

## **SOWING DATE AND NITROGEN RATE EFFECTS ON QUALITATIVE PARAMETERS OF MAIZE GRAIN**

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Field experiment with the maize hybrid ZP 434 was conducted on the calcareous chernozem soil at Institute for Animal Husbandry in the Republic of Serbia during 2016 and 2017. The experiment included two sowing dates (8 April - first date of sowing and 21 April - second date of sowing) and four nitrogen rates (0, 60, 120 and 180 kg ha<sup>-1</sup>). Results show that the year, sowing date and nitrogen rate had highly significant effect on moisture, starch, protein and oil contents of maize grain. The moisture, starch and oil contents were higher while protein content was lower in 2016 than in 2017. The long drought stress during late vegetative development and grain filling stage in 2017 increased protein content in grain. The higher moisture and protein contents and the lower starch and oil contents were recorded for the first date of sowing. The moisture, protein and oil contents significantly increased while starch content significantly decreased with increasing nitrogen rate from 60 to 180 kg ha<sup>-1</sup>. The results documented a significant inverse correlation between starch and protein contents, which prevents breeders from improving these two parameters simultaneously. In order to improve the protein content of the maize grain, the late sowing and fertilization with 120 kg N ha<sup>-1</sup> are justified, because the high protein of grain is related to high grain quality for animal feed.