

Abstract

To evaluate the intercropping of corn (*Zea mays* L.) and peanut (*Arachis hypogea* L.) a field experiment was performed (2012-2013) in Research station (Chah nimeh) of agriculture University of Zabol. Factorial experiment performed in a randomized complete block design with three replications. Planting pattern as the first factor with 4 levels (corn, 50 % corn + 50% peanuts, 100% corn + 100% peanut and peanut), control weeds as the second factor (no weeding, once weeding and twice weeding) and the distance between rows in the two levels (40 cm and 50 cm) were considered. Results showed that in all treatments, mixed land equivalent ratio greater than unity which indicates priority of mixed culture than mono culture of corn and peanut. The highest land equivalent ratio of was achieved in 100 % corn + 100 % peanut treatment, the peanuts were obtained more economic performance, competitive and aggressive capability than the corns by measuring other competitive indicators (A, RCC, CR). In the statistical view the effect of planting system, control weeds and the density of crude protein in two plans grains, nutrient rate of soil, soil temperature, volumetric moisture content and photosynthetic active radiation absorption percent was significant. The mixed treatments had more observed radiation rate and volumetric moisture than mono culture of corns while they had less temperature than mono culture of corns. The means comparison showed that weeding of weeds and increasing of the density cause to increase absorption of light, moisture, the amount of protein in the seeds of two plants, soil nutrient and it reduces soil temperature. The measurements of Corn protein showed that the maximum increase of protein mixtures obtained from increased mixed corn. In all studied the properties showed that the intercropping had a greater effect on the corn in compare with peanut because of positive effect of Legume on Grass. The results showed that using of legumes in the mixture improve soil nutrients (C, N, Ca, Mg, Na, K) after harvesting and thus maintaining soil fertility. Generally, this study showed the importance of Intercropping of legumes and grasses which results in optimal use of environmental resources, increasing of soil fertility and more profitability of intercropping than monoculture of corn and peanut.

Keywords: Competitive indexes, Land equivalent ratio (LER), Photosynthetic active radiation, soil temperature.



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**Evaluation of ecological and agronomic
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additive and replacement serious
intercropping**

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