

Crops Conference Jan. 30

Corn Talk News

RESEARCH UPDATE



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

POPULATION EFFECTS OF DIFFERENT CORN HYBRIDS

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One of the major factors that has resulted in higher yields in corn has been the development of tolerance by modern hybrids to higher plant populations.

Since 1960, plant population recommendations have increased from an average of 15,000 plants per acre to 25,000 plants per acre or more. Consequently, we need to continue to be reevaluating the yield response to plant population.

A recent study was concluded at Ohio State by P. R. Thomison and D. M. Jordan on the effects of plant population on four corn hybrids that provides some insight

into how modern hybrids respond to plant population. The results were published recently in the Journal of Production Agriculture.

These researchers conducted a total of 11 experiments at seven locations in 1990 and 1991. In each experiment, four hybrids were evaluated at 16,000, 24,000, and 32,000 plants per acre. The four hybrids were characterized as a single ear flex hybrid, a single eared fixed hybrid, a semiproflific hybrid, and a prolific hybrid. Prolific hybrids tend to produce more than one ear per stalk.

The terms "fixed" and "flex" refer to the response of ear size to population. A fixed ear does not increase in size with a reduced population whereas a flex ear hybrid increases in size as the population decreases.

Grain yields in this study were generally good with 1990 sites yielding slightly more than those in 1991. In 1990, yields ranged from 148 to 180 bushels/acre while in 1991 yields ranged from 124 to 174 bushels/acre.

In 1990, grain yield was highest at the 32,000 population at five of the six sites. In

1991, yields were highest for the 32,000 population at only one site and highest for the 24,000 population at three sites.

In general, the yield response to the high populations was not as great under stress but yields did not decline appreciably at the high population.

Hybrid differences in prolificacy and ear growth habit had a relatively small effect on the response to increasing population. In 1990, the single-eared and semi-prolific hybrids required a higher population (32,000) than the prolific hybrid to achieve maximum yields, but this did not occur in 1991 when all hybrids achieved the highest yields at 24,000. Consequently, the researchers were unable to show a difference in the yield response to population between the fixed

and flex ear hybrids as might be expected.

Lodging was increased at the higher population and with the prolific and semiproflific hybrids. Increasing the population from 24,000 to 32,000 increased the lodging of the fixed and flex hybrids only about 1 to 2 percentage units averaged over all 11 sites. When populations were increased from 24,000 to 32,000, lodging was increased by more than 5 percent in only two of the eleven sites.

This study supports some of the plant population responses we have observed in Pennsylvania, such as: 1) higher populations (greater than 24000) will sometimes result in higher yields but often will not reduce yields, 2) yield responses to higher populations are most likely under low stress conditions, and 3) modern single-eared hybrids stand well even at high populations.

This study suggests there may be potential for increasing yields with populations higher than 24,000 on soils with reasonably good yield potential. On some of our droughty Pennsylvania soils with 100 bushel or less yield potential, increasing populations above 24,000 may not be appropriate.

CARLISLE (Cumberland Co.) — The Pennsylvania Crops Conference has been scheduled for Tuesday, Jan. 30, 1996 here at the Embers Inn and Convention Center.

This year's conference will include presentations from NCGA executive vice president Keith Heard from NCGA's Washington office describing the upcoming Farm Bill Legislation and the status of Full Farm Flexibility, a legislative initiative of NCGA.

Growers will also hear from growers and industry personnel who have had some of their first experiences with yield monitors this fall in the field.

Also on tap are presentations the use of options in grain marketing and the results of the Pennsylvania Five Acre Corn Club.

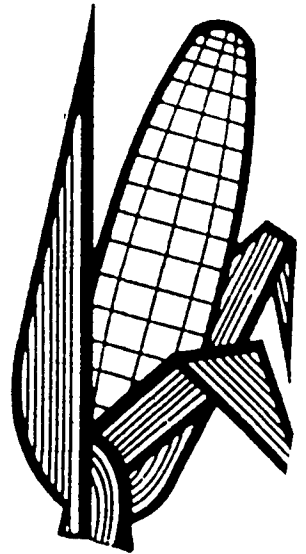
This year's conference will be cosponsored by the Pennsylvania Forage and Grassland Council (PFGC) and the Pennsylvania Soybean Promotion Board.

PFGC breakout sessions will focus on making the transition to grazing and ways to reduce the labor associated with forage harvesting. The Pennsylvania Soybean Promotion Board has

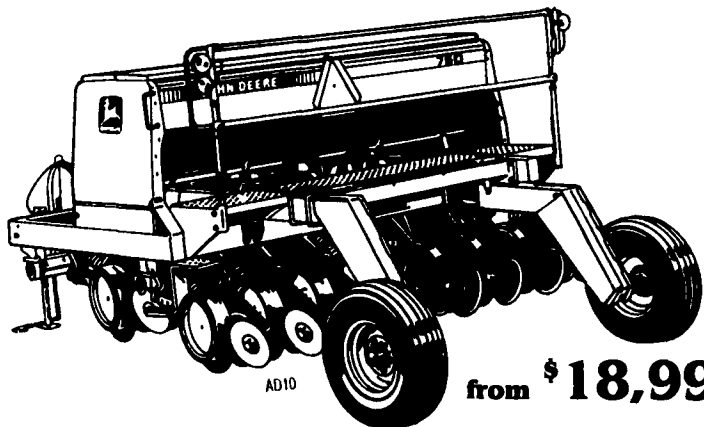
invited John Becherer, the CEO of the United Soybean Checkoff Board, who will discuss how the soybean checkoff funds are being used at the national level to develop new markets for soybeans.

If you are a serious grain or forage producer in Pennsylvania, you should mark your calendar and plan to attend this conference.

Registration information will be available soon at local extension offices or can be obtained from the Penn State Agronomy Department at (814) 865-2543.



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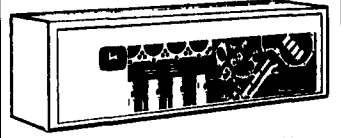
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