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Title

**A Study of some important plant hormones effects on
expression of genes involved in flowering of
Sistan Yaghooti grapevine (*Vitis vinifera*)**

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Abstract

Flowering in grape entirely affect the quality and quantity of products. Due to short growth duration, hot and dry climate of cultivation region (south east of Iran, Sistan zone), flowering duration is very short in this region. In this study, the effect of three hormones were studied *i.e.* Giberellic acid, Indole 3-acetic acid and Absciscic acid (ABA) on six crucial genes expression of flowering process (*LFY*, *API*, *MYB24*, *FLC*, *AG*, *TFLI*) during three stages of vine grapes bunch growth (pre-flowering, flowering, post-flowering). The hormone treatment led to dropping parts of flower bunch of grape, therefore mature grape treated bunches compared by control cluster were less compact. Giberellic acid hormone not only does not inhibit the motivation for flowering in vine grapes, but also stimulates the differentiation of flower meristems. The Gibberellin hormones, Indole 3-acetic acid and Absciscic acid as growth stimulants at different stages of growth caused a Impressive in the significant expression of of genes involved in the flowering process. The results of physiological and antioxidant changes also showed that the hormones absciscic acid, gibberellin and indole 3 acetic acid caused a severe decrease in protein levels, but gibberellin hormone had the least negative role in reducing the protein level of vine grape plant tissue. These hormones had different effects on physiological changes and other antioxidant enzymes at different stages of development.

Key Words: Flowering, Yaghooti grapevine, plant Hormone, gene expression, antioxidant, chlorophyll, plant physiology.