INFLUENCE OF NITROGEN AND PHOSPHORUS RATES ON NUMBER AND QUALITY OF STRAWBERRY TRANSPLANTS

By

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B.Sc. Agric. Sc., Horticulture, Ain Shams University, 2007

M.Sc. Agric. Sc., Vegetable Crops, Ain Shams University, 2013

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ABSTRACT

Amr Abdelfattah Hamed Ahmed Metwally: Influence of Nitrogen and Phosphorus Rates on Number and Quality of Strawberry Transplants. Unpublished Ph.D. Thesis, Department of Horticulture, Faculty of Agriculture, Ain Shams University, 2018.

Due to the expansion of strawberry nursery cultivation, transplant production has become an important industry in Egypt. Nitrogen and phosphorus are the most important nutrients affecting the number and quality of strawberry transplants. However, no empirical research exists addressing the optimal requirements of nitrogen and phosphorus fertilization rates for strawberry nurseries in Egypt, until now.

This study was conducted in a private farm in Abo Ghalib, Giza Governorate, Egypt during the two successive summer seasons of 2015 and 2016 to determine the optimal requirements of nitrogen and phosphorus fertilizations for Festival strawberry cultivar nurseries *via* evaluating the influence of four nitrogen rates (83, 100, 117 or 134 kg N/feddan) and five phosphorus rates (38, 62, 74, 86 or 98 kg P_2O_5/feddan) in a factorial experiment. Results revealed that increasing the rates of nitrogen and phosphorus fertilizations increased the number of main runners/mother plant and marketable transplants/m^2, and enhanced all vegetative growth parameters, leaf SPAD readings, leaf relative water content, leaf membrane stability index, crown diameter, crown carbohydrates, and leaf mineral contents in both growing seasons. On the contrary, both elements had an inverse effect on leaf total soluble phenols. Thus, the study recommends to the nurserymen of Festival strawberry cultivar to apply 117 or 134 kg N with 98 kg P_2O_5 per feddan under pure sandy soil condition which gave the highest number of marketable transplants with high quality and subsequent high quality crop in the field.

Keywords: *Fragaria x ananassa*, Nursery, Fertilization, Growth, Transplant quality.

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