDA and Informa

“Farm to Market: A Soybean’s Journey” can be accessed at [www.unitedsoybean.org](http://www.unitedsoybean.org) or [www.soytransportation.org](http://www.soytransportation.org).

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