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Scientific Approach to Enhance the Income from Guava Orchards

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stract

se studies were carried out to find the effect of deblossoming of summer crop on the succeeding winter crop. It has n observed that deblossoming at full bloom stage showed promising results to increase the number of flowers, fruit set centage, size, weight and yield of fruit and to decrease the flower and fruit drop. Time taken for flower bud opening and t maturity was also reduced thus an early winter crop was obtained. Deblossoming at unopened bud stage and fruit ning at different intervals after fruit setting also showed better results than control. Fruit thinning at later stages after t setting, had decreasing affect on yield.

roduction

va (*Psidium guajava* L.) is a very popular crop among growers due to its adaptability to various soils and atic Conditions, a rich source of vitamin-C, high income n its two crops in a year, favourable taste for the eral public and its availability in the market for longer e period than any other fruit. McLaughlin and Greene 91) reported that combination of sprays of BA at 50 itre and daminozide at 2000 mg/litre after flowering to s of early McIntosh apple, removed flowers before full m which ultimately increased return bloom, more fruit ing and decreased flower and fruit drop, early flower ning and fruit maturity in the succeeding crops as pared to control. Navarro *et al.* (1990) studied bearing non-bearing trees of olive. Flowering was inhibited with (1000 ppm) or fruit removal was carried out from ily blooming trees. Flowering was promoted in the wing season. An increase in bud size on non bearing as pared with bearing trees was found. Flower opening also found early. Fruit size and weight increased which nately enhanced yield. Birrenkott and Stang (1990) ducted an experiment on removal of flowers of *cinium macrocarpon* cv. Searles during 1987 and 1988. d was enhanced upto 25 percent in the succeeding . When the buds are removed before opening, 46 ent fruit setting was observed as compared to late oval of buds giving 36 percent fruit setting. When buds e removed before opening and natural insect pollination supplemented by hand pollination. The resultant fruit was 58 percent compared with 17 percent in the inned control. Jansky and Thompson (1990) conducted ld trial on potatoes in 1987. They removed flowers cv. ND 860-2 grown under irrigated conditions and ers were removed from cv. Norchip, ND 2008-2 and 360-2 grown under dryland conditions. Flower removal ND 860-2 in 1987 significantly increased yield but e was no significant increase during 1988. It was luded that flower removal response depends on onmental conditions. Auchter (1977) emphasized the that heavy cropping in 'on' year may be injurious to e trees by causing weak growth which results few s to be matured with smaller size and less weight in year. Joribam and Saholia (1991) found that with the oval of flowers from summer crop of guava, the tant winter crop was too early than control giving higher yields of best quality fruits. Omuchle *et al.* (1992) concluded that instead of having two crops (with infested one crop) in a year, we can get healthy and disease free single crop which will give more income from guava orchards.

Materials and Methods

Studies were conducted in a private garden Chak No.123/J.B., Faisalabad, during 1995-97 for two consecutive years. The experiment was laid out according to RCBD with seven treatments and three replications, thus twenty one guava trees growing under similar agroclimatic conditions, uniform in age and size were selected. Deblossoming and fruit thinning were done on whole the tree by ordinary hand picking method.

Total number of flowers, flower drop, fruit set, fruit drop, matured fruit and yield was noted by visual counting at each stage. Time taken for flower bud opening was counted in days from the appearance of a bud till its opening and the time required for the maturity was also calculated in days from fruit set to complete maturity. A composite sample of five fruits was used and average was taken for weight of fruit. Size of fruit was also noted for a sample of five fruits and average was taken.

Statistical analysis were performed according to the recommendations of Steel and Torrie (1980).

Results and Discussion

Time taken for flower bud opening: Deblossoming took the least time and control took maximum time for bud opening. Fruit thinning after 60 days of full bloom also found least effective and is at par with control (Table-1) because after passing this period, the fruits were near to maturity and the energy of the tree had been used up.

Number of flowers: Maximum number of flowers were noted in deblossoming at full bloom followed by deblossoming at pink bud stage. Control produced least number of flowers, due to complete exhaustion of the tree in season (Table 1). Increasing the time of fruit thinning from blooming, the flowering in succeeding crop was found decreasing.

Flower drop: Maximum fruit drop was observed in control because in this case, heavy summer crop used up all the stored food of the plant and nothing was left to hold the

Table 1: Effect of deblossoming and fruit thinning of summer crop on the succeeding winter crop of guava (Means of two years data).

