

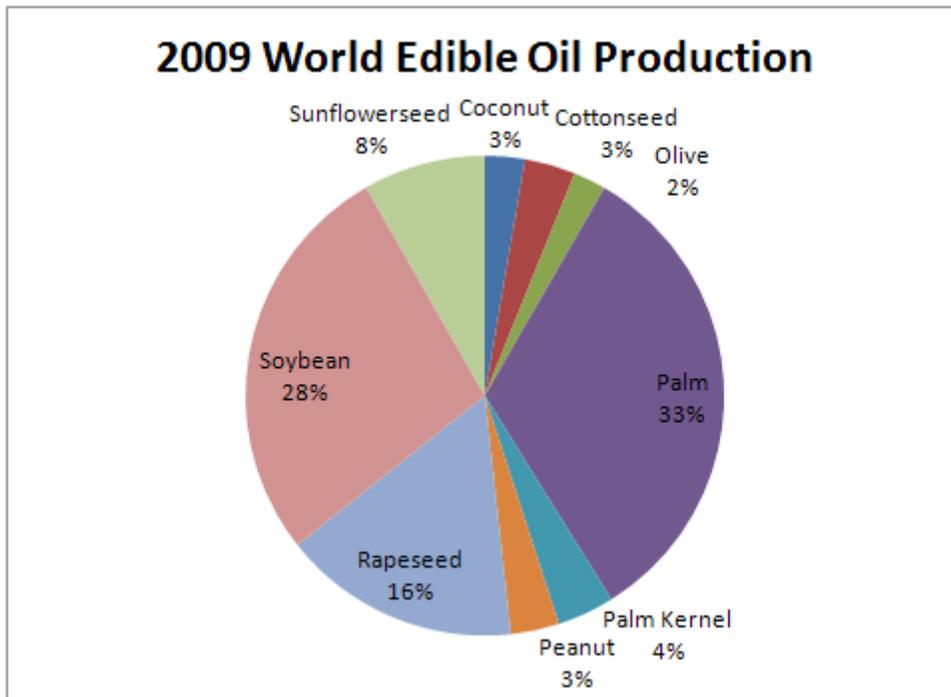
**Agricultural Products**

# **An Overview of the Edible Oil Markets: Crude Palm Oil vs Soybean Oil**

July 2010

Edible vegetable oils are some of the most crucial cooking ingredients in the world. In addition, edible oils are used in the production of soaps, washing powders, personal care products and bio-fuels. However, two edible oils—soybean oil and palm oil—account for roughly 61 percent of the total world production. Chart 1 provides a breakdown of the world’s edible oil production in 2009.

**Chart 1: World Edible Oil Production**



In 2009, palm oil and soybean oil accounted for 33 percent and 28 percent of world production, respectively. Following the May 24, 2010 launch of U.S. Dollar Cash-Settled Crude Palm Oil futures, you can now hedge both of these products in one location on CME Globex, the world’s leading electronic trading platform. In this paper we will examine the fundamentals for soybean oil and palm oil, the key supply and demand drivers, and the mechanics for the futures contracts traded on CME Globex.

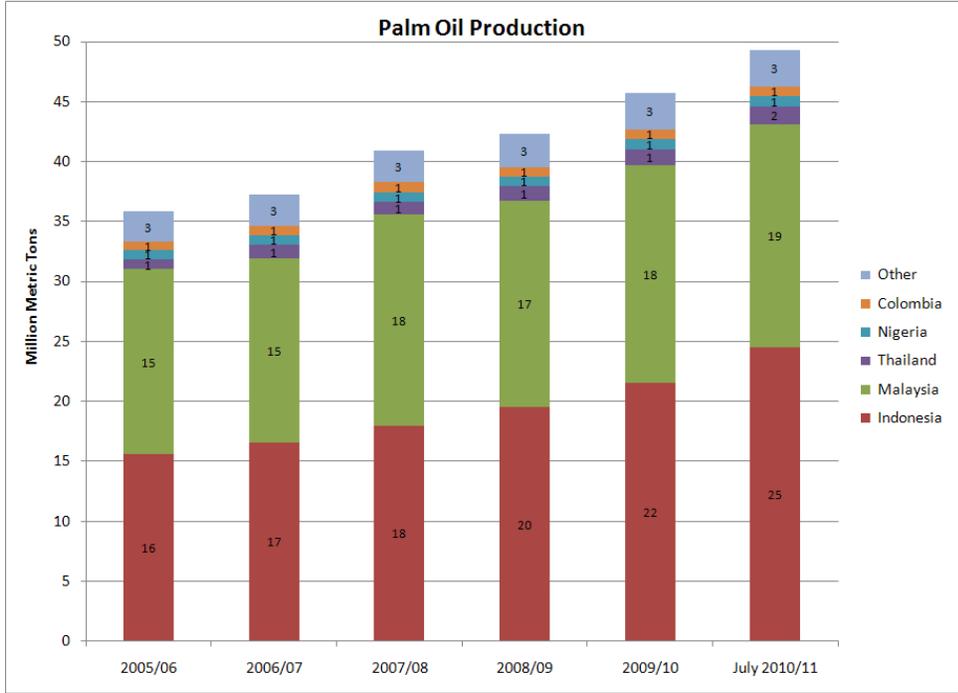
# Palm Oil Fundamentals

Palm Oil is currently the most consumed edible oil in the world, with Malaysia and Indonesia being the top two producers. Palm oil originated in West Africa in the 1800’s and was highly sought after by many Europeans. This low cost oil being imported into Europe was primarily used for soaps and as a lubricant during Britain’s industrial revolution. It was in 1910 that oil palm trees were first introduced into Malaysia. William Sime and Henry Darby started the original plantations, which remained London-based companies until the 1960’s. The Malaysian government then approved a “Malaysianisation” act that consolidated all of the companies and retook control of the plantations. This created the world’s largest plantation which is now known as Malaysia Sime Darby Berhad.

