Shoot development pattern as effected by method and time of budding in aonla (*Emblica officinalis* Gaertn)

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ABSTRACT

The investigation was carried out to study the effect of methods and time of budding on shoot development pattern in Aonla cv. CHAKAIYA. The number of determinate shoots per indeterminate shoot, length and diameter of indeterminate shoots 120 days after budding performed in last week of July was maximum as compared to budding performed at other times. The method of Modified Ring Budding was found superior to other methods of budding; however, the difference was non-significant.

Key words : Aonla, Budding, Time, Shoots

Aonla is a fruit plant which can be grown even in most adverse soils. It has a high medicinal value in Indian Ayurveda. Aonla tree bears two types of shoots *viz.,* indeterminate and determinate. The indeterminate shoots are longer and continue to grow. Neither they bear flowers nor do they fall from the tree but they play a significant role in development of framework. The determinate shoots arise from nodes of indeterminate shoots and bear fruits. The information on the influence of methods and time of budding on shoot development pattern is very meagre. Taking this into account, the present investigation was undertaken.

MATERIALS AND METHODS

The present investigation was undertaken in the year 2006-2007 at the experimental farm of SKUAST- Jammu. One year old seedlings were brought from nursery as rootstocks. Vigorous and uniform scion shoots with well-swollen buds were taken from mother plants for budding. Three methods of budding *viz.*, shield, patch and Modified Ring Budding were performed at four times of budding *viz.,* last week of July (T_1), second week of August (T_2), last week of August (T_3) and second week of September

(T_4). The treatments were replicated four times in a Randomised block design (factorial). The days were counted from date of budding to date of initiation of indeterminate shoot on each individual plant in each treatment and the average numbers of days were computed. The number of determinate shoots per indeterminate shoot was counted 120 days after budding. The length of indeterminate shoot was measured with a scale from base to terminal end of sprouted shoots and diameter of indeterminate shoots was recorded with a vernier caliper. Data were analysed as suggested by Panse and Sukhatme (1985).

RESULTS AND DISCUSSION

The data presented in Table 1 pertains to number of determinate shoots per indeterminate shoot 120 days after budding. The data revealed that method of budding did not show any significant effect on number of determinate Shoots. However, the time of budding had a significant effect on number of determinate Shoots. The Modified Ring Budding performed in last week of July (T_1) resulted in highest number of determinate shoots (23.20) followed by shield budding (20.38). The rest of the budding (T_2,

Sr. No.	Methods of budding	Times of budding				
		T_1	T_2	T_3	T_4	Mean
1.	Shield budding	20.38	10.54	13.60	14.02	14.63
2.	Patch budding	13.46	15.10	15.10	13.90	14.35
3.	Modified ring budding	23.20	14.46	13.45	13.26	16.09
	Mean	19.01	13.86	14.05	13.72	

Table 1 : Impact of methods and time of budding on number of determinate shoots per indeterminate shoot at 120 days after budding in aonla cv. CHAKAIYA

C.D. (P=0.05) Method = NS; Time = 2.30;   Method x time = 0.70;

T_1 = Budding in last week of July, T_2 = Budding in second week of August, T_3 = Budding in last week of August,

T_4 = Budding in second week of September