



Response of Green Peas to Irrigation Automatic Scheduling and Potassium Fertigation

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Abstract: Response to irrigation scheduling and potassium fertilization under drip irrigation was tested on green peas for 2 years (2012 and 2013) at the Experimental Farm of Agricultural Production and Research Station, National Research Center (NRC), (APRSNRC), El Nubaria Province, Egypt. Application of automatic irrigation was scheduled through two programmable control panel methods. The first, by using data obtained from the Central Laboratory, Agriculture, Climate, applying (CROPWAT 8 CLIMWAT 2) pre-stored software. The second, by using the daily registered data of the Automatic Meteorological Station (located in the same farm at Nubaria, provided to (CROPWAT 8) software. Potassium was applied through the drip irrigation system, equally in the twelve experimental splits. The obtained results revealed that: a clear difference is noticed between the calculated values of (CROPWAT 8) data, range 3.44 – 1.48 mm/day and (CROPWAT 8 CLIMWAT 2) data range from 3.79 - 2.03 mm /day. At the same time, the data recorded in two successive winter seasons, by the automatic meteorological station with (CROPWAT 8), showed slight differences in its values. On the other hand, water total requirements of CROPWAT 8 and CROPWAT 8 CLIMWAT 2 were 630.4 m³/fed and 707 m³/fed respectively. Data registered by the local meteorological station has proved to be the best method concerning water use efficiency and yield amount and quality. Increasing potassium fertilization rates from 50% to 100% percent (of recommended rates) increased both vegetative growth percent coverage, plant heights, both wet and dry weight of plants and net yield of pods (number of pods per plant, number of seeds per pod, average of pods, average yield of plant and total yield). Using automatic irrigation scheduling proved to be easy and doesn't need high skills in operation and maintenance.

Keywords: Automatic scheduling irrigation, Potassium fertigation and Drip irrigation.