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THE EFFECT OF THE CROP YEAR AND THE AGROTECHNICAL FACTORS ON THE YIELD STABILITY OF MAIZE

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Abstract. *In our research we examined the effect of the hybrid, the nutrient supply, the number of plants and the abiotic factors (temperature, amount of precipitation) on the yield, crop quality and yield stability of maize. We devoted special attention to the natural nutrient utilization ability and fertilizer reaction of maize. We tested six hybrids with different genetic characteristics and growing seasons. I analysed the correlation between the nutrient supply and the yield of maize hybrids with control treatment (treatment without fertilisation) and with N 80, P_2O_5 60, K_2O 70 kg ha^{-1} and N 160, P_2O_5 120, K_2O 140 kg ha^{-1} fertilizer treatments. Yield increasing effect of the fertilizer also depended on the number of plants per hectare at a great extent. The number of plants of the six tested hybrids was 60, 70, and 80 thousand plants/ha. The six tested hybrids is 10.65 t ha^{-1} in the average of the stand density of 60, 70 and 80 thousand plants per hectare without fertilisation, while it is 12.24 t ha^{-1} with N80+PK fertilizer treatment. That increase in the yield is 1.6 t ha^{-1}, it is significant. In average, the yield of maize was 6.81 t ha^{-1} in 2015, which was a drought year and 11.86 t ha^{-1} in 2016 that was a favourable year.*

Keywords: maize, nutrient supply, number of plants, hybrid

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