

Abstract:

To investigate the effects of bio-fertilizers and iron sulphate on quantitative and qualitative characteristics of medicinal plants Roselle Experimental Research Farm of Zabol University Institute in 1394 Split plot in a randomized complete block design with three replications. Treatments were three biofertilizers including: Control (without fertilizer bio), vermicompost. Cow manure and seaweed. And 3 levels of foliar application of iron include: A control (no iron), applied to the amount of 3^{cc} per thousand. 6^{cc} ppt. Based on the results of biological fertilizer on plant height, stem diameter, number of branches, number of fruits per plant, fruit weight. Biological yield, economic performance, Chlorophyll, chlorophyll a, b, carotenoids, carbohydrates, anthocyanins, protein, potassium and phosphorus were significant. Iron foliar treatments on traits was significant. Evaluation of treatments showed that the highest yield of roselle sepals combined with the use of biological fertilizer seaweed And 6 per thousand iron concentration and the highest amount of anthocyanin sepals with a combination of manure and spray iron was 3 per thousand. The results showed that combined use of bio-fertilizers and iron sulphate, They can increase compared to the separate use of quantitative and qualitative factors play an important role Roselle. In this study, using neural network models SPAD number of parameters, chlorophyll, chlorophyll, chlorophyll, anthocyanins, carbohydrate, protein, potassium, Ash, phosphorous and carotenoids was simulated The results showed a good performance neural network in estimating these parameters. Protein is the best answer, The greater the amount of R² and RMSE and MAE less, The simulation results better, Protein is possible with the amount of fertilizer and plant diseases that have a direct link to And has caused neural networks work better.

Key words: anthocyanins, vermicompost, carotenoids, chlorophyll, seaweed.



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**Determine the optimal levels of biofertilizers and
foliar iron on quantitative and qualitative
characteristics of Roselle (*Hibiscus sabdariffa*)
using neural network**

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