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Iowa and Mexico: The corn connection

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Iowa and Mexico have some obvious differences: climate, land resources, and language, for example. But what do Mexico and Iowa have in common? The answer is a long and important relationship to corn.

Central Mexico was probably the birthplace of the corn plant, as it evolved from pre-historic plants such as *teocinte* and others. When the Spaniards arrived they found that the Mayan and Aztec nations depended on corn as a staple in their diet, even though the crop was unknown in Europe at that time. Corn was deeply ingrained in the religious life of the Aztecs, and was represented by an important deity named Centeotl. Corn is still an important part of the Mexican diet. It is found in traditional foods such as tamales, tortillas, and enchiladas as well as in snack foods such as corn chips and corn flakes.

Corn production in Mexico

Why does all this matter? As we observe the 10th anniversary of the North American Free Trade Agreement (NAFTA), which includes the United States, Mexico and Canada, trading of corn and other agricultural products has become an important and sometimes controversial topic. Canada and Mexico are now the first and second leading buyers of U. S. farm products.

This spring a group of Iowa State University students traveled to Mexico to learn first hand about our southern neighbor. Instructors for the class were William Edwards and Sergio Lence, professors of agricultural economics at ISU. The group was hosted by the Autonomous University of Chapingo, Mexico’s largest public agricultural university. Over 7,000 students study all aspects of agriculture there. Tuition depends on family income. Many of the students come from poor villages and pay nothing at all to study. However, the entrance exams are rigorous.

Years ago much of the land around Mexico City was planted to corn. Some of it was grown on small islands and irrigated from canals originally built by the Aztecs. Today much of this land has been taken over by houses, streets and businesses. Land that is still cultivated has been shifted to other crops. Where water is available, intensive horticultural production helps supply some of Mexico City's 20 million people with fresh vegetables. Farther from the city, the dry hills are planted to *nopal*, a type of cactus that is a staple in the diets of many Mexicans. The leaves can be boiled or steamed, and the fruit can be made into preserves, salsa and other products. The class visited the office of Espina de Oro, a small cooperative of *nopal* producers who are looking for markets for innovative products such as marmalade and salsa.

Overall, the area planted to corn in Mexico peaked in 1994, and has decreased by 10 percent since then. Interestingly, yields have increased enough to offset the smaller area, and total production has stayed nearly constant. Price controls on corn and corn products have been lifted. The farm level price of corn has dropped, while the cost of corn products such as tortillas has risen. This has caused considerable dissatisfaction for both producers and consumers.

In eastern and southern Mexico, researchers and extension specialists are searching for alternative crops to corn. Possibilities include avocados, kiwi fruit, macadamia nuts, and other perennials. However, many of these crops take several years to become established. Moreover, they are less labor intensive than corn. In one village that the students visited, a high percentage of the young men had left and gone to the U.S. to work, because they could not find profitable employment in the region.

Most of these changes are occurring in the less productive southern states, where corn has

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traditionally been raised for family consumption first and for the market second. Yields in the states of Chiapas and Guerrero, for example, averaged about 27 bushels per acre in 2003, compared to 143 bushels per acre in the northern state of Sinaloa, where irrigation is available.

Exports have increased
Exports of corn from the United States to Mexico have doubled since the implementation of NAFTA. The U.S. sold 5.6 million metric tons of corn to Mexico in 2003, 13 percent of total U.S. corn exports. Most of that was yellow corn, which was used for livestock feed. As a result of higher personal incomes, consumption of meat in Mexico have increased substantially over the last decade, and Mexican livestock producers have expanded their herds.

Iowa manufacturing businesses are also hoping to cash in on the lower trade barriers. The ISU students visited with Jose Antonio Jimenez of Trade Management Services, a consulting company that works with the Iowa Department of Economic Development to find markets for Iowa products in Mexico.

A highlight of the trip was a visit to CIMMYT, the International Maize and Wheat Improvement Center. Since 1966 scientists at CIMMYT have successfully bred more productive and resistant corn and wheat varieties that have been adopted around the world. Their germ plasm preservation facility has samples of over 30,000 strains of corn. And, to top it off, Iowa native and Nobel Prize laureate Dr. Norman Borlaug gave the students a warm welcome and a brief history of CIMMYT's role in alleviating world hunger.

Besides touring Mexico for a week, the students prepared research reports on such diverse products as sugar, coffee, corn and strawberries, and on various aspects of U.S. and Mexico trade relations. For copies of their papers and other information, visit the class Web page at: