

## Abstract

In order to evaluate the effect of rye (*Secale cereale* L.) and berseem clover (*Trifolium alexandrium* L.) as cover crop on yield, yield components and weed control in stand and prostrate red bean cultivars, a factorial experiment based on complete block design with three replications was conducted at the Field Research of Ferdowsi University of Mashhad, during 2014 growth season. Factors including: (1) the red bean cultivars in two levels including Derakhshan with standing growth habits and Goli with prostrate growth habits, (2) type of cover crop in three levels including rye, berseem clover and intercropping of rye and berseem clover (50:50 ratio) and (3) cover crop management at two levels including: a. hand mowing cover crop and left the dead mulches on the soil and b. hand mowing cover crop and carried them out of the field. In addition, two control treatments, without cover crops, for each red bean cultivar including no-hand weeding and hand-weeding whole season arranged aside the experiment. The results of this experiment showed that the effect of the cultivar and type of cover crop on total weed density, total weed biomass, red bean yield and yield components was significant. Cover crops reduced total weed density and biomass and red bean grain yield increased in this way. The Goli cultivar with prostrate growth habits, significantly reduce the damage of weeds by better shading and resulted more grain yield than Derakhshan cultivar. In general, intercropping rye + clover and left the dead mulch on the soil was the best treatment for bean seed production with 3764 kg and rye cover crop and removal of dead mulch from soil with 2733 kg ha per hectare has less impact on weed control and compensate for grain yield.

**Keywords:** Derakhshan cultivar, Goli cultivar, Living mulch, Weed density, Weed biomass.

