

**PHYSIOLOGICAL STUDIES ON BREAKING BUD
DORMANCY OF GRAPES (VITIS VINIFERA L.)**

By

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B.Sc. Agric. Sc. (Horticulture), Ain Shams University, 1994

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ABSTRACT

Amin Mohamed Galal El-Dine Amin Shaddad: Physiological Studies on Breaking Bud Dormancy of Grapes (*Vitis Vinifera* L.). Unpublished Ph.D., Department of Horticulture, Faculty of Agriculture, Ain Shams University, 2010.

Garlic and onion oils both at 5% and 10% and 15% and GA₃ at 150, 200 and 250 ppm in comparison with dormex 5% (commercial application) were evaluated as breaking dormancy agents on “Superior” grapevines and cuttings during 2006 and 2007 seasons.

As for Superior grapevines, these materials were sprayed on three dates, December 27th, January 5th and January 13th to study the effect on bud burst%, bud fertility %, vegetative growth parameters and yield as well as cluster and berries characteristics. The vines sprayed with 15% garlic oil and 5% onion oil on January 5th had significantly higher bud burst % and bud fertility % as compared with other treatments and dates. Vegetative growth significantly increased on vines treated with garlic at 15 %, onion at 5% and dormex in the second application dates. Garlic applications at 15 & 10 % and onion at 15% on January 13th markedly increased both number of clusters and yield per vine.

There was a positive relationship between fruit quality characteristics and garlic or onion application. Berry length and diameter; berry adherence; brush length; TSS ; TSS/acid ratio and total sugar increased with the vines treated with garlic at 15% and onion at 5% on January 5th. Whereas, total acidity was reduced. On the other hand, GA₃ at 150 ppm was not favorable treatment where it gives similar effect as the control.

As for “Superior” cuttings, an experiment was conducted to examine the interaction between chilling exposure (100, 150 and 200 hours at 7 ± 1°C) and breaking dormancy treatments on cuttings burst % and total bud burst %. The maximum percentage of cuttings burst and

total bud burst were observed with cuttings exposed to 150 hours when treated with onion at 15% and garlic at 15 %.

Key Words:

Superior , grapevines , cuttings , Breaking , bud dormancy
Dormex , Garlic , Onion , GA₃ , bud burst , bud fertility ,
yield ,fruit quality .

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