

## Are Mexican Tortilla Prices Affected by U.S. Yellow Corn Prices?

In recent months, numerous media reports have suggested higher yellow corn prices and increased ethanol production in the United States are driving tortilla prices higher in Mexico. It's easy to see how an isolated view of the circumstances might lead to the conclusion that U.S. yellow corn prices and Mexican tortilla prices are fundamentally linked. However, a broader view of the situation reveals numerous other political and market nuances are at play. A longstanding statistics maxim suggests "correlation does not imply causation." In this case, while the timing of the increases in U.S. yellow corn prices and Mexican tortilla prices appear well correlated, higher U.S. corn prices should not be interpreted as the sole cause of inflation in Mexican tortilla prices. A truly holistic approach to the issue demands consideration of several important facts, most of which have not been reported in media coverage of this situation.

**Mexican tortillas are principally made from Mexican-raised white corn.** White corn typically accounts for less than 1 percent of corn production in the United States, with yellow corn constituting the bulk of U.S. production. In 2005, U.S. corn producers planted approximately 700,000 acres to white corn, equating to less than 1 percent of the 81.8 million corn acres. The United States is the world's largest yellow corn producer, but typically produces less than 5 percent of the world supply of white corn. The United States exports approximately 25-30 percent of its white corn to countries in Africa, Asia, and South and Central America. U.S. white corn exports have often helped offset shortages in those markets.

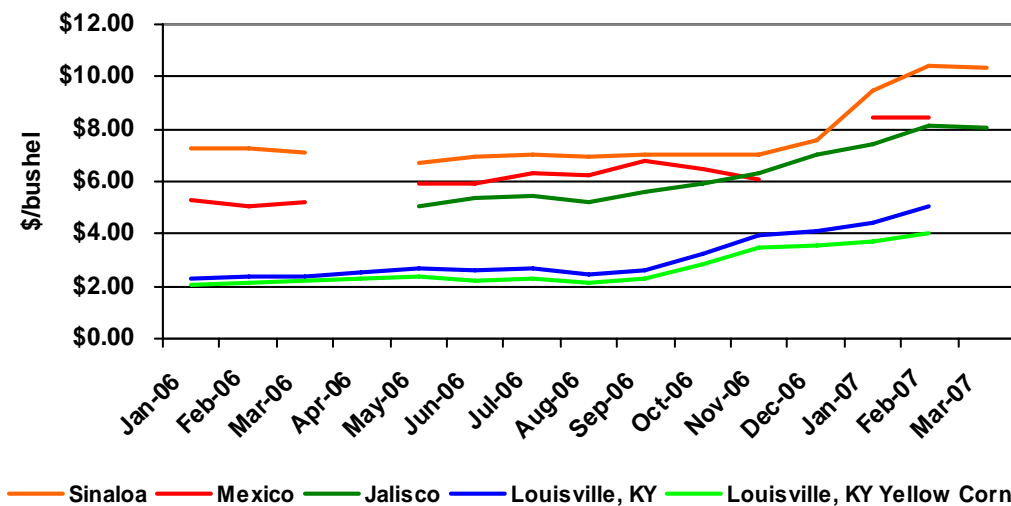
**White corn for direct human consumption is the primary variety grown in Mexico.** White corn dominates production in Mexico. The country typically plants 19-22 million acres to corn annually, the overwhelming majority of which is white corn. White corn is used in tortilla production because its soft starch is easily ground into meal. The processing of tortillas is fragmented and dispersed around Mexico, with 45,000 tortilla producers and 10,000 corn millers.

**Ethanol is made from yellow corn—not white corn.** Though uncommon, there is some substitutability between yellow and white corn in food and feed markets. Food-grade yellow corn is used to make corn flakes, chips, beer, and other foods, and white corn can be used as animal feed. However, the U.S. ethanol industry uses only yellow corn for biofuels production.

**The United States exports very little white corn to Mexico because of existing over-quota import tariffs.** Because of trade policies that discourage Mexican importation of significant volumes of white corn, the country's tortilla producers cannot rely on white corn imports to offset domestic shortages caused by drought. The United States exports a significant amount of yellow corn to Mexico for use in the country's feed and industrial processing markets, but white corn constituted just 2 percent of total U.S. corn exports to Mexico in 2006. The North American Free Trade Agreement (NAFTA) established quotas on the amount of white corn that can be imported by Mexico. In the last three years, over-quota white corn imports have been subject to steep import tariff rates (72.6 percent in 2004, 54.5 percent in 2005, and 36.3 percent in 2006). According to the USDA Foreign Agricultural Service, the over-quota import tariff "will apply to white corn, even in the case of a shortage." In response to tight domestic supplies of white corn, Mexico President Felipe Calderon in January raised the quota for white corn imports. Since the over-quota tariff specified by NAFTA is gradually declining to zero, trade may increase markedly once this tariff falls to a level sufficient to make over-quota tariff economical.

While prices for white corn do tend to track yellow corn prices in the United States, white and yellow corn world markets adhere to separate supply-demand curves and are influenced by independent market drivers and trade policies. U.S. yellow corn prices increased in the last quarter of 2006 due to heightened demand for exports and ethanol production. Because U.S. white corn typically trades at a 30-60 cent/bushel premium to yellow corn, white corn prices in the United States increased in tandem with yellow corn prices. Though increasing world yellow corn prices may have had a minor influence on white corn prices in Mexico, a more significant price driver is the fact that Mexican white corn supplies were diminished in 2006 due to drought conditions. Reduced production decreased Mexican stocks, resulting in higher corn prices for tortilla producers. The chart below shows that white corn prices in three corn-producing Mexican states (Sinaloa, Mexico and Jalisco) have been consistently \$3/bushel higher or more than white corn prices in the U.S. reference market of Louisville, KY. This proves that white corn has a distinctly different value curve in Mexican and U.S. markets and prices respond to different drivers. The chart also shows that Mexican white corn prices didn't begin to spike dramatically until December '06 or January '07, several months after U.S. prices began to increase. Additionally, erratic white corn production in South Africa plays a major role in global supply-demand cycles.

**White Corn Prices, U.S. & Mexico**



Sources: Sistema Nacional de Informacion e Integracion de Mercados, and USDA, AMS

The Mexican government offers a number of farm programs to the country's farmers to encourage domestic white corn production. In 2005, farmers raising spring and summer crops received a flat rate payment of 963 pesos/hectare (~\$37/acre). Smaller farms (1-5 hectares) received slightly higher payments. Additionally, the Mexican government paid \$88.5 million in Complementary Income Support (CIS) on 3,100,000 metric tons of white corn in 2005. By comparison, the government paid \$6 million in CIS for 142,000 metric tons of yellow corn.

Global production of both white and yellow corn are expected to increase significantly in 2007. In keeping with the basic principles of economic theory, white corn growers in Central and South America are responding to tighter stocks of white corn in Mexico and higher prices by increasing white corn supplies. Brazil and Argentina, the Western Hemisphere's biggest corn exporters after the U.S., are expecting near-record harvests in 2007, according to a recent Associated Press report. And in response to increased white corn demand, Mexican farmers plan to expand corn acreage by 20 percent from 21 million acres to 25.3 million acres this year, according to the National Confederation of Mexican Corn Growers.

For more information, contact the National Corn Growers Association at (636) 733-9004