

## Abstract

In order to study the yield in intercropping of roselle and okra under the influence of different levels of iron fertilizer spray, an experiment as factorial based on randomized complete block design with three replications at the Agricultural Research Station of Zabol University (Chah-Nimeh) located in the city of Zahak in the 2015-2016 crop year. Intercropping ratios in 8 levels includes sole roselle, sole okra, 75% roselle + 25% okra, 75% okra + 25% roselle, 50% Okra + 50% roselle, 50% Okra + 100% roselle, 50% roselle + 100% Okra, 100% Okra + 100% roselle as the first factor and various levels of fertilizer spray in 3 levels includes (0, 3 and 6 cc per thousand) as a second factor. Based on the results of analysis of variance, interaction of intercropping and iron sulfate spray on plant height, number of lateral branch, sepal yield, carotenoid and anthocyanin of roselle was significant. Means comparison of data showed that the highest plant height (192.33 cm) and number of lateral branches (7.66) was obtained from intercropping of 25% roselle + 75% Okra with 6 cc / thousand iron sulfate, and the highest sepal yield (804.14 kg / ha) was obtained from 100% roselle + 50% Okra with 6 cc / thousand iron sulfate. The highest amount of carotenoids (1.55 mg / g fresh weight) was obtained from intercropping of 25% roselle + 75% Okra in non- spray iron sulfate (control) conditions. The highest amount of anthocyanin (0.0454  $\mu\text{mol}$  / g fresh weight) was obtained from intercropping of 75% roselle + 25% Okra with 6 cc / thousand iron sulfate. The results of analysis of variance showed that, interaction of intercropping and iron sulfate spray on plant height, stem diameter, biological yield, number of fruit per plant, fresh weight of fruit and economic yield of okra was significant. The highest biological yield (9887 kg / ha) was obtained from intercropping of 50% roselle + 100% Okra with 3 cc / thousand iron sulfate and the highest economic yield (3272.9 kg / ha) was obtained from 25% roselle + 75% Okra with 6 cc / thousand iron sulfate. The highest number of fruits per plant (187/40) was obtained from intercropping of 25% roselle + 75% Okra with 6 cc / thousand iron sulfate. The highest fresh weight of the fruit (1636.47 g per plant) was obtained from 25% roselle + 75% Okra with 6 cc / thousand iron sulfate. The results showed that different intercropping systems had a significant effect on the land equivalent ratio at a probability level of one percent. So that the highest land equivalent ratio (2.51) was obtained from intercropping of 50% roselle + 100% Okra. According to the results of the study, intercropping of 50% roselle + 100% okra due to highest land equivalent ratio, with spraying 6 cc per thousand fertilizers of iron sulfate is recommended for the area.

**Key Words:** Iron sulfate, Intercropping, Carotenoid, Anthocyanin, Sepal yield, Fresh fruit weight, Land equivalent ratio



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**Evaluation of yield and yield components of Roselle (*Hibiscus  
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different levels of foliar application of Iron**

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