Olive (*Olea europaea* L.) belongs to family *Oleaceae*, comparatively resists drought and salinity conditions to a great extent. Therefore, it is a widely distributed tree grown in many districts. In the meantime, the greatest part of Egypt is covered by wide arid deserts and the cultivated area represents about 3% of the total area. Thereon, olive tree can be recommended as one of the commercial plants that may grow and thrive successfully under dry conditions.

As a matter of fact, olive fruits and/or olive oil production are far below the market demands. According to the latest Statistics of Ministry of Agriculture (1997), the total cultivated area of olive reached about 81929 feddans and the total fruiting area recorded about 56890 feddans with average production scored 3688 Kg.per feddan.

Several efforts have been accomplished to improve olive production through facing production problems. Briefly, two major problems pose olive growers namely: alternate bearing habit and fruit harvesting.
Firstly, an alternate bearing tree (or branch) is one that does not bear a regular crop year after year, rather heavy yields are followed by extremely light ones and vice versa. Alternation of bearing which is proverbially marked in olive tree is considered competition between vegetative and reproductive organs would cause reduced production of new branches during the “on”-year (competition with growing fruits during summer) producing a smaller number of flowers. The strong growth in the “off”-year again allows large amounts of flowers to be initiated the next year. Regular cropping, desired but rarely obtained, would occur when a very delicate balance between fully vegetative and reproductive branches is attained. Thereupon, as a point of view, earlier fruit thinning of the alternate bearing tree, which is going to an expected “on”-year through inhibition of flower bud induction may be beneficial in minimizing alternate bearing and stabilizing tree cropping. In this concern, gibberellin has been reported as one of the growth regulators that adversely affect flower induction when applied during winter (Badr and Hartmann, 1977 and Hassan, 1987).
Secondly, fruit harvesting of olive trees is considered one of the serious problems facing the olive growers from the commercial standpoint. This may be due to the fact that fruit harvesting of olive tree accounts from 50 up to 80 percent of the total costs of olive production and usually amounts of nearly 50 percent of grower gross return. Cost of harvesting is steadily increased and is amplified by the difficulty in finding the experienced pickers. Some of oil olive cultivars are harvested by placing canvas on the ground, then knocking the fruits from the trees by beating the limbs with poles. However, this method sometimes injures fruiting branches and encourage the spreads of the bacterial diseases.

The introduction of mechanical harvesting is essential for olive production. Besides, many chemicals have been tested to facilitate the abscission of the fruits harvested by shakers. Among these fruit abscission chemical agents, Also1, NAA and Thiourea have been reported to be effective in chemical harvesting.

Consequently, this investigation is initiated to achieve two main targets. Firstly: minimizing alternation of bearing and stabilizing tree cropping through the use of gibberellic acid. Secondly, facilitating and reducing the
harvesting costs of olive fruits through the use of some fruit abscission chemical agents i.e Alsol, NAA and Thiourea and determining the most effective agent, the most appropriate concentration and the more safety agent on the tree.