



## Growth and yield performance of 'Cabernet Sauvignon' submitted to variations of concentration and application techniques of hydrogen cyanamide in the tropical region of Brazil

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Wine grape cultivars (*Vitis vinifera* L.) used in the tropics require special management techniques to regulate the production and to obtain grapes with adequate quality level. The use of chemicals to help in overcoming dormancy and to promote uniform budburst is a wide-spread practice in warm climates regions. In temperate countries grow fruit crops require exposure to chilling to overcome the dormant period of the buds (Erez et al., 2008), that does not happen in tropical conditions. The aim of this work was to evaluate the effects of the application, painted or sprayed, and the concentration of hydrogen cyanamide on the vegetative and yield performances of Cabernet Sauvignon grapevines in the conditions of soil and climate of the San Francisco Valley, Brazil. The experiment was carried out in Lagoa Grande county, Pernambuco, Brazil (9°2'S, 40°11'W), during the 2007 harvest season, when 10, 5 and 2% of hydrogen cyanamide were applied by foam paint roller or by sprayer (this system involved an employee wearing backpack sprayer (model JACTO-PJH20) with wands 50 cm in length using a type JA2 nozzle), compared with a control modality (without application). The Tukey test was used to compare means of the treatments. Significant differences ( $p < 0.05$ ) in yield, cluster number per vine, budburst percentage, and potential and practice fertility were registered. The average yields per vine showed less efficient when 10% painted and 2% sprayed of hydrogen cyanamide were applied, which were similar to the control plants. For application by spraying, the best performance results were obtained with higher doses of 5 and 10%, while for painted application the best yields have been obtained from 5% and 2% doses. Compared to the control, these best treatments resulted in an increase in the cluster numbers, but except the 5% spraying that presented clusters per vine similar to the control. All the treatments increased significantly the percentage of budburst, and potential and practice fertility, compared to the control. It is concluded that it's indispensable the application of hydrogen cyanamide for the Cabernet Sauvignon variety in this tropical region. Furthermore, the results showed that the foam paint roller application with 2 % of hydrogen cyanamide could be the best choice, with reduction of product concentration, risk in drift and environmental impact of this treatment. This form of manual application can also increase the demand for operator, but the cost of operation is lower than the others treatments, when we analyze the price of product and the amount required.

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### References

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