

Abstract

In order to study the intercropping of Roselle and Peanut, an experiment has done in crop year 2013-2014 on the training and research institute farm of the Zabol university for crushed crete in the form of completely random blocks plan with three times repetition. The main factors are 0, 100, 200 and 300 kg of nitrogen fertilizer in a hectare and the subsidiary factors are intercropping alternative systems containing net Roselle, net peanut, 00 percent Roselle + 00 percent peanut 50 percent Roselle + 50 percent peanut, 20 percent Roselle + 80 percent peanut. The results indicated that the land Equivalent ratio (LER) is more than one at all the intercropping treatments (LER > 1). It shows that intercropping has excelled net Roselle and net peanut. The most land Equivalent ratio (LER > 1.73) has been achieved in the treatment consuming 300 kg nitrogen fertilizer in a hectare for intercropping with 50 percent Roselle + 50 percent peanut. Other competitive indicators measurements (dominance, relative clash and competition) indicated that Roselle with more economical operation than the others had more competitive and offensive ability than peanut. Statistically, nitrogen and cultivation systems impact and also interaction between the both of them, the number of side branch, the number of flowers, plant dry weight, the amount of anthocyanins, leaflet dry weight, removal index of Roselle, the number of pods in a bush, the number of seeds in a pod, the weight of 100 seeds, bush dry weight, economical and biological operation and removal index of peanut have been meaningful. The most economical operation (489.049 kg in a hectare) has been achieved in the treatment consuming 200 kg nitrogen fertilizer in a hectare for intercropping with 50 percent Roselle + 50 percent peanut.

Keywords: Nitrogen, Roselle, Peanut, Land Equivalent Ratio, intercropping



University of Zabol
Graduate school
Faculty of Agriculture
Department of Agronomy and Plant Breeding

**The Thesis Submitted for the Degree of M.Sc (in the field of
Agronomy Science)**

**Evaluation of Peanut (*Arachis hypogea*)
and Roselle (*Hibiscus Sabdariffa*)
intercropping in different nitrogen
levels**

Supervisors:

Dr. Mehdi Dahmardeh
Dr. Mohamad Galavi

Advisors:

Dr. Eisa Khammari

By:

Es'hagh Pourkarami

January ۲۰۱۶