## Production

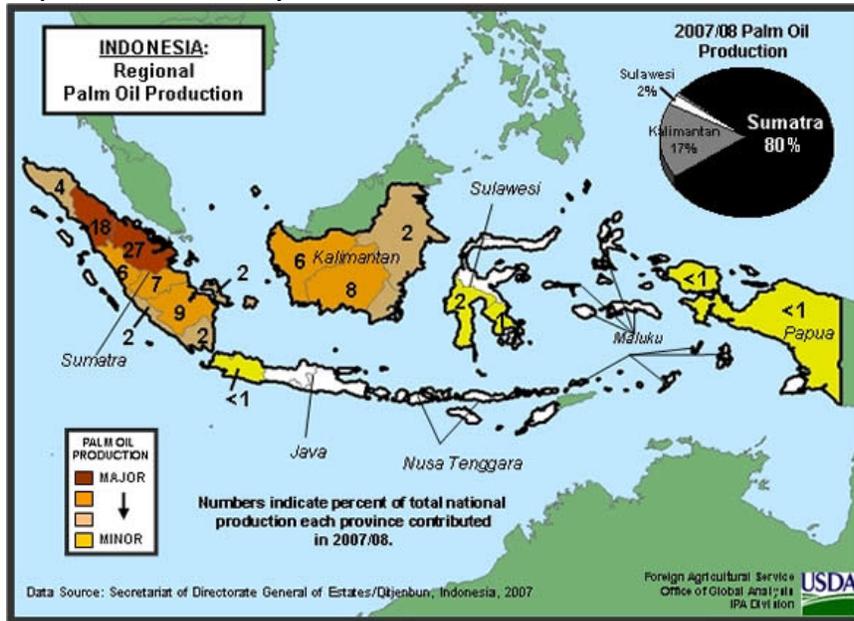
Through July of 2010 a little over 43 million metric tons (MMT) of palm oil have been produced with 87 percent coming from Indonesia and Malaysia. Currently, the largest producing country is Indonesia which has produced 24.5 MMT so far this year. This accounts for 50 percent of the world’s production. Malaysia comes in second at 18.6 MMT (38 percent), followed by Thailand 1.5 MMT (3 percent) and Colombia and Nigeria at 0.8 MMT (2 percent) each. The remainder of the producing countries accounted for 3.1 MMT (6 percent). Chart 2 shows world palm oil production from 2005.

**Chart 2: World Palm Oil Production**



Map 1 shows the primary palm production areas for Indonesia.

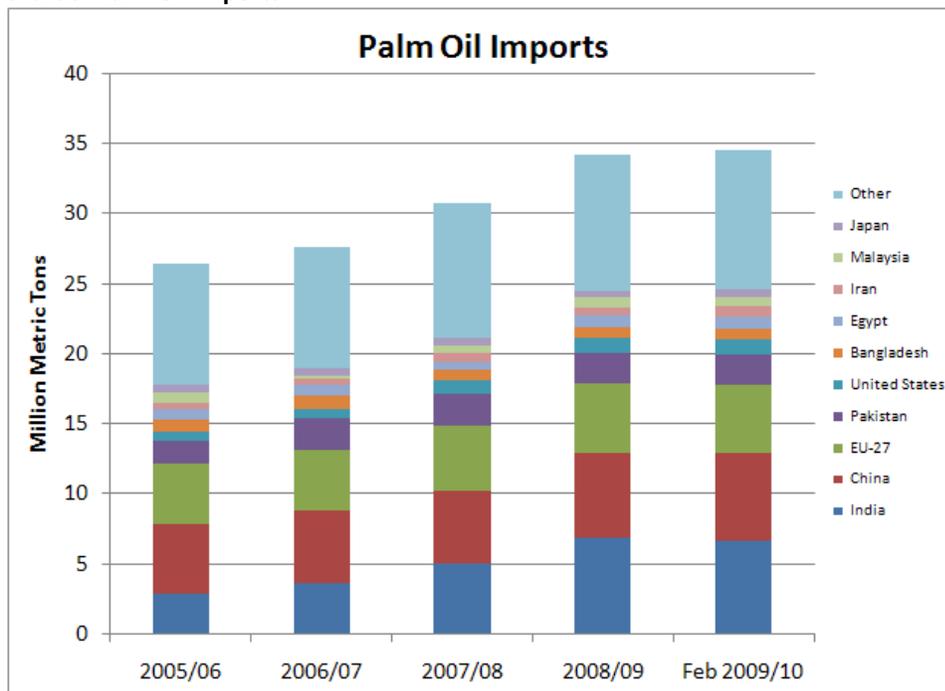
**Map 1: Indonesia Primary Palm Production Areas**



## Imports

The three largest importing countries are India, China and the EU-27 which through July imported 8.2 MMT (22 percent), 7.2 MMT (19 percent) and 5.3 MMT (14 percent) respectively. India and China primarily use palm oil for cooking while the EU-27 imports palm oil for bio-fuels production. All other countries import less than 3 percent, with the exception of Pakistan which has imported a little more than 2.3 MMT (7 percent) for the year. Chart 3 shows imports dating back to 2005.

