Effect of Pruning Dates and Hydrogen Cynamide Application on Budburst and Performance of Table Grape Var. Stuben in Kathmandu Valley, Nepal

Ramila Dhakal[1*], Kishor Chandra Dahal[1], Padma Nath Atreya[2]

[1]Institute of Agriculture and Animal Sciences (IAAS), Tribhuvan University, Kirtipur, Kathmandu
[2]Temperate Horticulture Development Center (THDC), Marpha, Mustang

*Corresponding authors' email: ramila.dhakal3@gmail.com

Orchid Id: https://orcid.org/0000-0003-3536-1319

Abstract

Grape cultivation has great challenge in uniform budburst, and controlling vegetative growth in warmer climates. Harvesting during monsoon period is the major challenge in viticulture sector of Nepal.This experiment was proposed to prepone its natural bud burst time which results harvesting of bunches before monsoon. This experiment aims to develop the successful table grape production techniques by using Plant Growth Regulators i.e. Hydrogen Cyanamide (H2CN2)and timing of pruning. The experiment was conducted in the vineyard of warm temperate horticulture centre, Kirtipur in cultivar 'Steuben'with five treatmentsand four replication in randomized complete block design. Treatments were different timing of pruning (-15, -7, Control, +7, +15) days of current practices followed by H2CN2 application after 15 days. Different stages of grapes were recorded by using modified Eichhorn and Lorenz growth stage notation (E-L system) and physical and chemical parameters were recorded during harvesting. The highest percentage of budburst and observed fruitfulness were observed in treatment 4 (40.38% and 35.26%) and lowest in treatment 1(26.35 and 19.59) respectively. Bud burst was first observed in treatment 2 in D15 (7th March) and late in treatment 4 in D18 (18th March). Length of bunches were significantly different between the treatments and maximum length of bunch was observed in treatment 1 (13.59cm) and minimum in treatment 2 (11.96cm). All other parameters such as weight, Total Soluble Solid (TSS) and Total Titratable Acidity (TTA) was not found significantly different. Bunches of hydrogen cyanamide treated canes mature one week earlier than untreated canes. As we have done localized application of 2% solution of hydrogen cyanamide, it might not become sufficient for those old vines to alter their physiological state to obtain the expected results.

Keywords: Grapes, hydrogen cyanamide, budburst