EFFICIENCY OF SOIL DESALIATION BY RAINFALL AFTER INAPPROPRIATE CHEMIGATION PRACTICES

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Chemigation is a wide definition representing the application of any agricultural chemical (fertilizer or pesticide) to the soil or plant surface with an irrigation system by injecting the chemical into the irrigation water. Depending on the chemical type to be applied, chemigation may be referred to as fertigation, herbigation,,, etc. Fertigation is becoming more efficient than traditional broadcasting or drop-fertilizing methods due to many reasons for example: precise control of both the concentration and balance of nutrients, fertigation solutions can be easily monitored and modified for any plant growth stage or species and with irrigation scheduling; water and nutrients are applied at the precise time they are needed and at the rate they are utilized.

A field experiment was carried out during a growing season from March 27 to September 15, 2012 and the experimental area is located in Czech Republic - Prague at the west part called Suchdol, in the campus of the Czech University of Life Sciences close to meteostation; to apply irrigation management – scheduling procedure, to study the effect of soil desalinisation by rain after the growing season and until the beginning of the next growing season and to study the change in soil physical properties represented in the amount of water stable aggregates (WSA), Four fertigation treatments have been applied ; fertigation with nutritive solution A (EC = 1 µS.cm-l, PH = 6) , fertigation with nutritive solution B (EC = 2 µS.cm-l, PH = 6), Irrigation with water only, Control Parcel (no treatment).

Soil desalinization was determined by comparing the electrical conductivity and water stable aggregates directly after the growing season and at the end of January. For EC and WSA determinations; 6 soil samples (3 for 10 cm depth and 3 for 20 cm depth) have been taken from each treatment after the growing season and at the end of three different months; September, November and January. The total dry matter (TDM) of the different treatments has been measured.

Keywords: fertigation, irrigation scheduling, evapotranspiration, water stable aggregate, soil salinity.