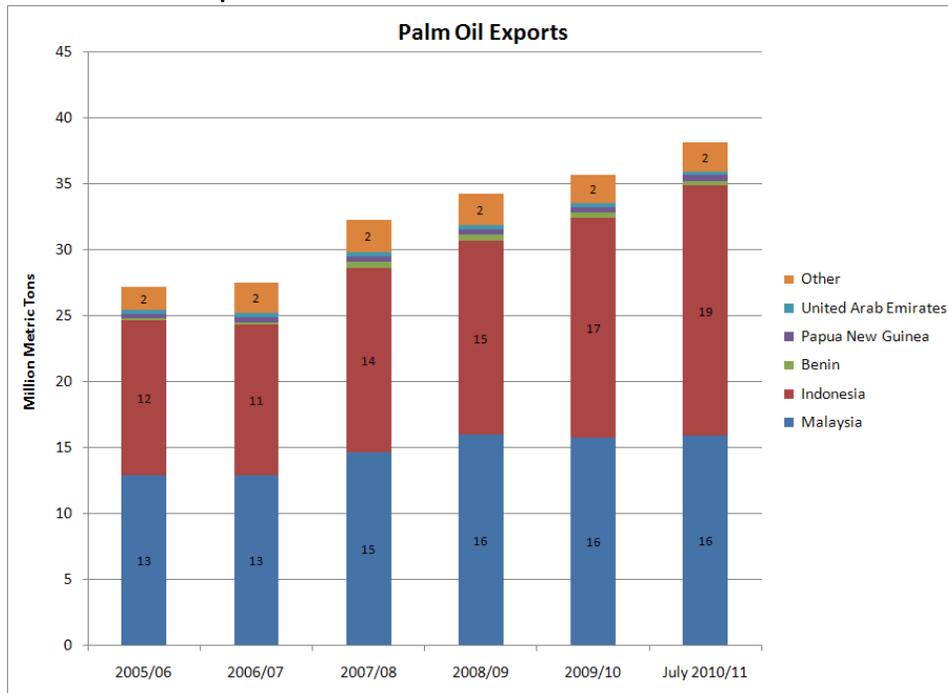
**Chart 3: Palm Oil Imports**



## Exports

Malaysia and Indonesia are the two largest exporting countries of palm oil accounting for 89 percent of world exports. In 2009-10, Malaysia exported 15.9 MMT (42 percent), while Indonesia exported 19.0 MMT (50 percent). The only other notable exporters are Benin, Papua New Guinea and United Arab Emirates, which each export under 1 percent. Chart 4 shows palm oil exports for the past five years.

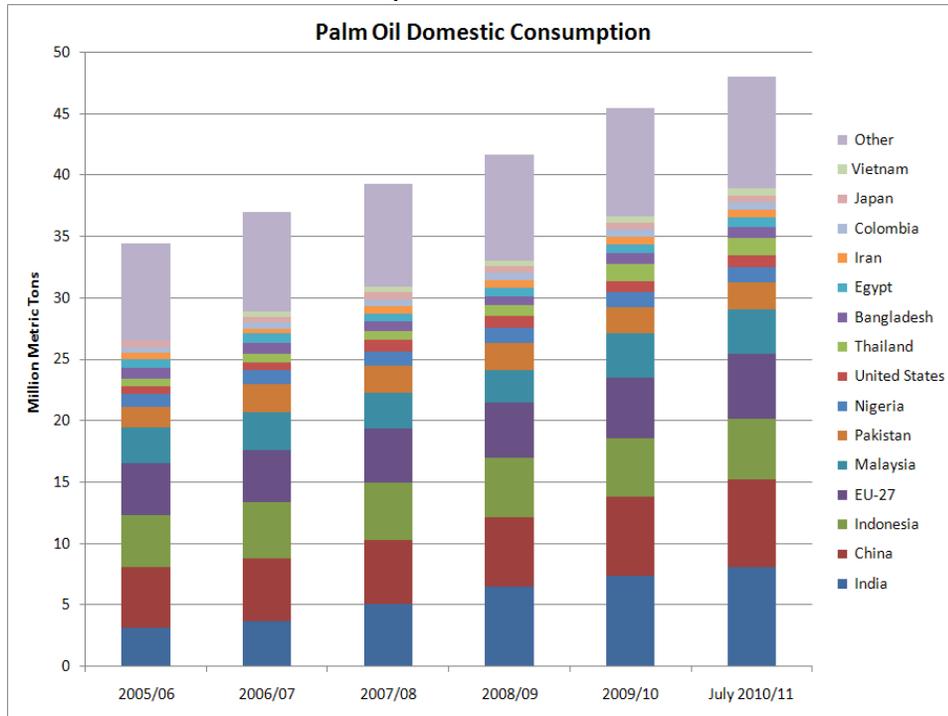
Chart 4: Palm Oil Exports



## Domestic Consumption

As previously noted, China and India are the largest importers of palm oil, and as a result, they are also the top two consumers. India has consumed 8.1 MMT (17 percent) and China 7.2 MMT (15 percent) so far this year. Also, Indonesia and the EU-27 have each consumed roughly 11 percent of world production for the year. Chart 5 gives a breakdown of each country's consumption from 2005.

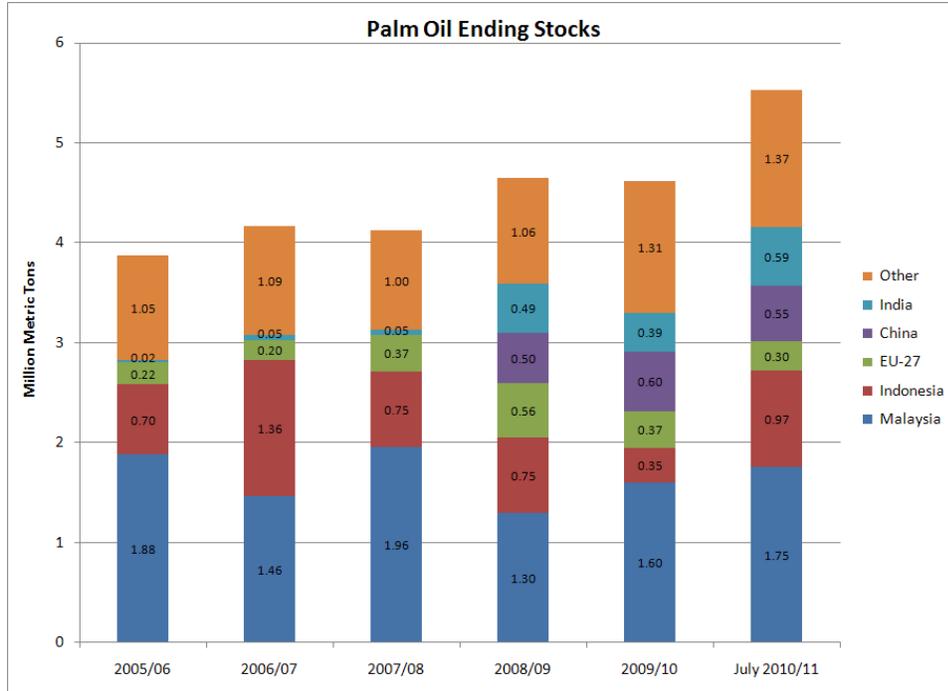
**Chart 5: Domestic Palm Oil Consumption**



