

EFFECTS OF PLANT DENSITY AND NITROGEN FERTILIZER DOSES ON MN585 HYBRID MAIZE (*ZEA mays* L.) GROWTH AND GRAINS YIELD IN DONG THAP PROVINCE

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Summary

With an aim to estimate effect of plant density and nitrogen (N) fertilizers doses on growth, tolerance to biotic and abiotic stresses and yield of MN585 hybrid maize in winter-spring 2016-2017 (WS) and summer-spring 2017 (SS) seasons in Thanh Binh district, Dong Thap province, two experiments were split-plot designed with three replications; the main plot including five N levels (160, 200, 240 and 280 kg N ha⁻¹) and subplots consisting of four densities (5.7, 7.1, 8.4 and 11.0 myriad plants ha⁻¹ in WS season and 5.7, 7.1, 9.5 and 14.3 myriad plants ha⁻¹ in SS crop). The phosphate and potassium doses were similarly all plots over two crops with amount of 90 kg P₂O₅ ha⁻¹ and 60 kg K₂O ha⁻¹, respectively. The area a plot was 21 m² (5 m x 4.2 m), six rows per plot, row to row space was 0.7 m. The results showed that increasing density decreased number of days from sowing-pollen shedding, sowing-silking, and maturity; reduced plant aspect and ear aspect; increased plant height, ear height, rate of stem borers and banded leaf spot blight; restrained ear length, number of kernel per ear and 1000-grains weight in either seasons. Increasing N rates delayed number of days from sowing - pollen shedding, sowing - silking and maturity; enhanced plant height, ear height, ear length and 1000-kernels weight; both low and high of N rates were reduced plant aspect, ear aspect, stay green and raised rate of the plants lodging, pests tolerance and reduced grains yield. The grain yield of MN585 was highest at 7.1 myriad ha⁻¹ and 200 kg N ha⁻¹ in WS 2016-2017 seasons, and at 7.1 myriad ha⁻¹ with 240 kg N ha⁻¹ in SS 2017 in Dong Thap province.

Keywords: *NPK nutrients, plants density, yield, MN585, maize hybrid, Thanh Binh, Đồng Tháp.*