Treatments	Days for flower opening	No. of flower	Fruit set %	Fruit matured %	Days for fruit maturity	Size of fruit(cm^2)	wt.of fruit (gms)	Yield (kg)	Flower drop(%)	Fruit drop(%)
Control	32.47 a	44.80 g	21.13 g	18.12 e	86.41 a	80.93 c	82.47 c	21.70 g	67.12 g	76.07 a
Pink bud stage	29.03 b	484.70 b	56.86 b	39.92 b	74.21 d	110.40 ab	104.31 b	47.51 b	42.71 d	54.12 e
Full bloom	25.21 d	652.66 a	63.19 a	43.21 a	72.02 e	124.26 a	109.92 a	49.37 a	36.32 f	51.21 g
15-days after full bloom	26.11 c	308.13 c	50.60 c	37.22 b	71.41 f	106.12 ab	103.11 b	39.33 c	38.42 c	53.27 f
30-days after full bloom	27.91 c	138.86 d	46.15 d	32.43 c	74.10 d	94.42 bc	98.34 c	34.19 d	43.71 d	57.17 d
45-days after full bloom.	29.01 b	96.42 e	43.70 e	28.63 d	76.19 c	92.19 bc	97.21 c	31.34 e	51.92 c	61.22 c
60-days after full bloom	32.01 a	52.12 f	38.12 f	20.36 e	80.42 b	91.21 bc	92.41 d	27.04 f	57.10 b	67.91 b

The means having different letters are significant from each other at 0.5% level of significance.

flowers, this is also clear from deblossoming at full bloom which showed minimum fruit drop due to proper maintenance of health as a result of complete deblossoming. Other treatments also vary significantly from one another due to this factor (Table 1).

Fruit setting: Maximum fruit setting was noted in deblossoming at full bloom due to proper health and vigour of the tree. Control remained at bottom and gave the least fruit set %age because all the food reserves of the tree had been used by the previous summer crop. Tendency of fruit setting is decreasing by increasing the time of fruit thinning after full bloom (Table 1).

Fruit drop: Almost same pattern of fruit drop was found as in case of flower drop. Maximum fruit drop was observed in control and minimum in deblossoming at full bloom. Other treatments also vary significantly from control.

Matured Fruit: No statistical difference could be located between control and deblossoming after 60 days (Table 1) because in deblossoming after 60 days, fruit thinning was practiced after 60 days of full bloom and during this period most of the stored energy of the tree had been used up for fruit development and the succeeding crop could not get its proper share.

Time taken for fruit maturity: Fruit growth and development mainly depend upon stored carbohydrates. For this season deblossoming at full bloom took the least time and control took maximum time period for fruit maturity. Because, in control all the reserve foods had been used up and in full bloom nothing is used by the previous crop. Other treatments got the intermediate position (Table 1).

Fruit size: Table 1 clears the outranking of deblossoming at full bloom in which maximum sized fruit was observed. Control produced smallest sized fruits. Other treatments are at par with each other and no statistical difference could be located.

Weight of fruit: Deblossoming at full bloom reserved the right of its ruling our other treatments by producing fruit with maximum weight. Deblossoming at pink bud stage and deblossoming after 15-days of full bloom are at par. Similarly, deblossoming after 30 and 45 days are statistically at par. Control produced fruit with least weight because in this case the tree could not provide proper food for fruit development (Table 1).

Yield: Yield is directly concerned with number, size and weight of fruit. As deblossoming at full bloom produced maximum number of fruits with biggest size and more weight, so highest yield was obtained. Lowest yield was found in control other treatments also vary significantly from one another. Plant health and vigour affects greatly to increase or decrease the yield. In deblossoming at full bloom, the trees remained much healthy and vigorous, thus maximum yield was obtained (Table 1).

Discussion

From the results of present studies, it has been proved that disbudding of the guava plants just at the time of flower opening from summer crop, enhanced the yield, improved the fruit quality and ripened the fruit earlier in winter crop. Our results are in agreement with the findings of Jaribam and Saholia (1991) and Omuchle *et al.* (1992) who had obtained improved guava production but in our project, we have removed the flowers and fruits at different intervals instead of removing the whole flowers at one time.

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