**Ending Stocks**

Malaysia continues to carry the largest ending stocks of all producing countries. Currently it is carrying 1.8 MMT which accounts for 32 percent of the world’s ending stocks. Indonesia is the next largest holder of palm oil stocks, with 1.0 MMT (17 percent). The world stocks-to-use ratio has remained constant at 11 percent over the past six years as growth in stocks has been matched by growth in demand. Chart 6 shows ending stocks from 2005.

**Chart 6: Palm Oil Ending Stocks**

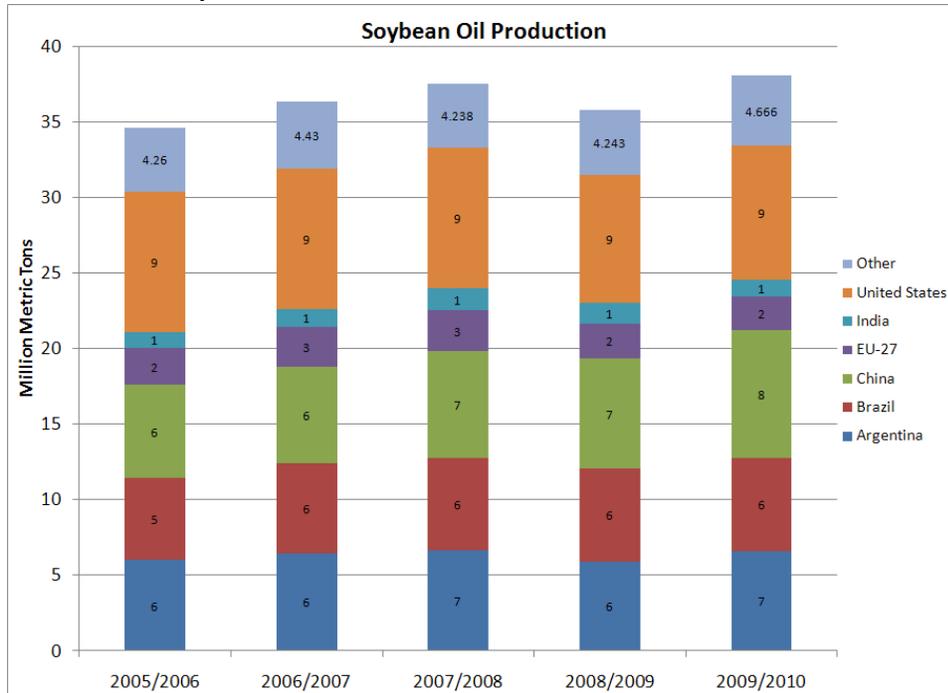


## Soybean Oil Fundamentals

### Production

Currently, the United States is the largest producer of soybean oil as it accounts for a little more than 23 percent of the world’s production. However, U.S. production has remained steady over the last decade, while China’s production has increased rapidly and now accounts for 22 percent of the world market. South America production is also growing quickly, with Argentina and Brazil each accounting for 16 to 17 percent of the world production; it is expected that these two nations will continue to increase their processing capacity. Chart 7 shows the World Soybean Oil Production from 2005.

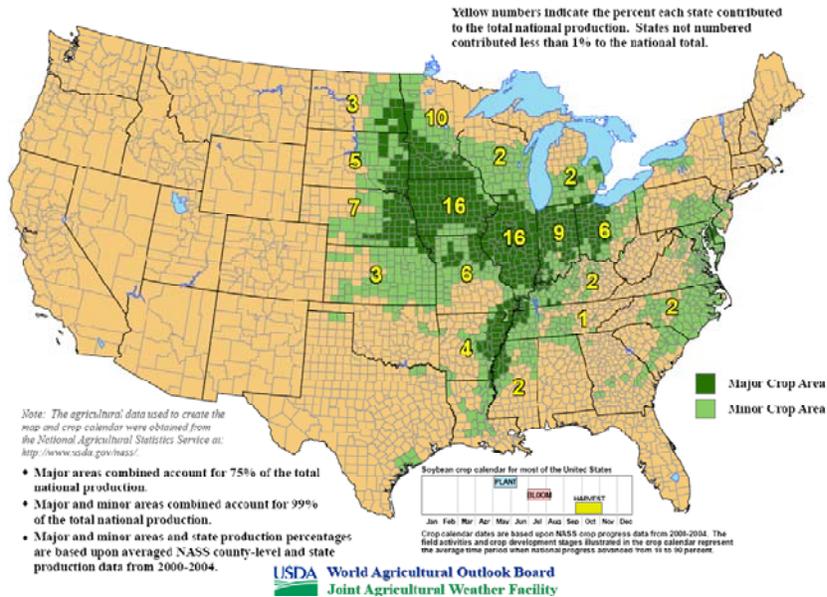
**Chart 7: World Soybean Oil Production**



