

## EFFECT OF SIZE OF SUCKERS ON GROWTH AND YIELD IN PINEAPPLE (*ANANAS COMOSUS*. MERR.) cv. KEW

S. BALAKRISHNAN, N. K. NAYAR and VALSAMMA MATHEW,  
*Kerala Agricultural University, Vellanikkara 680 654, Trichur, Kerala*

Pineapple is a fruit crop propagated exclusively by vegetative means, the most popular planting material being suckers. The size and weight of planting material exert considerable influence on the growth and productivity of vegetatively propagated crops. Anakeri and Patil (1956) have reported a higher yield in onion when large sized bulbs were used for planting. Ramaswamy and Chokalingam (1975) and Bhan and Majumdar (1961) have also reported the effects of planting materials in Tuberose and Banana respectively. Singh and Singh (1975) have reported that the suckers weighing 500 g resulted in better growth and higher yield in pineapple under Coorg conditions. Reynhardt and Dalldorf (1968) found that medium and large suckers fruited earlier. Mitchell (1962) recorded that heavier planting materials resulted in heavier fruits. The optimum size of sucker required for ensuring good yields in Pineapple remains to be standardised under Kerala conditions. In order to assess the influence of size of suckers in relation to number of leaves, length and average weight of suckers on growth and yield of the Pineapple variety 'Kew' studies were undertaken at the Pineapple Research Centre, Kerala Agricultural University Main Campus, Veltanikkara, Trichur during the year 1976-78.

### Materials and Methods

Suckers of the following specifications were used in this experiment. The Randomised block design was followed for the experiment, there being four replications. There were 280 plants in each treatment and the spacing was 25 cm between plants, 60 cm between rows and 90 cm between trenches.

No. of leaves	Mean length of sucker in cm.	Average weight of sucker in g.
8-12	26	130
13-17	37	210
18-22	47	260
23-27	58	400
28-32	69	650

Flowering was induced artificially by applying a combination treatment of 25 ppm Ethrel plus 2% Urea plus 0.04% Calcium carbonate on the 18th month of planting. Observations on vegetative characters, namely, leaf production

per plant and leaf area of 'D' leaf at intervals of six and eighteen months after planting and yield characters, namely, fruit weight with and without crown, crown weight, L/B ratio and canning ratio of fruits were recorded and analysed statistically.

### Results and Discussion

In respect of leaf production, significant variation existed between the treatments (Table 1). The suckers having more number of leaves showed better leaf production. In respect of leaf area, significant difference existed only at 6th month of planting. Even though the size of suckers did not influence significantly on the yield of the plants, the maximum yields were recorded in suckers planted with maximum number of leaves and weight. The crown weight in these treatments were also comparatively less.

In the present study, in general, it is revealed that suckers of different sizes behaved alike in their production potential. This shows that there is no carry over effect of planting material on the resultant crop if good management practices are adopted. The advantages of smaller suckers on survival percentage, early establishment and better growth vigour as compared to bigger suckers have already been reported by Singh and Singh (1975) in Pineapple. They have also advocated the necessity for providing more nutrients and water for larger suckers to overcome transplanting shock. Chowdhary (1947) has also reported an early and better field establishment of smaller suckers. According to him, the smaller suckers with their early vigour and establishment is able to compete with the bigger suckers and ultimately at the stage of completion of vegetative phase the differences will be nullified.

As in Package of practices, the hormonal application to induce flowering was done during the 18th month of planting. Since then none of the treatments showed natural flowering, even though Singh and Singh (1975) reported an early and higher percentage of flowering in large sized suckers. In the present investigation all the treatments showed excellent flowering after hormonal application. This clearly shows that irrespective of the size of suckers used for planting, all the plants were ready for artificial induction of flowering on the 18th month of planting. There was no significant difference between treatments for fruit yield with or without crown. Singh and Singh (1975) reported that medium size of suckers along with medium levels of nitrogen resulted in maximum production in Pineapple. Eventhough Mitchell (1962) reported heavier fruits in heavier planting materials, Reyhardt and Dalldorf (1968) are of the opinion that both medium and larger suckers are equally good for early and better yield. But in the present investigation, it has been clearly shown that the size of sucker need not be taken as a major criterion in Pineapple cultivation for obtaining satisfactory yields if good management practices combined with growth regulator application at full maturity of vegetative phase are resorted to.

