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Weed Population and Interference Response to Sowing Date and Bean (*Phaseolus vulgaris*) Cultivar

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Abstract

In order to evaluate the effect of sowing date and bean varieties with different growth habit of the weed population and their interference, a field experiment in Boroujerd during 20014–20015 growing season, split factorial in a randomised complete block design with four replications. Factors examined include sowing date at four levels (21 April, 10 May, 31 May and 22 June), the beans in two levels: Line GOYONOK98 (standing cultivar) and the Almas(prostrate cultivar) as well as two levels of weed (weed free and weed infested-throughout the total growing season). The results showed that the effects of planting date and cultivar / line as well as their interactions on the average number of species, density and biomass weed had a significant effect. The greatest number of weed species in planting date was 21 April. Delay in sowing date increased frequency, density and dominance of the weed species., The highest frequency (41/85 %), and the predominance (2/39 percent) and the amount of biomass (09/711 g/m²) among 17 weed species was belonged to Wild amaranth(Amaranthus retroflexus). The highest frequency of weeds in the sowing date was 31 May (5/54%) compared to implants on the first, second and fourth, respectively, 34/85, 29/61 and 19/16 percent. The highest and lowest average relative density was belonged to Puncture vine(Tribulus terrestris L.) and Wild barley(Hordeum murinum) species respectively. The highest and lowest weed density implants on ,31 May and 21 April with an average of 195/66 and 86/76 plants per square meter, respectively. 20-day delay in sowing date , increased weed biomass was 46 / 45 percent. Minimum and maximum biomass of weed species on first and second sowing date was obtained with an average of 1139/65 and 2128/35 g/m² . In each sowing date the total number of species, frequency and the amount of biomass and the dominance of broadleaf weed species were most than narrow-leaf species. The average relative density and total density of narrow-leaf weeds on 31 May and 10 May sowings respectively were most than broadleaved species.

Keywords: Beans, biomass, density, dominance, frequency, sowing date, weed