

Corn Talk News RESEARCH UPDATE



CORN TALK NEWS

PENNSYLVANIA MASTER CORN GROWERS ASSOC., INC.

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A common but surprising question I get is how well do open-pollinated varieties of corn perform compared to modern hybrids.

Interest in open-pollinated varieties stems from a number

of reasons:

- Low seed prices compared to hybrids
- The ability to replant the seed produced
- An independence from an off-farm supplier
- Perceived higher quality traits
- A nostalgic attraction to

historic germplasm.

Open-pollinated varieties of corn are the result of natural intercrossing of a population of genetically different plants. Varieties have been produced by selecting similar ears over the years and replanting the seed from these ears for the next generation.

Previous studies with open-pollinated corn at Penn State conducted by Dr. Joe McGahen in the 1980s indicated that yields of open-pollinated varieties were consistently about 50 bushels less than modern hybrids and had about 50 percent more lodging.

During 1992, we conducted two trials to evaluate the yield and forage quality of an open-pollinated variety compared to a modern hybrid. The open-pollinated variety, Superior Sil-

age Corn, was obtained from a Lancaster County corn grower who had purchased the seed corn from a mail-order advertisement. The hybrid was Pioneer brand 3241. At both locations, the hybrid was superior in nearly every measurement of performance. Averaged over both locations, the hybrid had 4.8 tons/acre higher silage yields and 60 percent lower lodging. Forage quality was also higher for the hybrid as evidenced by 0.5 percentage units higher protein levels, 8.7 percentage units lower ADF, and 5.1 percentage units higher in-vitro digestibility.

The open-pollinated variety also exhibited much more variability for standability, height, ear height, and maturity than we see in modern hybrids. As a result, there appeared to be little

reason to grow the open-pollinated variety for silage.

In 1993, we conducted a second study at one location to compare yield performance of three open-pollinated varieties to two standard hybrids. This study basically confirmed Dr. McGahen's earlier studies. The hybrids averaged 120 bushels per acre and had 9 percent lodging. The open-pollinated varieties averaged 63 bushels per acre with 35 percent lodging.

Although grain quality was not measured in this study, yield differences were so great that the net return would be greater with the hybrid, regardless of quality or seed cost.

Consequently, we see little evidence that would suggest growers consider growing open-pollinated varieties for commercial purposes. Silage yield, silage quality, and grain yield performance of open-pollinated lines appears to be inferior to modern hybrids.

We should note, however, that these open-pollinated lines continue to be sources of genetic variability for corn breeding programs.

Council Convinces Brazil To Buy U.S. Corn

WASHINGTON, D.C. — Through the trade servicing efforts of the U.S. Feed Grains Council (USFGC), Brazil will likely purchase at least 300,000 metric tons (11.8 million bushels (mbu)) of U.S. corn.

The Council saw an opportunity for corn sales to northern Brazil, where expanding poultry production and high transportation costs for Argentine corn have created a corn need. However, poultry industry representatives in Brazil expressed quality concerns about U.S. corn, so the Council arranged for a team of Brazilian poultry producers to visit U.S. corn export facilities.

After visiting with the Federal Grain Inspection Service, a loading facility, poultry production facility and feedmill, the Brazilian team was convinced of U.S. corn quality. The team members announced their intention to buy U.S. corn while in the United States. The corn will be imported through March 1994 when their own harvest comes in.

Brazil's U.S. corn purchase is particularly significant because it is the first major sale to Brazil since 1986. Although Argentine corn quality declines during the year, its premium price remains high. In contrast, U.S. corn prices are lower, and because the Brazilian government has reduced the tariff on U.S. corn to Brazil, the price per metric ton is highly competitive now. This sale is good news for U.S. corn suppliers, who once again have the chance to supply the 1.5 million metric ton (59.1 mbu) Brazilian market.

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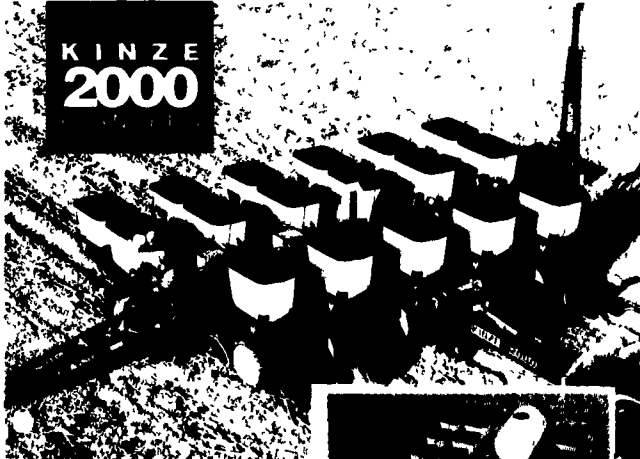
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