

Spatial Variation of Nitrogen, Phosphorus and Potassium Contents of Tomato (*Solanum lycopersicum* L.) Plants Grown in Greenhouses (Springs) in Elmali-Antalya Region

Authors : Namik Kemal Sonmez, Sahriye Sonmez, Hasan Rasit Turkkan, Hatice Tuba Selcuk

Abstract : In this study, the spatial variation of plant and soil nutrition contents of tomato plants grown in greenhouses was investigated in Elmali region of Antalya. For this purpose, total of 19 sampling points were determined. Coordinates of each sampling points were recorded by using a hand-held GPS device and were transferred to satellite data in GIS. Soil samples were collected from two different depths, 0-20 and 20-40 cm, and leaf were taken from different tomato greenhouses. The soil and plant samples were analyzed for N, P and K. Then, attribute tables were created with the analyses results by using GIS. Data were analyzed and semivariogram models and parameters (nugget, sill and range) of variables were determined by using GIS software. Kriged maps of variables were created by using nugget, sill and range values with geostatistical extension of ArcGIS software. Kriged maps of the N, P and K contents of plant and soil samples showed patchy or a relatively smooth distribution in the study areas. As a result, the N content of plants were sufficient approximately 66% portion of the tomato productions. It was determined that the P and K contents were sufficient of 70% and 80% portion of the areas, respectively. On the other hand, soil total K contents were generally adequate and available N and P contents were found to be highly good enough in two depths (0-20 and 20-40 cm) 90% portion of the areas.

Keywords : Elmali, nutrients, springs greenhouses, spatial variation, tomato

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