

# Effects of Varieties on Bean Yield in Organic Production

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Organic production requires bean varieties that are specially adapted to a low level side-dressing system. Badly adapted varieties can be responsible for yield disproportions between organic and conventional ways of farming, because the majority of varieties is intended for conventional production. Varieties specially grown for organic agriculture do not exist for the majority of crops, including bean (Tissi *et al.* 2014). As a nitrogen fixing plant, after bean significant amounts of nitrogen are left in the soil, which favours the following crop, and if plant residue is ploughed in, soil structure is enhanced (Cvijanović *et al.* 2016). The research has been conducted during a three-year period to determine the grain yield of bean grown by organic principles and to choose the variety which is more suitable for farming in organic production. The field experiment was placed by split-plot design in 4 repetitions on calcareous chernozem. Large plots were varieties (Maksa and Zlatko), and subplots were control and agrotechnical treatments permitted in organic production.

In the research, the starting hypothesis was that the yield will depend on variety and applied agrotechniques in organic bean growing technology. Bean yield depended on agroecological conditions during the year of production. Bean grain yield depended on the variety. Using variety Maksa a statistically very significantly higher yield was achieved compared to variety Zlatko.

The influence of the treatment with pelleted fertilizer and the use of microorganisms was significant. The highest yield was given by the pre-sowing fertilization treatment with pelleted fertilizer (Guanito) along with the combination of foliar treatment with effective microorganisms (EM-aktiv).

Correlative dependance between yield components and yield per hectare was not significant, while between yield components it was on the level of statistical significance. For the production of bean by organic principles, variety Maksa is recommended.

