

EFFECTS OF OXYGEN CONCENTRATION OF WASTE WATER ON SOIL AND TOMATO

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ABSTRACT

Scarcity of water is important worldwide. In particular, there is more emphasis on arid and semi arid regions like Turkey. Although this long process has been completed, several countries today regularly face imbalances of water demand and water supply, especially in the summer period, due to simultaneous occurrence of low precipitation, high evaporation and increased demands for irrigation. Major portion of irrigated agriculture is supported by fresh irrigation water resources, which are surface and groundwater. Not surprisingly, the decrease in natural water resources caused by drought and population growth is inciting authorities to establish and to encourage the reuse of wastewater.

In this study, different hygiene treatments (control, activated carbon treatment, activated carbon + hydrogen peroxide treatment, ozone treatment and hydrogen peroxide treatment) were used for the discharge of the waste water treatment of Ankara. Following hygiene treatment, waste water was used as irrigation water for tomato. The concentration of oxygen was achieved as 10 mg/l in all treatments. Application of oxygen in treated waste water decreased EC values and some soil ions (Na^+ , Ca^{+2} , Mg^{+2} and SO_4^{-2}). At the same time, some morphological characteristics of tomato were influenced in a positive way.

Key words: Waste water, irrigation, soil, tomato, oxygen