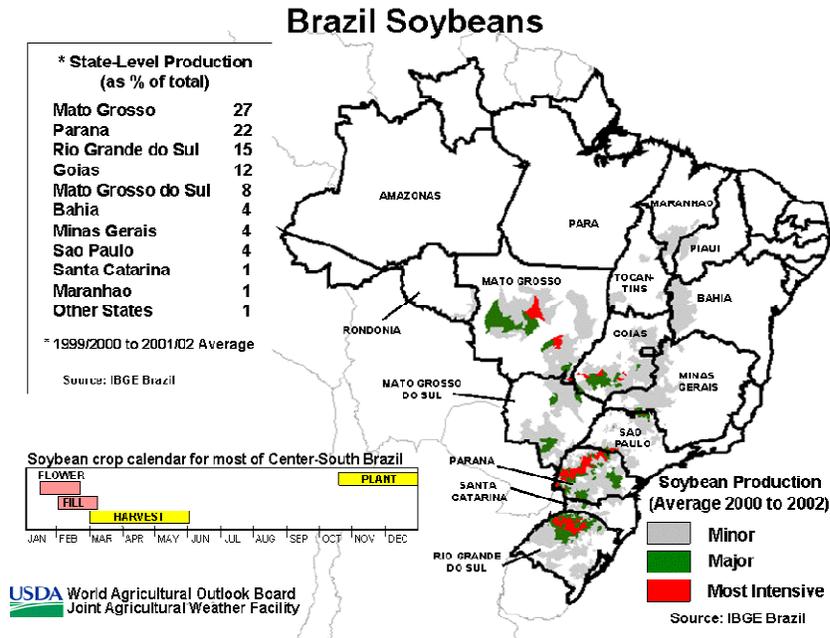
Source: USDA

Maps 2 through 2 show the major soybean growing regions around the world.

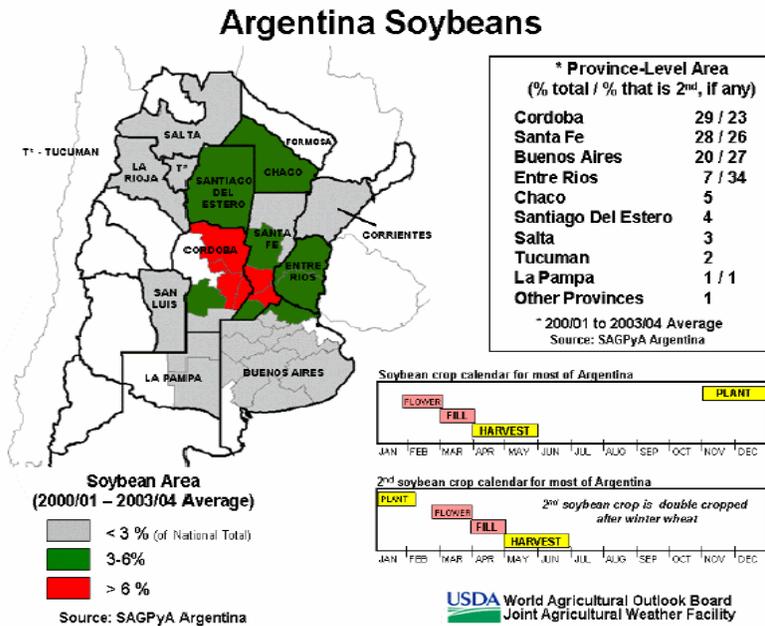
**Map 2: U.S. Soybean Production**



Map 3: Brazil Soybean Production



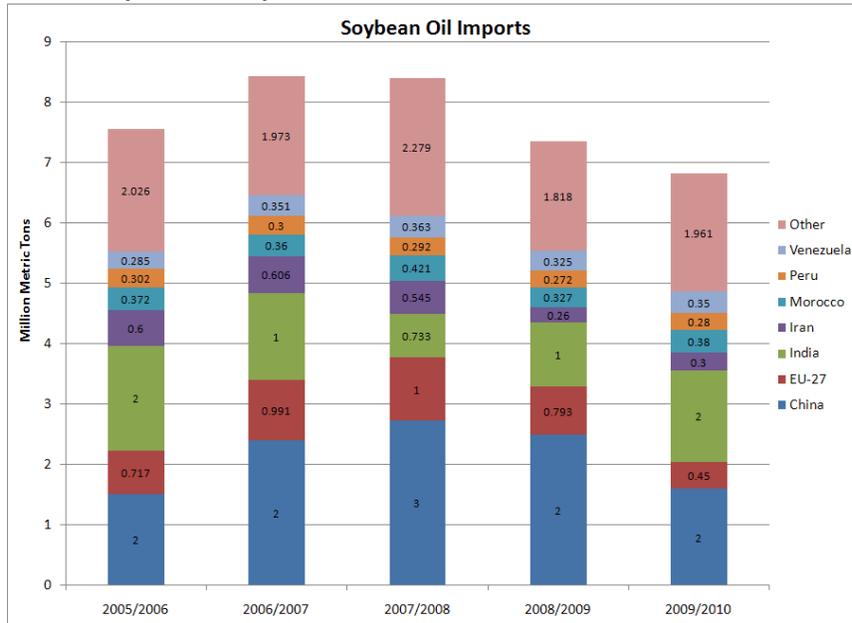
Map 4: Argentina Soybean Production



## Imports

China and India are the two largest importers of soybean oil. Currently, each country imports over 1.5 MMT a year, accounting for over 45 percent of the world imports. The EU's imports have declined as rapeseed and crude palm oil tend to be more preferred. Chart 8 shows soybean oil imports since 2005.

