Use of clover (Trifolium alexandrinum) as a cover crop for common bean (Phaseolus vulgaris) weeds control

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In order to evaluate the intercropping of bean-clover and the amount of weed control, an experimental was conducted in a factorial based on randomized complete block design with three replications at Research Farm of Zanjan University in 2010. The first factor was the different patterns of additive intercropping systems in 6 levels included of sowing 20, 40, 60 and 80% of clover optimum density + 100% of bean optimum density and monoculture of the crops and the other factor was control and non-control of weeds. The studied traits were height, leaf area and dry weight of bean, height and dry weight of clover, number, density and dry weight of weeds species separately and the weight of total weeds. Yield and yield components of bean were measured at the harvest time and advantage of intercropping was calculated by use of intercropping evaluation indices. Grain yield in all treatments of intercropping was higher than monoculture under non-control of weeds and the highest grain yield was related to intercropping of bean 100% + clover 40%. Fodder yield of clover in monoculture of clover under control and non-control of weeds was higher than all treatments of intercropping due to high density in monoculture.

The highest percentage of weeds biomass reduction in intercropping treatments compared to monoculture of bean was obtained in 100% bean + 80% clover and the lowest was in the intercropping of 100% bean + 20% clover. The best treatment of intercropping based on majority of intercropping evaluation indices (LER, AYL, K) was 100% bean + 80% clover, but based on intercropping economical evaluation index (RVT) was 100% bean + 40% clover in comparison with other treatments of intercropping.