

The Effect of Additive Intercropping on Weed Suppression, Yield and Yield Component of Chickpea and Barley

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Abstract

Weed suppression and yield increasing are among the aims of intercropping systems. So, chickpea and barley intercropping was evaluated at the Agricultural Research Station, Faculty of Agriculture, University of Bu-Ali Sina during 2010 growing season. Experiment was conducted as split plot experiment based on randomized complete block design with three replications. Control (C) and non-control (NC) of weeds as main plots and six different planting patterns (T_1 ; pure culture of chickpea, T_2 ; pure culture of barley, T_3 ; additive intercropping of 100% C + 100% B, T_4 ; 100% C + 75%, T_5 ; 100% C + 50% and T_6 ; 100% C + 25% B) were considered as sub-plots. Based on results, traits were affected by treatments significantly. Maximum biological and grain yield of chickpea (695.87 and 249.88 g m⁻², respectively) was obtained from CT_1 treatment. Among intercropping treatments, the highest grain yield of chickpea (128 g m⁻²) and barley (506 g m⁻²) were achieved at CT_6 and CT_3 treatments, respectively. In comparison chickpea monoculture, all intercropping patterns decreased significantly biomass and density of weeds/m². Also, in all intercropping treatments, LER was more than unit and maximum value of LER (2.40) was revealed at NCT_3 treatment. In general, based on the results, additive intercropping of chickpea and barley can suppress weeds and increase land use efficiency.

Keywords: Agricultural system, Land equivalent ratio, Control, Crop, Production.

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