**Chart 8: Soybean Oil Imports**

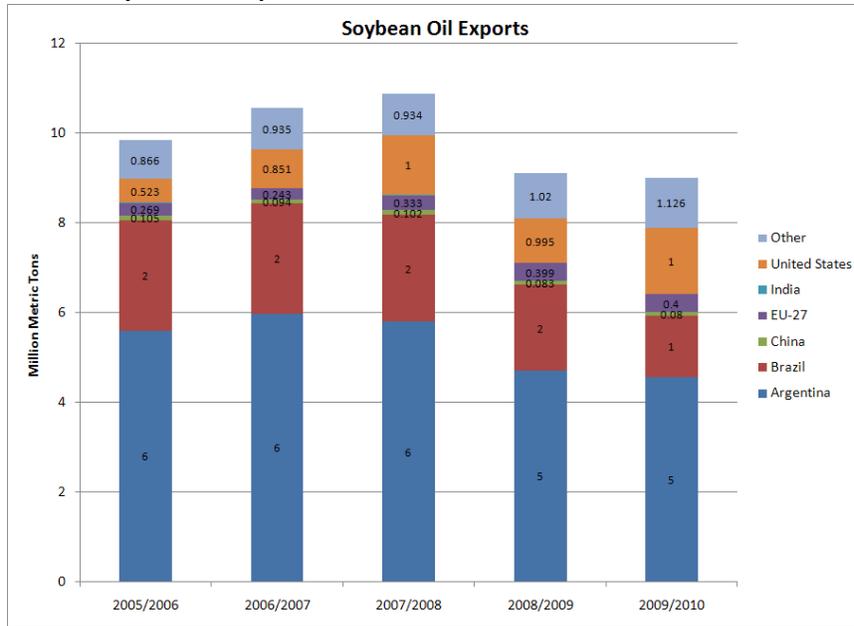


Source: USDA

## Exports

South America is by far the largest exporter of soybean oil. Argentina exports a little over 4.5 MMT per year which accounts for 50 percent of the world's exports. Brazil is the third largest exporter at 1.4 MMT. Combined, these two countries export over 65 percent of the world's soybean oil. The U.S. was the second largest exporter in 2009-10 at 1.5 MMT, representing 16 percent of total exports. Chart 9 shows world soybean oil exports from 2005.

**Chart 9: Soybean Oil Exports**

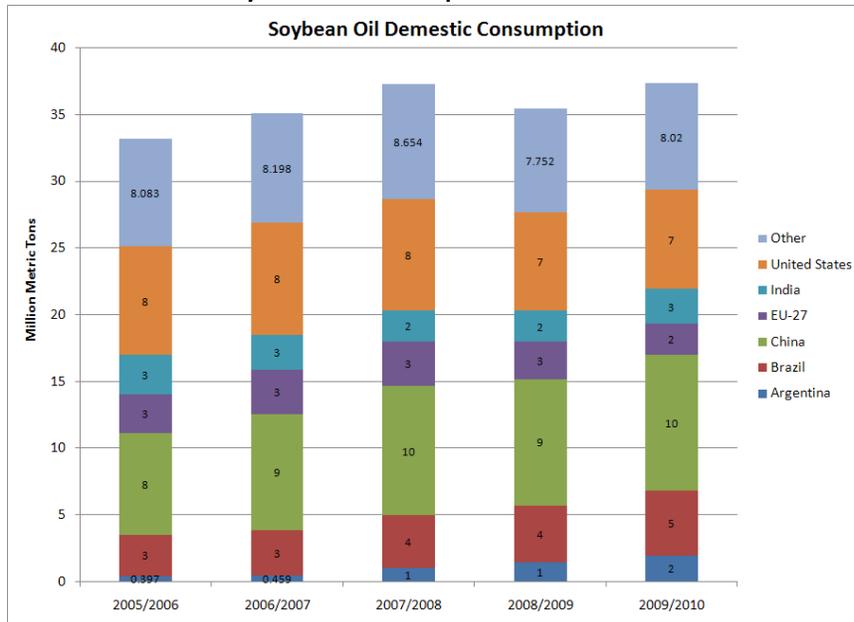


Source: USDA

**Domestic Consumption**

China and the U.S. are the two largest consumers of soybean oil. Between the two countries they consume almost half of the world's production. China used just over 10 MMT which is roughly 27 percent of world consumption. The U.S. consumed 7.4 MMT, which is a little less than 20 percent. Brazil is the third largest consumer using almost 5 MMT, representing 13 percent of total world domestic consumption. Chart 10 shows domestic soybean oil consumption since 2005.

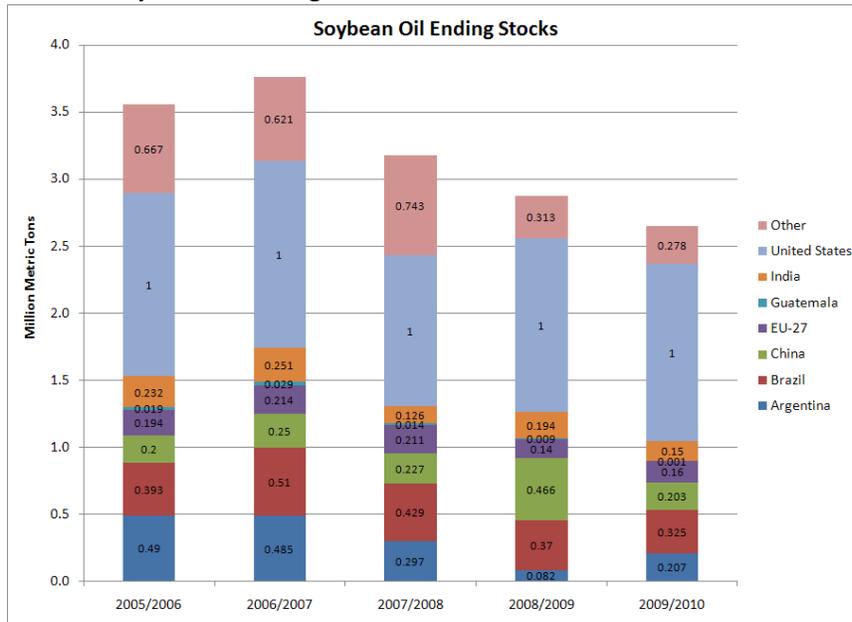
**Chart 10: Domestic Soybean Oil Consumption**



## Ending Stocks

The U.S. carries the largest ending stocks of all producing countries. In fact, the U.S. holds almost 50 percent of the world's ending stocks of soybean oil. On average, over the past five years, the U.S. has kept 1.3 million metric tons of soybean oil in ending stocks. Brazil holds the second largest stocks, averaging 0.3 million metric tons, which is a little more than 12 percent of the world's ending stocks. Chart 11 shows soybean oil ending stocks since 2005.

