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# FRUITFULNESS IN RELATION TO BUD POSITION IN TAS-A-GANESH GRAPE GRAFTED ON DOGRIDGE ROOTSTOCK

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## ABSTRACT

Many vine yards have been established in the Peninsular India on the Dogridge rootstock due to the salinity and water scarcity problems. However, the rootstock imparts the shoot vigor, which in turn is detrimental to the fruitfulness. Hence, the growers are practicing the method of sub cane development. To know the bud position for making the sub cane on the growing shoot the present investigation was carried out. In the present study, 7+5+3 sub cane system was found suitable by recording maximum number of fruitful canes, higher yield per vine, berry diameter, etc. The sub cane system of 6+5+3 was also found at par with the superior system.

**Key words :** TAS-A-Ganesh grape, Dogridge rootstock.

Grape is one of the major fruit crop grown in the country. Some of the popular green seedless varieties used for table purpose are Thompson Seedless, Tas-A-Ganesh and Sonaka. In Peninsular India, double pruning and single cropping is followed (Chadha and Shikhamany, 2001). Once the crop is harvested, the vine is pruned back by leaving one bud at the base of a cane. The new growth arising from the pruned cane is encouraged to build up the reserve of food material. The fruit bud differentiation takes place in the new shoot during 45 to 60 days after back pruning. In Thompson Seedless and its clone, yield is negatively correlated with the vigour (Satyanarayana and Shikhamany, 1986). Hence the growers are following the practice of sub cane development. In this pruning system, there will 60-80% fruitfulness even under adverse condition (Tambe *et al*., 1998). The fruitfulness of the bud is decided either on sub cane or on main cane during April to September period. In sub cane system, the growers are pinching the shoot at different bud position starting from $5^{th}$ leaf to $11^{th}$ leaf in different parts depending on the vigor of the vine. The lateral arising from the pinched shoot is again pinched at $5^{th}$ bud at $7^{th}$ leaf stage. The shoot arising after sprouting is again pinched at 3-leaf stage is called as 7+5+3 or 8+6+3 sub cane pruning. But, the exact information on sub cane development to obtain maximum fruitfulness is scanty and growers are in confusion and perform faulty sub cane system, which leads to reduced fruitfulness. To avoid the confusion in the growers mind, an experiment was conducted to achieve the maximum fruitfulness in Tas-A-Ganesh grapes.

## MATERIALS AND METHODS

The experiment was carried out at the Research and Development farm of National Research Centre for Grapes, Pune during the year 2002 – 2003. Four-year-old vines of Tas-A-Ganesh grapes grafted on Dog Ridge rootstock, spaced at 10' X 6' distance and trained to flat roof gable system were selected for experiment. The following sub canes treatments were imposed on the growing shoot by pinching at different position viz., $T_1$ = 5 + 5 + 3, $T_2$ = 6 + 5 + 3, $T_3$ = 7 + 5 + 3, $T_4$ = 8 + 5 + 3, $T_5$ = 9 + 5 + 3, etc. and $T_6$ = no sub cane was developed (straight cane). Five vines were selected under each treatment and were replicated four times in a randomized block design. Uniform cultural practices were followed for all the vines under the experiment during back pruning and also in forward pruning. Back pruning was done during first week of April and 40 shoots were retained on each vine by thinning out remaining shoots at 4-5-leaf stage. The sub canes were developed as per the treatments. The observations on growth parameters like cane diameter, number of fruitful canes and % fruitful canes and yield parameters viz. number of bunches/vine, average bunch weight and yield per vine and quality parameters (TSS and berry diameters) were recorded. The data was statistically analyzed as per Panse and Sukhatme (1985).

## RESULTS AND DISCUSSION

The data on growth parameters are presented in Table 1. The significant differences were recorded for the growth parameters and significantly more number of