



A STUDY ABOUT EFFECTS OF ROW SPACING AND PLANT DENSITY ON SILAGE YIELD AND MORPHOLOGICAL TRAITS OF CORN (SINGLE CROSS 704) IN ISFAHAN

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Introduction: Corn is one of the most important agronomical crops because of diversity, high adaption, and high nutritional value. Considering the necessity of increasing yield per area unit, appropriate density and inter row space can be useful to solve this problem.

Material and method: Therefore, this study was conducted in research site of Islamic Azad University (Isfahan Branch) in 2012. Experiment was arranged in strip plots in randomized complete blocks design with three replications. Vertical factor was inter row space (50, 60, and 75 cm) across blocks and horizontal factor was density (6, 8, 10, and 12 plants per square meter) along blocks.

Result and discussion: Results showed that density affected silage yield significantly and the highest fresh yield was obtained from 12 plants/m² density. Inter row space didn't have any significant effect on yield but 50cm space had the highest yield which was nine percent more than 75 cm distance. Plant height was not affected by density but inter row space affected it significantly and 60 cm space had the tallest plants. Density had significant effect on stem diameter and ear distance from ground but these traits were not affected by inter row space. The highest stem diameter was observed in 6 plants/m², and 12 plants/m² had the highest ear distance from ground. By increasing plant number per square meter and decreasing inter row space, there will be less light in lower canopy and plant organs will have more competition for light. On the other hand, light destruction of oxin will not be done which these factors will cause higher internode length, less stem diameter and taller plants (Tetio and gardner , 1988). Ear length and ear diameter were not affected by space but density affected them significantly. By increasing plant density, competition for absorbing photosynthetic active radiation has been more and consequently these traits have reduced.

Keywords: plant density, inter row space, morphological traits, silage yield



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