**Chart 11: Soybean Oil Ending Stocks**

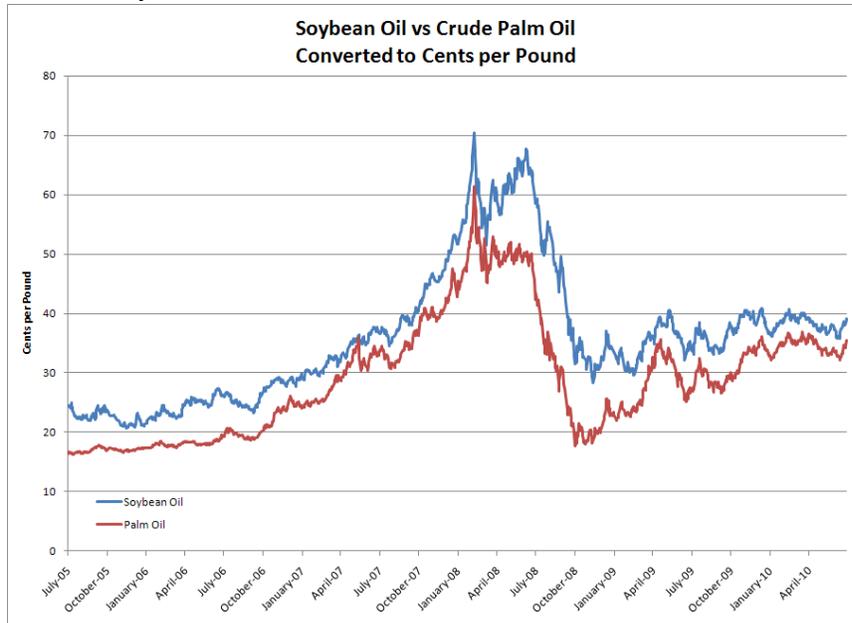


## Fundamental Price Drivers

Over the past decade the primary driver for soybean oil and palm oil price direction has been the strong growth demand. World population and GDP grew at a rapid pace prior to the global recession of 2008-09, leading to increased demand for food and the use of both oils as feedstocks for biofuel production. This created a new source of demand for both oils. However, the cyclical nature of crop production often results in a lag in supply for short periods of time. We have seen this in the past five years with all commodity products, due to the exponential growth in demand from China.

Chart 12 is a historical chart of soybean oil futures prices versus crude palm oil futures prices that have been converted to cents per pound.

**Chart 12: Soybean Oil Futures vs. Crude Palm Oil Futures**



Source: CME Group and Bursa Malaysia Derivatives Bhd

Weather also plays a pivotal role in price direction. Most of the palm growing areas are located in rainforests, where wet weather is the norm. However, frequent cyclones that move through those areas can bring excessive rain, resulting in flooding of palm plantations. On the flip side to this are the periods of excessive dryness in the plantation areas that can stress the palm trees. With most growing plantations near coastal areas, many can be affected by prolonged dry conditions created by *El Nino* weather effects.

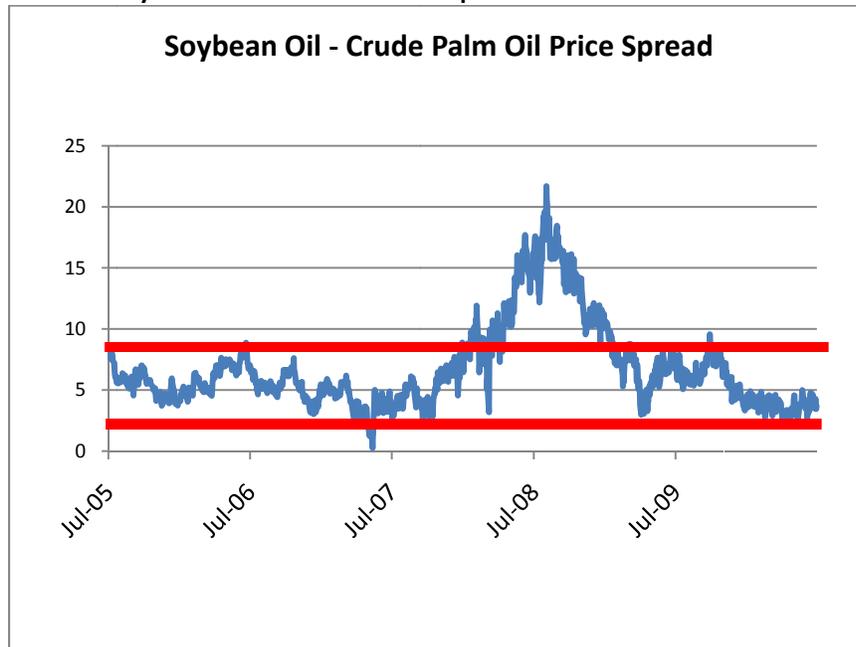
For soybean oil, pricing economics and weather tend to be the key drivers in overall production. As with palm oil, soybean oil prices are primarily determined by supply and demand, with supply often dependent on competing crops such as corn, wheat, rice and cotton. Depending on the corn/soybean price ratio, producers in many growing areas can easily switch acreage between these two crops.

