

**EFFECT OF POTASSIUM NITRATE, GARLIC AND ONION EXTRACTS ON BUD BREAK, GROWTH, YIELD AND SOME CHEMICAL CONSTITUENTS OF APPLE (*MALUS SYLVESTRIS*, MILL) TREES.**

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**ABSTRACT**

This investigation was carried out during the two successive seasons of 2006 and 2007 to investigate the effect of potassium nitrate, garlic extract and onion extract on bud break, growth, yield and some chemical constituents of "Anna" apple (*Malus sylvestris*, Mill) variety. The trees were grown in loamy sand soil, and sprayed with six treatments (potassium nitrate 10%), garlic extract (20%), onion extract (20%), potassium nitrate (5%) mixed with garlic extract (10%), potassium nitrate (5%) mixed with onion extract (10%) and control. Generally, it was found that all studied growth parameters, date of flower bud break, percentage of bud break, fruit-setting, fruit weight, fruit size, fruit number/tree, yield/tree (kg) and some chemical constituents of leaves (total chlorophyll, total carbohydrates, total protein, nitrogen, phosphorous and potassium contents) and some chemical constituents of fruits (total soluble solids (T.S.S.), T.S.S/ acid ratio, vitamin C, water content %, total free amino acids, total carbohydrates, total sugars and reducing sugars) were increased with the application of the different treatments. The best results were obtained from the treatments of potassium nitrate at 5% mixed with onion extract at 10%, potassium nitrate at 5% mixed with garlic extract at 10% and potassium nitrate at 10%. On the contrary, the same treatments decreased total acidity and total phenols in fruits as compared to the control. It could be recommended to use potassium nitrate at 5% in combination with onion extract or garlic extract at 10% for improving bud break, growth, yield and chemical constituents of apple trees or fruits.

**Key Words:** apple (*Malus sylvestris*, Mill), potassium nitrate, garlic extract, onion extract, bud break, growth, yield, chemical constituents.