

#### **Optimum Plant Population For** Corn In Cecil County

In the wake of several droughts, the most recent occurring in 1993, there has been considerable research into identifying corn populations that will produce the most profitable yields.

Research conducted on sandy soils in Wicomico County suggests that in most years 20,000 plants per acre may be adequate for normal yields. Here in Cecil County which has predominantly silt loam soils, the optimum plant population may be somewhat higher. The trend in recent years by local farmers is to increase populations in an attempt to increase yields. Is this trend agronomically and economically justifiable and which

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populations give maximum economic yields?

The field chosen had Matapeake silt loam soil types. Four target seeding rates of 20,000, 24,000, 28,000, and 32,000 were selected to cover the range of com populations that have been planted in Cecil County. Pioneer 3163 com was planted on May 8, 1995 with a Case IH Cyclo Air corn planter. Plots consisted of six 30-inch rows and were 1,500 feet long by 15 feet wide. Treatments were replicated wice. The farmer's standard cultural practices were followed.

Actual plant populations were counted on June 14. Analysis of variance for popuation showed treatment means o be significantly different at he 0.05 probability level with

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in LSD of 2430 plants per acre. Plots were harvested on Sepember 29, 1995 with an International 1460 combine. Plot weights were measured with a weigh wagon and converted to bu/A at 15.5% moisture.

Table 1. Treatment means for plant population and corn yield. Actual Population (plt/A) Yield (bu/A) Seed Cost (\$/A)\* Treatment 21,222 20.000 137.2 23.87 24,000 23,445 138.6 26.38

28,000 27,667 139.3 31.13 32,000 133.5 35.75 31,778 LSD (0.05) 2430 N.S. Coefficient of Variation 2.91% 5.31%

\*Seed cost calculated using cost of \$90.00 per 80,000 seed unit and assuming 100% germination and emergence. Actual seed cost will vary depending on price of seed and germination and emergence.

Yields were analyzed by anaylsis of variance. No statistical differences were found at the 0.05 probability level. The trend observed shows yields rising slightly from the 21,222 plant population level, peaking at the 27,667 level, and falling sharply at the 31,778 plant population level. At corn grain prices of \$3.50 per bushel, a farmer would only be economically justified in increasing plant populations from 21,222 to 23,445 plants per acre.

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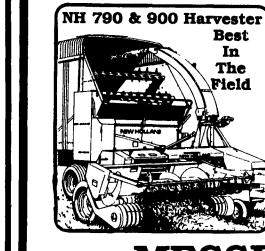
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