

Plant Science 2019: The influence of fertilizers used in Gaza Strip's agricultural practices on the soil quality- Salahaldin M A Abuabdou- Universiti Putra Malaysia

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The Palestinian Ministry of Agriculture started the agricultural investment in some free settlements in Gaza Strip since 2008. The proposed areas to be planted and the proposed crops were chosen randomly without any researches to study the expected adverse impacts of these agricultural projects on the environmental components. This research aimed to study the surface soil or (topsoil) for one of free settlement lands in Gaza Strip which used for agriculture, using physical, chemical and biological tests to identify the properties of the soil. The experimental data was analyzed for group of plants and trees soil samples. Sixteen (16) soil samples were collected for eight types of plants and trees equally; two appropriate depths were chosen for each soil sample according to the root depth (15 and 30 cm for plants, and 30 and 60 cm for trees). The 16 samples were tested in term of acidity, salinity, (N-P-K) nutrients concentrations, sieve analysis, water moisture, hydraulic conductivity and organic content. It is found that acidity degree for most soil samples tended to be basic; they ranged between (7-9), most of them have similar salinity for the two depths ranging between 130-340 $\mu\text{S}/\text{cm}$ except the cucumber land soil which have higher salinity, the total concentrations of nitrogen, potassium and phosphorus ranged between 25-85 mg/kg, 30-85 mg/kg and 0-12 mg/kg respectively, which are considered very low comparing with the essential concentration of nitrogen, potassium and phosphorus in soil which are 15 g/kg, 10 g/kg and 2 g/kg respectively. Sieve analysis showed that all soil

samples have the same physical characteristics and thus one represented soil sample was tested in term of hydraulic conductivity and had a result of $7.7\text{E-}3$ cm/sec, the water content ranged between 2-6% for all samples and finally the organic content was ranged between 0-0.74% which considered very low. Open field vegetables are grown in the five agro-climatic zones. Common crops include tomatoes, cucumbers, eggplants and squashes. The timing for planting each type of vegetables is site dependent. For the Ghor area, they are either planted in late summer/early fall (August-October), or in late winter/early spring (January-February). Vegetables are not usually planted during summer months in the Ghor area due to the high temperatures there. In other climatic zones, most vegetables are usually planted during most of the year except winter. Frost spills are a major concern for farmers growing open field vegetables especially during late fall or early spring. Frost is possible in all climatic zones, although it is rare in the Ghor. Open field vegetables cover more than 8 900 ha or 70 percent of the total area of vegetables in the Occupied Palestinian Territory (Table 10 and Figure 6). The percentage is higher in the Ghor area than other areas due to the lower possibility of frost in that area. Productivity of open field vegetables depends on the type of vegetables and ranges from about 7 tonnes/ha for green beans to about 70 tonnes/ha for tomatoes. On average, productivity is about 25.7 tonnes/ha for open field vegetables.