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Grain yield of maize hybrids at different plant densities

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Abstract: Field trials with 12 maize hybrids belonging to FAO maturity groups 500, 600 and 700 were established under the agro environmental conditions of Smederevo in 2010 and 2011 to analyse grain yield and moisture content at different plant densities. The hybrids were sown in two independent trials in the two years at 51,000 and 62,000 plants ha^{-1}, respectively, in a randomised block design with three replications. More favourable maize growing conditions i.e. more moderate air temperatures during the growing season, a more even distribution of precipitation and more rainy days were recorded in 2010 than in 2011, which had much lower precipitation amounts, particularly during July and August i.e. critical development stages (flowering and fertilization) of these hybrids. Grain yield of all maize hybrids was higher in 2010, mostly as the result of greater amounts of precipitation and their more even distribution during the growing season. In both years, significantly higher grain yields were obtained by FAO 600 maize hybrids. Grain yield in 2010 was significantly higher at the higher plant density in FAO 500 hybrids, as opposed to FAO 600 hybrids, which showed no significant difference in grain yield across plant densities. Grain moisture content at harvest did not significantly differ between plant densities in either year. Somewhat higher values for grain moisture at harvest in 2010 were recorded for FAO 600 hybrids. In 2011, there were no significant differences in grain moisture content among hybrids, nor between plant densities, mostly due to the very low amount of precipitation in the second part of the growing season.

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