

Investigate of Indigo (*Indigofera tinctoria* L.) and Roselle (*Hibiscus sabdariffa* L.) intercropping on weed density

Intercropping is one of the most effective methods to achieve sustainable agriculture. In order to investigate the effect of intercropping on Indigo (*Indigofera tinctoria* L.) and Roselle (*Hibiscus sabdariffa* L.) yield and weed management, an experiment based on randomized completely design (RCB) with three replications was conducted in research field of South Kerman Agricultural and Natural Resource Research and Education Center, Iran, during 2014. Treatments were different plant density of Indigo and Roselle in additive and replacement intercropping system: 100:100, 100:50, 50:100, 50:50 and monoculture of Indigo and Roselle respectively. The result showed that maximum yield of Roselle (1114 kg/hect) is obtained from 100:100 intercropping ratio that 29.25% was higher than Roselle solo culture. Amaranth (*Amaranthus* sp.) density in 100:100, 50:100 and 100:50 ratios of Indigo and Roselle were 57.44T 81.5 and 70.38 % lower than Roselle solo culture respectively. Maximum plant density of Cyprus (*Cyperus* sp.) was related to Indigo and Roselle solo culture and 50:50 intercropping ratio. Plant density of other weeds in 100:100, 100:50, 50:100 and 50:50 ratios were 77.7, 48.22, 51.88 and 44.4 % lower than Roselle solo culture. Weed biomass in 100:100, 50:100 and 100:50 ratios of Indigo and Roselle were 25.44, 15.98 and 23.38 % less than Roselle solo culture and its lowest amount (84 gr/m²) was related to 100:100 additive systems. It seems that solo culture and 50:50 of Indigo and Roselle intercropping system prepare maximum ecological niche for weeds than its additive system prepare maximum ecological niche for weeds than its additive system.

Key words: Indigo, Intercropping, Roselle, Solo culture, Weed density.