

## **Influence of the regulation of underground water level on some of qualitative and productivity characters of Golden delicious apple cultivar**

**Rawan haya Alkhateeb<sup>1</sup>, Bayan Muzher<sup>2</sup>, Suleiman Saleem<sup>3</sup>**

<sup>1</sup>Msc. Student at the Agriculture and Agrarian Reform Directorate –sweida, Syria

<sup>2</sup>Head of Pome and grapevine division-GCSAR, Syria

<sup>3</sup>Faculty of Agriculture, Damascus university, Syria

**Abstract :** The present research was Carried out in Sweida Governorate, Syria in the area where apple trees widely distributed which characterized with heavy clay soil, during the growing season 2014-2015, in order to study the effect of the regulation of the subsurface free water level on the productivity and qualitative characters of apples, where Mole trenches were made using a tractor and plow by fixing a drill or a screw driver on the tractor. The experiment was carried out using four considered Treatments which differ in the distance between the tracks.

The results showed that the treatment (1m distance between tracks) significantly improved the vegetative growth (Shoot length and diameter) of apple trees in the comparison with other treatments, the average length of shoots was 65 cm with significant increasing of 32.9 cm than the Control and the average diameter 6.33 mm which increased significantly of 2.23 mm than the Control. On the other hand, the treatment (1m distance between tracks) revealed the highest productivity (60.25 kg/tree) in significant with the other treatments, which increased about 99.8% more than the control.

The results of the chemical analysis of apple fruits showed the highest percentage of soluble solids and total sugar in the treatment (1m between tracks) which were 15.73 % and 14.3%, respectively, with an increasing of 1.77 % and 1.12 % respectively than the Control.

**Key words:** apple, total soluble solids, sugars, clay soil, drainage.

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