Growth and productivity of organic and conventional strawberry cultivation in Egypt using remote sensing techniques

By

NOHA ALI MORSY IBRAHIM

B.Sc. Agric. Sci. (Vegetable crops), Fac. Agric., Cairo Univ., 2011

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APPROVAL SHEET

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ABSTRACT

A two-year field experiment on at the sandy soil in Qalyubia Governorate, Egypt in strawberry plants cv. Sweet Charlie to study the effect of different growing conditions organic and conventional strawberry growing systems and some colors of plastic mulch such as clear, black, and silver effects on the quantitative and qualitative characteristics of the strawberry plantations through remote sensing tools. The results showed clearly all treatments that the strawberry growing systems with silver plastic mulch recorded higher values in all vegetative and fruit traits measured, as compared with an organic strawberry growing systems without plastic mulch. Spectral reflectance parameters in form of vegetation indices (VIs) were examined as yield estimators. Also, their correlation with leaf area index (LAI) was observed. Spectral reflectance pattern for the different treatments (fertilization and colors of plastic mulch) was identified through in situ spectral measurements of. Generated models with accuracy assessment were explained. Optimal vegetation index to estimate yield under each treatment was identified. Generally, it was found that fertilization has more effect on spectral characteristics than plastic mulch. All generated models with an accuracy of each model are explained in the following sections.

Keywords: Strawberry, spectral reflectance, vegetation index, yield

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