The influence of conservation tillage systems on productivity elements in the maize crop on the Moldavian Plain

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The experiment was carried out between 2005 – 2008 at Ezareni – The Experimental Farm of the Agricultural University of Iasi, in the East side of Romania (47o07' N latitude, 27o30'E longitude), on a cambic chernozem (SRTS- 2003), or haplic chernozems (WRB-SR, 1998), with a clay-loamy texture, 6.8 pH, 2.7% humus content and a medium level of fertilization. The experimental area has an annual average temperature of 9.4oC and precipitation of 587 mm. The experiment was a "split plot" design with three replicates. Plots covered an area of 60 m2 with a rotation of soybean - winter wheat - maize. The maize mean yield values showed significant differences in plots plowed at 20 cm and very significant results in the disc harrow treatment when compared to the control treatment. These findings confirm that increasing tillage depth result in higher yields. In disc harrow plots, the mean yield over three years was 4532 kg/ha while the conventional tillage variant (plowed at 20 cm) yield recorded 5528 kg/ha. The highest yield of 6482 kg/ha was recorded in the control treatment (plowed at 30 cm). The conservation variants, chisel and paraplow, resulted in intermediate yields between disc harrow and the control treatment, the differences being statistically nonsignificant.