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ORIGINAL ARTICLE

The Comparison Lentil Varieties in Competition with Weeds

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ABSTRACT

The reason of more extent use of chemical materials in battle with weeds and environmental effects those, an experimental was conducted in 2009-2010 at agricultural research station Ardabil, Iran. The lentil varieties in production and yield in weed presence or absence weeds together were compared in this study. Three varieties lentil spring were used. Results of this experiment showed that there were no significant differences among varieties from regard susceptibility with weed density and cover. The treatment having weed (related with kind verity) In comparison with without weed splits were significantly showed reduction from aspect yield, harvest Index, Biological yield and 1000 grain. However, height of plant trait there was no significant them. The least and the most yield reduction at result of weed was observed in ILL6212 and Ardabil native varieties respectively .Thus there is A.TEST variety among another two treatments. Based on the results obtained is appeared that ILL6212 variety with reason reaching early to optimum canopy area and also growing rate in field , having the most yield was when compared with another varieties this research, that in regions that there isn't weed battle possible the least reduction is observed at compared with varieties other.

Key words: varieties, competition, weeds and lentil.

Introduction

Lentil of legumes by seed common in many developing countries that form various standing, half standing, lying semi asleep can be found [3]. This plant PH soil, between 5.5 to 9 can tolerate and in areas with rainfall annual rainfall of less than 400 mm per year is based and cultivation of wheat cultivation system is the area has good compatibility [1]. Lentils, like other crops that were vulnerable weeds can not be excluded from this provision. Although lentil beans against one of the strongest non-conductive environmental conditions is one of the major problems that produce, deal with common weeds The fields are so that weeds as the most important factor affecting the performance of brand name lentils Given that lentils due to short plant height to create a protective canopy is not so and from late growth period can not control Weed be located. Shallow root system of this plant that causes

stress conditions weeds lentil yield further reduce weeds with deep roots of moisture in the deeper layers of soil and plant uses lentils are thus overcome Weed control should be done to some extent that has the highest economic returns [5] and [7]. Halia [4] reported that the average yield loss due to weeds of lentils and 60% in the highest density of weeds reduced the yield reaches 100% of the weeds mainly in two ways, resulting in decreased performance of that index are Lentils The plant growth rate is down, so in the early stages of growth is surrounded by weeds, this case report by Basler [2] because grass weed in early stages of growth compared with the moisture content of lentils better food and materials will be used. In addition, because these plant semiarid regions are therefore cultivated weed control performance due to increased moisture in the plant will be effective. Reducing lentil yield with weeds relative to the ground state of weeds, weed species and moisture depends on soil fertility.

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Crops that have been a bigger canopy and from enjoy a stronger root system can compete with weeds more successful act that in some cases due to allelopathic substances from the roots of these plants are producing grass growth weeds will limit (Coochaki, 1372). The purpose of this study assessment of digit in the face of the grass weed less yield loss factors of the plants are able to govern adaptation makes the region can increase crop production is the effect. One of the most important mixed with weed management components of products with higher competitive ability, although this is difficult but is possible. korres and Williams, [6] stated the use of plants competing with weeds for weed control can As low-cost and effective method is used so that the amount of herbicides to reduce consumption. So with regard to sustainable agriculture based on less use of herbicides is based on introducing crop varieties that can compete with weeds are can also reduce costs related to herbicides, environmental impact resulting from herbicide use is also reduced.

Material and Methods

These studies in agricultural experiment station in Ardabil were agricultural in 2009. Where the experiment was a cold semiarid climate and temperature in the winter is often below zero, the average annual minimum and maximum temperature in order 18.98 and 15.1°C and average Annual rainfall 310.9 mm have been reported. Clay loam soil texture of the land in terms of the amount of organic matter poor 0.7 percent phosphorus and potassium respectively 12 and 400 ppm and electric is a mouse. PH lands around the 7.7 where and depth of soil is cm70. Factorial experiment based on randomized complete block design in three replicates was performed and the factors included cultivar varieties of native varieties of lentils that Ardabil, cultivar ILL6212, A. test treatments with weeds and no weeds was measured. Seeds in the second May following favorable conditions planting by hand were performed with a distance lines 25 cm and rows 4 cm was performed. Plots that make treatments to control weeds should be applied were randomly selected that they control weeds upon emergence to harvest was done. Specimens with dimensions 1.5 m randomly from each Dvtymarhay with weed collected Vfaqd were obtained. And evaluation of yield and yield components to grain yield, biological function, harvest index and seed weight and plant height were measured to evaluate the biological performance of all plants per plot after removal of the lateral lines of the first half meters harvested Vryshh Vanthay main lines of They separated from the collar and after being dried whole shoots were weighed while grain

yield per plot according to the above method with a sensitive scale 0.01 g was measured. Data analysis using SAS software was performed.

Results and discussion

Treatments without weed mix of biological yield, grain yield, harvest index and seed weight to different cultivars had significant effect on plant height, and this difference was not significant. Plots with weed-free plots compared to weed varieties depending on the same yield loss was reduced so that maximum biological yield in Ardebil and A. test native cultivars had its highest amount of this reduction was minimal for ILL6212 cultivar. Falling grain varieties ILL6212 weed presence and for 28 percent of native cultivars with reduced yield in Ardebil 54%. Showed the greatest decline. In harvest index between treatments without weed for a native weed mix Ardabil nearly 11% according to most tables (1) Vdrrqm ILL6212 had the lowest 6% decrease related to the seed weight for native and for Ardabil ILL6212 minimum and maximum Fyma A.test cultivar was among them. Given that the cultivar ILL6212. A week earlier than other varieties had been green and canopy levels earlier than they needed child was the result more than the rest of their competitive ability showed Venice can be concluded due to the formation of stronger roots than others due to faster growth optimum use of available resources could be produced cholera Horn Vbrg be more superior to them. Earlier while the other two varieties were also harvested. Leaf area and plant height may be a significant effect on the interaction of plant Vlf weed makes 1981), Basler) Wayne so it seems that the cultivar ILL6212 compared to other cultivars the highest numbers Vartfa plant, especially towards indigenous Ardabil is. The results show that the cultivar ILL6212 compared with other cultivars studied competition with weeds were more successful and varieties of native Ardabil weakest competition with weeds from has shown so that the reduced yield due Vjvdlf weed this cultivar also shows the inability to compete with the variety of weeds (Table 1). weeds although much damage to the crop but they entered, like other plants absorb minerals from the Raps in soil organic matter And converts to turn away the soil humus soil, tissues and organs are increasing and genetic resources for breeding research is one. And because of the harmful effects of chemicals on environment and sustainable plant chemicals and the necessity of sustainable agricultural development strategies for combating weeds using biological methods, cultivars Vmrfy reform despite fewer weeds in the field drop in performance should be achieved seems. Research & study the need is greater.

Table 1: Compares the grain yield, biological yield, and harvest index and 100-seed weight in treatments with and without weed varieties mentioned.

Varieties	Treatment	Biological yield		Grain yield		Harvest index		100-seed weight	
		Kg/ha	Decreased%	Kg/ha	Decreased	%	Decreased%	g	Decreased%
Native of Ardabil	Without weed	1950	38	760	54	39	11	7.3	6.2
	With weed	1250		350		28		6.9	
ILL6212	Without weed	2350	18	1080	28	46	6	8	3.5
	With weed	1940		776		40		7.8	
A. Test	Without weed	1800	25	720	42	40	9	6.9	6
	With weed	1350		4200		31		6.5	

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