

**NOTE**  
**ON**  
**PRELIMINARY RESULTS FROM THE STUDY**  
**OF SEEDLING TREES DERIVED FROM**  
**PROVED CLONES**

**BY**  
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During the period 1928 to 1931 experimental work on breeding of Hevea was carried out by Mr. L. E. Morris, formerly Geneticist, in the Botanical Division. Hand pollinations were made between a number of different clones established on Pilmoor Estate, Batu Tiga. The clones used have been studied and tapped under the supervision of the Botanical Division from January 1928 and this work is still in progress.

As a result of the first season's work with hand pollination some 200 seedlings of known parentage were obtained and these were planted in April—June 1929 on the R.R.I. Experiment Station, (Experimental Block 4. A.)

TABLE I  
*Yields of Seedlings derived from proved Clones*

Family	No. of Trees	Yield in pounds dry rubber per tree per year Age 5½ to 6½ years
A44 x B58	11	6.8
A44 x D61	30	7.9
A44 x B16	27	7.4
B84 x A44	8	8.0
D61 x A44	43	7.7
B16 x A44	7	7.5
A44 Illegitimate seedlings	125	5.9
B58 "	64	4.6
B84 "	14	5.7
D61 "	22	4.2
B16 "	3	2.7
Ordinary, estate seedlings	29	1.8

Interplanted with these legitimate crosses were seedlings of illegitimate origin from the various clones used in making the crosses and other seedlings from ordinary estate seed. After preliminary periods of test-tapping in 1933 and 1934 regular tapping was commenced in January 1935. All trees having a girth of 20 inches at 20 inches from ground level were tapped alternate-daily on half circumference with a single left to right cut at a slope of 20 degrees. The seedling material at present under investigation includes crosses made between the best of the Pilmoor clones and illegitimate seedlings grown from identified seeds of the various clones collected from the original buddings on Pilmoor Estate. The illegitimate seedlings may have been produced by cross pollination with buddings of other good clones with buddings of inferior clones, or with ordinary seedling trees surrounding the small experimental area in which the original buddings have been established. The yields obtained during the first tapping year from the most promising families of crosses and illegitimate seedlings from the various clones are tabulated below.

TABLE II

*Comparison of Yields of Seedlings (Legitimate Crosses) Seedlings (Illegitimate) and Buddings of the Parent Clones*

Family	No. of trees	Yield of dry rubber in pounds per tree per year. Age 5½ to 6½ years
A8 x A44 Crosses	5	6.2
A44 Illegitimate	125	5.9
A8 "	37	3.9
A44 x B58 Crosses	11	6.8
A44 Illegitimate	125	5.9
B58 "	64	4.6
A44 x D61 Crosses	30	7.9
A44 Illegitimate	125	5.9
D61 "	22	4.2
A44 x B16 Crosses	25	7.4
A44 Illegitimate	125	5.9
B16 "	3	2.7
B84 x A44 Crosses	8	8.0
A44 Illegitimate	125	5.9
B84 "	14	5.7
Buddings of the Parent Clones		
A44	54	6.6
B58	34	7.3
D61	14	6.9
B16	38	9.7
B84	17	7.4

The early results indicate that the legitimate crosses are on the whole high yielding trees. At the same time, the illegitimate seedlings of Clones A44 and B84 also give very promising yields. It will be noted that A44 is one of the parents in all the "pedigree" families. The particular value of clone A44 as a parent is also illustrated by the results tabulated in the second table. In addition, the yield records of buddings of the several parent clones at comparable age are also recorded for comparison with the records of the new seedling families.

The results tabulated indicate that:—

- (a) The actual yields obtained from "pedigree" seedlings produced by careful hand pollination between high-yielding parent clones are approximately equal to the yields of budded trees of the same parent clones during the first tapping year.
- (b) Pilmoor Clone A44 appears to be a very valuable parent for the production of high-yielding seedling families. Clone B84 may also prove to be equally valuable but further families in which this clone has been used as a parent must be investigated to establish this with certainty.
- (c) The yields of illegitimate seedlings of all the clones used are inferior to the yields of buddings at comparable age.
- (d) Although A44 is the lowest yielding of the five principal clones used in this breeding work its seedlings are among the highest yielding groups studied. The high yields of the illegitimate seedlings of Clone A44 are particularly noteworthy.

It is necessary to sound a note of warning regarding the value of Clone A44 as a parent. The previous history of the clone indicates that the budded trees of A44 reach a high yield level at a very early age and thereafter the rate of increase in yield is slow. It will be necessary, therefore, to study the behaviour of seedlings derived from A44 for a number of years in order to ascertain whether the precocity shown by the buddings is inherited by the seedlings derived from this clone.

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