Finally, exchange rate exposure has become a key factor in the demand for both of these edible oil products. With today's commodity markets becoming more and more globally conscious, traders look for the most economical product to purchase. If the currency in a particular country gets too high you will see demand shift to other countries with cheaper currency. Conversely, if a country has a strong currency they will likely consume more from other countries as they can buy these products at a cheaper cost.

## Spread Pricing

Chart 13 shows the historical price spread between soybean oil and crude palm oil.

**Chart 13: Soybean Oil vs Crude Palm Oil Spread**



Source: CME Group and Bursa Malaysia Berhad

The respective oil market fundamentals and currency exchange rates drive the price spread, with palm oil prices historically at a discount to soybean oil. The discount is consistent with the lower quality characteristics of palm versus soybean oil, and most other vegetable oils as well. Palm oil typically sets a price floor. Since July of 2005, the discount between soybean and palm oil futures prices (adjusted to cents per pounds) has been as wide as \$.217 per pound and as narrow as \$.0024 per pound.

The supply and demand dynamics between soybean oil and palm oil can substantially vary over time, driving the spread wider or narrower based upon which oil is more scarce or abundant. Factors such as production expectations, usually associated with weather, may directly affect the spread over time. Product substitution due to nutritional factors can also surface. A recent example of this is the incorporation of palm versus soybean oil in U.S. food product formulations in response to a move away from higher trans-fat oils. USDA Supply and Demand reports and Malaysian Palm Oil Council production and trade reports provide periodic information that traders watch as it may impact the market.

### Additional Resources:

USDA Production Reports  
[www.usda.gov/oce/commodity/wasde](http://www.usda.gov/oce/commodity/wasde)

Malaysian Palm Oil Board  
<http://www.mpob.gov.my>

***If you have questions, please contact:***  
John D. Hill, Economist  
Commodity Research & Product Development  
(312) 930-1852, [john.hill@cmegroup.com](mailto:john.hill@cmegroup.com)

## Contract Specifications: Crude Palm Oil vs. Soybean Oil Futures

	<b>U.S. Dollar Cash Settled Palm Oil</b>	<b>Soybean Oil</b>
<b>Trading Unit</b>	25 metric tons	60,000 pounds (lbs) (~ 27 metric tons)
<b>Underlying Instrument</b>	Bursa Malaysia Derivatives Berhad Crude Palm Oil Futures (FCPO)	Crude soybean oil meeting exchange-approved grades and standards-see exchange Rules and Regulations for exact specifications.
<b>Price Basis</b>	U.S dollars and cents per metric ton	Cents per pound
<b>Tick Size</b>	USD \$0.25 per metric ton	1/100 of a cent (\$0.0001) per pound (\$6.00 per contract)
<b>Daily Price Limits</b>	There shall be no trading in \$CSCPO futures at a price more than 10% above or below the previous day's settlement price, unless the corresponding FCPO contract is trading at expanded limits. If this were to be the case, the \$CSCPO contract would trade at the expanded limits as well.	2.5 cents per pound expandable to 3.5 cents per pound and then to 5.5 cents per pound when the market closes at limit bid or limit offer. There shall be no price limits on the current month contract on or after the second business day preceding the first day of the delivery month.
<b>Contract Months</b>	Monthly (list the third, fourth and fifth forward months) then alternate months going out 24 months.	January (F), March (H), May (K), July (N), August (Q), September (U), October (V) & December (Z)
<b>Last Trading Day</b>	Noon on the 15 <sup>th</sup> calendar day two months prior to becoming the delivery month. For example, the July 2010 contract would expire at noon on May 14, 2010. If the 15 <sup>th</sup> is a non-market day, the contract will settle on the preceding business day.	The business day prior to the 15th calendar day of the contract month.
<b>Daily Settlement Price</b>	Same procedure as all other agricultural products outlined in Rule 813 (VWAP of the last 5 minutes of trade, failing this, the VWAP of the last 15 minutes. If a VWAP cannot be calculated we will take the midpoint of the bid-ask spread at 1:15 pm CST)	Same procedure as all other agricultural products outlined in Rule 813.

	<b>U.S. Dollar Cash Settled Palm Oil</b>	<b>Soybean Oil</b>
<b>Final Settlement Price</b>	The contract will be cash settled. Final settlement value shall be the average price of the corresponding FCPO contract during the last five trading days “two months prior to becoming the delivery month”. The settlement price will be converted to USD and rounded to the nearest \$0.25 using the Association of Banks in Singapore’s Non-Deliverable Forward 11:00 am (Singapore time) MYR spot price.	Physical Delivery
<b>Spec. Position Limits</b>	500 contracts net long or net short for the spot month. 1,000 contracts for any single contract month except for the spot month. 1,000 contracts for all contract months combined	540 contracts net long or net short for the spot month. 5,000 contracts for any single contract month except for the spot month. 6,500 contracts for all contract months combined
<b>Reportable Limits</b>	25 contracts	200 contracts
<b>Trading Hours</b>	5:00 pm to 4:00 pm Chicago time Sunday to Friday	CME Globex (Electronic Platform) 6:00 pm - 7:15 am and 9:30 am - 1:15 pm Central Time, Sunday - Friday  Open Outcry (Trading Floor) 9:30 am - 1:15 pm, Central Time, Monday - Friday
<b>Exchange Rule</b>	Crude Palm Oil futures are listed with and subject to the rules and regulations of the CME	Soybean Oil futures are listed with and subject to the rules and regulations of the CBOT

**For more information on Crude Palm Oil futures, visit [www.cmegroup.com/palmoil](http://www.cmegroup.com/palmoil)**



## **Sources**

Charts of Edible Oil, Palm Oil and Soybean Oil Production, Consumption, Import/Export and Ending Stocks: USDA

Maps: As indicated

Futures trading is not suitable for all investors, and involves the risk of loss. Futures are a leveraged investment, and because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for a futures position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles. And only a portion of those funds should be devoted to any one trade because they cannot expect to profit on every trade. All references to options refer to options on futures.

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