So with these four changes viz., banning of ratoons, replacement of the diseased variety, early planting and proper manuring in time, we have been able to push up the yield from 18 tons to 30 tons per acre. The sucrose content of cane has also been increased.

Thus by banning ratooning and taking precautions regarding the purity of the seed material used for planting, the yield can be improved by at least 6 to 8 tons per acre. Any arguments regarding the increase in the cost of cultivation due to banning of ratoons do not stand, as the ryot is more than compensated by the increase in yield. It is expected that next year the yield will be still better, because the area planted in the month of January and February would be about 150 acres against 500 acres this year. There is, of course nothing new in the methods adopted, but they show what can be achieved by persuading the ryots to give up his old accepted practices.

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https://doi.org/10.29321/MAJ.10.A04474

Observation on the "Bud Take and Scion Growth of Peach trees as influenced by rootstocks"

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(Received on 6—7—1949)

Among the numerous fruits tried at Coonoor, some varieties of peach were found to be promising, though like all introduced fruits, the peach has yet to be studied in respect of nursery and orchard practices. Till now shield budding has been the rule in peaches under Coonoor conditions, the common peach being the only rootstock employed for the purpose. The optimum age of common peach seedlings for bud insertion and the relative rate of growth made by different peach scion varieties when worked on rootstock of different sizes or ages are not yet known and there has been a great deal of diversity in the prevailing nursery practices. The tendency to prefer large plants for planting is also based on the belief that large plant size at planting time will mean earlier and better yields in the orchard. The initial advantage ascribed to plants of large size is a subject well worth study from the standpoint of the peach grower. To the peach nurseryman, such a study would enable him to restrict his propagational activities to the production of the optimum plant size and also reducing the large variation that is met with in regard to nursery tree size. With these ends in view a small-scale trial was started in 1948 at the Pomological Statoin, Coonoor.

Two well-known varities of peach, Shanghai Seedling and Red Shanghai were selected for the trial, to be budded on common peach seedling. The seeds of the latter were sown on three different dates, to give seedlings of three age-groups at the time of bud-insertion of 8, 20, and 32 months, from the date of transplantation from seed to nursery beds. The bud insertions were all made by one operator during the first week of February 1948, employing the common shield method with no wood attached to the bud shield. All the buds were taken from a single selected parent in either scion variety. About three months after the bud insertion data on 'bud take' were recorded. Four weeks later, in the last week of June 1948, growth measurements of the plants were taken to give an idea of the plant growth measurements in a period of four and half months after bud insertion. The data are given below.

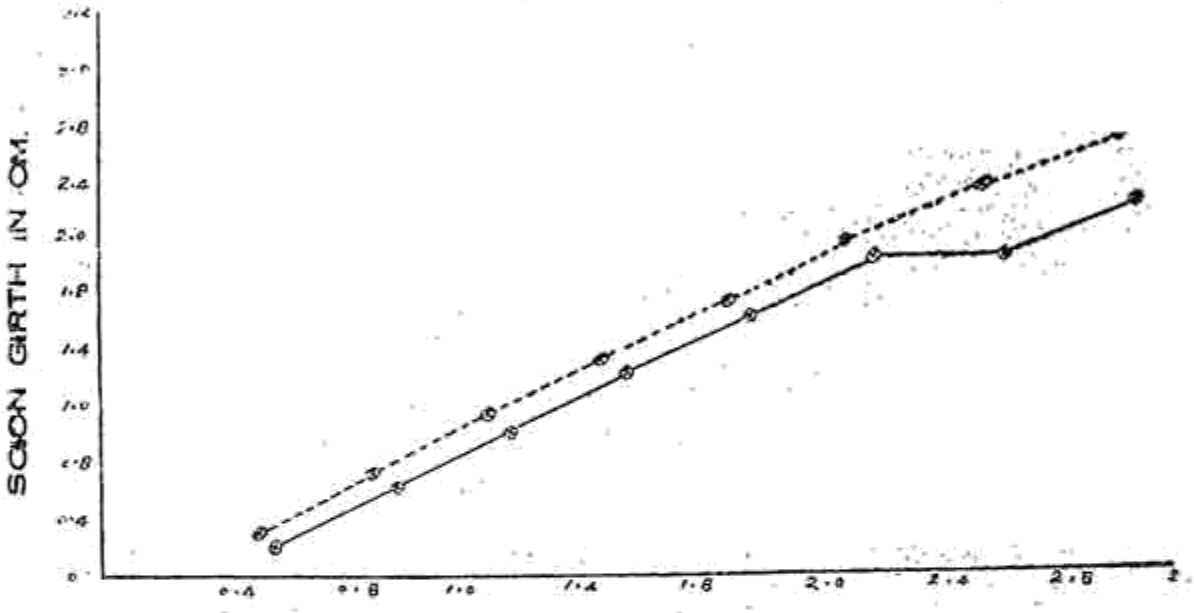
Scion	Age of the common peach seedling at bud-insertion stage	No. of bud insertions made	Number successful	Percentage of "bud-take"
Shanghai seedling	8 months	65	53	80·6
	20 ,,	65	62	95·4
	32 ,,	65	47	72·8
Red Shanghai	8 ,,	65	36	55·4
	20 ,,	65	52	80·5
	32 ,,	65	48	73·8

The data indicate that seedlings of 20 months of age in both varieties provide the most suitable material for budding. Although the actual percentage figures for other age groups are not appreciably different, it would seem that with Red Shanghai, 8 month-old seedlings are unsafe to be used since the 'take' is less by about 25 per cent. At the trial was restricted to a limited number of age groups, it is not possible to generalise from these data or to infer that other age groups may not be found as suitable as 20 month-old seedlings. For the present it may be stated that 20 months old seedlings can safely be employed for bud insertion. Growth measurements made upto $4\frac{1}{2}$ months after bud insertion are represented in the accompanying graph.

A fair indication was observed that the scion stem growth increments keep pace with the rootstock stem growth increments. In other words, the thicker the rootstock stem the faster is the pace of scion growth during the early stages of development. The same inference seems possible from a study of the relationship between the rootstock stem growth and the scion stem extension growth or scion stem height as well as between the former and the number of branches produced by the scion.

FIG. I.

Graph Showing Relation between Rootstock Girth and Scion Girth.



Rootstock Girth in CM.

——— Shanghai Seedling.
..... Red Shanghai.

Summary: (1) From the point of "bud take", common peach seedling of 20 months of age appear to provide the optimum age group for peach bud insertion. (2) Scion growth increments in the first four and half months period after bud insertion seems to keep pace with the root-stock stem size.

Acknowledgement: My thanks are due to Sri U. Narasinga Rao, Assistant Fruit Specialist, for the kind guidance given in conducting this trial and to Sri K. C. Naik, Fruit Specialist, Madras for his valuable assistance in the preparation of this paper.