



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Identification of Advantages of Maize-Legume Intercropping over Solitary Cropping through Competition Indices in the East Mediterranean Region

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Abstract: Alternate planting combinations of maize (*Zea mays* L.) with common bean (*Phaseolus vulgaris* L.) or cowpea (*Vigna sinensis* L.) were compared with the solitary planting of each crop during 2003 and 2004 under the East Mediterranean conditions in Turkey. The experiment comprised 15 treatments; sole planting of maize (71,500 plant ha⁻¹), sole planting of common bean (285,750 plant ha⁻¹) and cowpea (285,750 plant ha⁻¹), and 2 different planting patterns (1- and 2-row plantings) with 6 maize-legumes intercropping series, 50:50, 67:50, and 100:50, respectively, using randomized complete block design with 3 replications. Evaluation of the planting patterns was performed on basis of several intercropping indices such as land equivalent ratio (LER), relative crowding coefficient (K), aggressivity (A), aggressivity ratio (CR), actual yield loss (AYL), monetary advantage index (MAI), and intercropping index (IA). Competition indices revealed that, compared to solitary planting, the maize-cowpea and maize-common bean intercropping, regardless of planting patterns, at the mix proportions of 67:50 plant density had advantages due to its better yield, land use efficiency, and economics. Methods used in this study should be easily implemented especially by small scale farms in the East Mediterranean region.

Key Words: Maize, common bean, cowpea and intercropping

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