

Effect of source, amount and method of iron application on quantity, quality and profitability rate of strawberry (*Fragaria × ananassa* Duch, cv. Selva)

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Abstract

Calcareous soils with high pH in Jiroft region have caused difficulties in uptake of micronutrients, particularly iron (Fe), by strawberry plant. In the present greenhouse research, treatments consist of combination of different sources, application method and amount of iron application. Results showed that soil application of 10.5 kg/ha chelated iron (Fe-EDDHA) had the highest fruit yield, average fruit weight and vitamin C content. Based on the orthogonal comparison, in general, applying iron with any method of application and combination significantly affected most of the measured plant traits (with the exception of fruit acidity and vitamin C content). Therefore, regardless of the type and method of iron application, its application is necessary to increase yield and other quality parameters of the strawberry under greenhouses conditions in Jiroft region. Economic evaluation of the treatments showed that spraying iron sulfate and Fe-HEEDTA is not economically justified due to the costs imposed on greenhouse owner. Generally, soil application of Sequestrene-138-Fe is economically valuable, compared with spraying of iron sulfate and Fe-HEEDTA. Using 4.5 kg/ha Sequestrene-138-Fe has higher economic justification and higher profitability rate (1979.95% in comparison with 1345 and 1176.89%, respectively) compared to 7.5 and 10.5 kg/ha. Thus, soil application of 4.5 kg/ha Sequestrene-138-Fe (Fe-EDDHA) for greenhouse production of strawberry in Jiroft region, which have similar conditions to the present experiment, is recommended.

Keywords: Fe source, Sequestrene-138-Fe, Iron sulphate, Fruit yield.

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