Table i

Vegetative and Production characters in pine apple as influenced by sucker characters

Treatments	No. of leaves per plant		Leaf area of 'D' leaf in sq cm		Fruit weight with crown	Fruit weight without crown	Crown weight
	6th month after planting	18 th month after planting	6 th month after planting	18 th month after planting	kg	kg	kg
8—12 leaves	22.64	37.15	396.94	311.91	1.76	1.48	0.285
13—17 leaves	27.88	39.59	377.75	298.78	1.72	1.46	0.264
18—22 leaves	30.57	44.81	441.38	317.16	1.96	1.68	0.281
23—27 leaves	30.64	43.68	499.44	298.25	1.90	1.63	0.273
28—32 leaves	33.56	45.88	476.80	297.24	1.99	1.71	0.230
CD at 1%	3.80	5.27	71.32	NS	NS	NS	NS

NS—Not significant"

### Summary

Studies carried out at the Pineapple Research Centre, Kerala Agricultural University, Vellanikkara during 1976-78 on the effect of different sizes of suckers on growth and yield in pineapple variety 'Kew' revealed that the productivity of the crop is not influenced by the size of suckers used for planting.

### സംഗ്രഹം

കേരള കാർഷിക സർവ്വകലാശാലയുടെ ആഭിമുഖ്യത്തിൽ വിവിധ വലുപ്പത്തിലുള്ള കൈത്തലകളുടെ ഉല്പാദനക്ഷമതയെക്കുറിച്ച് പഠനം നടത്തുകയുണ്ടായി. 26 മുതൽ 69 സെന്റി മീറ്റർ വരെ നീളത്തിലുള്ളതും, 130 മുതൽ 650 ഗ്രാം വരെ തൂക്കം വരുന്നതുമായ തലകളാണ് പരീക്ഷണത്തിന് വിധേയമാക്കിയത്. പരീക്ഷണത്തിൽ നിന്നും നല്ല സംരക്ഷണം നൽകുന്ന പക്ഷം, ഏതുതരം വലിപ്പത്തിലുള്ള കൈത്തല നടുവാൻ ഉപയോഗിച്ചാലും ഉല്പാദനക്ഷമതയിൽ കാണുന്ന വ്യത്യാസം ഉണ്ടാവുകയില്ലെന്ന് മനസ്സിലാക്കുവാൻ സാധിച്ചു.

### References

Anakeri, H. R., and Patil, S. S. 1956. Effect of bulk size and time of planting on the yield of onion seed. *Indian J. Agron.* 1, 75-79.

Bhan, K. C. and Majumdar, P. K. 1961. Propagation trials in banana. Effect of age of suckers and season of planting on banana production. *Indian J. Hort.*, 18, 187-191.

Chowdhary, S. 1947. Pineapple culture in Assam. *Indian Fmg.*, 8, 187-190.

Mitchell, A. R. 1962. Plant development and yield in the Pineapple as affected by size and type of planting material and times of planting and forcing. *Qd. J. Agric. Sci.*, 19, 453-466.

Ramaswamy, N. and Chockalingam, P. 1975. Influence of weight of tubers on yield of tuberose. *Progressive Horticulture*, 8, 39-41.

Reynhardt, J. P. K. and Dalldorf, E. R. 1968. Planting material for the cayenne Pineapple. *Emg. S. Ah.* 44, 24-25.

Singh, U. R. and Singh, D. V. 1975. Effect of suckersize and levels of nitrogen on growth, yield and quality of giant Kew pineapple (*Ananas comosus* L. Merr). *Progressive Horticulture*, 7, 31-40.

(M S Received: 29-2-1980)