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
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Agriculture and Forestry

**Response of Popcorn (*Zea mays everta*) to Nitrogen Rates and Plant Densities**

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**Abstract:** The objective of this study was to evaluate grain yield and yield components of popcorn with different nitrogen rates and plant densities. Field studies were conducted in 1995 and 1996 at Kazova Plain in Tokat. The experiment was designed in a randomized-complete-block design with a split-plot arrangement with three replications. The treatments comprised six levels of nitrogen (0, 50, 100, 150, 200 and 250 kg N /ha) and four plant densities (5.7, 7.0, 9.5 and 14.0 plants /m<sup>2</sup>). Nitrogen rates were in the main plots, and planting densities were in the sub-plots. An open pollinated was used as the material in the experiment. In general, significant differences were determined in the investigated plant characteristics. Plant height tended to increase as the nitrogen rate increased. The tasseling period was reduced as the nitrogen level and sowing density increased. The maximum ear length was obtained from low planting densities (5.7 and 7.0 plants /m<sup>2</sup>). The number of kernels per ear was not affected by nitrogen application or population density. The 1000-grain weight increased with N application and decreasing plant density. Nitrogen application and plant densities had positive effects on the grain weight per ear. Nitrogen significantly increased the grain yield, but there were no significant differences in yield at the doses of 100, 150, 200 and 250 kg N /ha. The highest grain yield was obtained from 7.0 plants /m<sup>2</sup> when averaged over two years. Our findings indicate that, for maximum grain yield of popcorn, 100-150 kg N/ha should be applied, and the plant density should be 7.0 plants /m<sup>2</sup>.

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