

Corn Talk News

RESEARCH UPDATE



CORN TALK NEWS
PENNSYLVANIA MASTER CORN GROWERS ASSOC., INC.

period. The researchers were able to show no difference among hybrids from the different eras for root damage. This indicates there was no antibiosis, or differences in resistance to corn rootworm feeding among the hybrids.

They also measured the root pull resistance, which is a measure of the rooting strength of the plants, and the lodging of the plants. They found that the root pull resistance under rootworm pressure has been increasing in the newer corn hybrids. The 1980s corn hybrids also had considerably less lodging than the 1970s and 1960s hybrids. This was particularly true at higher plant populations, where the 1960s hybrids had more than twice the lodging of the 1970s and 1980s hybrids.

Based on the results of this study, it appears that most of the rootworm tolerance present in modern corn hybrids is associated with larger root systems and reduced plant lodging. According to the authors, there appears to be little potential that resistance to corn rootworm feeding (antibiosis) occurs in commercial corn hybrids. Apparently, this resistance exists in exotic corn germplasm, but recent surveys have indicated that little exotic germplasm has been incorporated into commercial hybrids.

don't rate hybrids for rootworm tolerance, we do know that some subtle differences exist.

A recent study published in Crop Science measured some of the progress that corn breeders have made since the 1960s in improving hybrid tolerance to feeding from the western corn rootworm. The study was conducted by Walter Riedell and Paul Evenson and was a joint project between USDA-ARS and South Dakota State University.

In this study, researchers evaluated corn hybrids from the 1960s, the 1970s, and the 1980s under three different corn rootworm infestation levels: none, 2,200 eggs/meter of row, and 6,600 eggs/meter of row. They also evaluated these treatments at 15, 20, or 30 thousand plants per acre. Studies were conducted during a two-year

CORN BREEDERS MAKE PROGRESS IN ROOTWORM TOLERANCE

Greg W. Roth
Penn State Agronomy
Assistant Professor

Occasionally, I have seen or had reports of subtle hybrid differences in tolerance to corn rootworm.

In one of our insecticide studies, for example, we found that yields of one hybrid were increased by 10 bushels per acre but another apparently overcame the damage and did not show any benefit to the insecticide treatment. This hybrid apparently had an increased level of tolerance to rootworm damage.

Although seed companies

Ill. Producer Observes NAFTA Impact

WASHINGTON, D.C. — "We saw first-hand how the North American Free Trade Agreement (NAFTA) will impact corn exports to Mexico," said Leland Behnken, upon returning from the U.S. Feed Grains Council's Market Assessment Mission.

Behnken represented the Illinois Corn Growers Association on the mission that traveled to Canada and Mexico to study opportunities to increase exports.

According to Behnken, "We also learned that Mexico's new domestic agricultural policies will create opportunities for increased corn exports to this growing market.

"Under the terms of NAFTA, U.S. corn producers will export 2.5 million metric tons (mmt) (98.5 million bushels) of corn to Mexico next year," Behnken said. "We learned that our corn will be used primarily in the wet milling and tortilla industries to provide food to the Mexican people."

Mexico's corn wet mill industry uses approximately 1 to 1.5 mmt (39.4 to 59.1 mbu) of imported corn and the tortilla industry about 1 mmt (39.4

mbu) annually.

"The feed industry will also use imported corn, but corn occupies almost a sacred place in Mexico's culture as a food grain, so this will take a little longer.

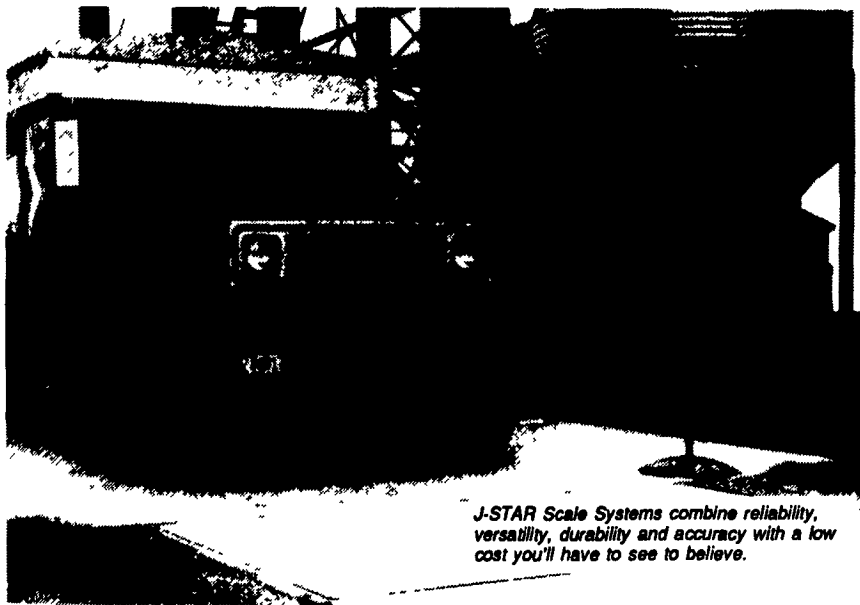
"Another major development is the revision of Mexico's domestic agricultural policy," Behnken said. "Mexico actually has a surplus of corn this year, due to policies that encouraged over production of corn at the expense of other crops, but PROCAMPO will take care of that."

PROCAMPO is Mexico's new agricultural policy that will pay producers based on the amount of owned acreage, not the amount or type of crop produced. Mexico's old agricultural policy paid producers double the world price for corn, encouraging its production at the expense of other crops.

"Now producers can plant the crops most suited to their land and climate, not those that receive the most government benefits," Behnken said. "PROCAMPO will also put some money in the small farmers pockets, and this is expected to spark rural development in Mexico."

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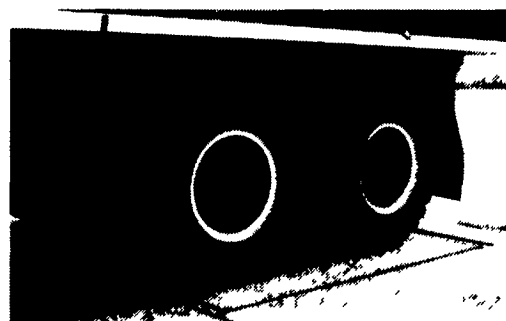
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