# THE AREA UNDER BUDDINGS IN MALAYA

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SINCE we published in *The Tropical Agriculturist* figures on the areas under budgrafted rubber in the Dutch East Indies, we have come across some recent statistics on the budgrafted areas in Malaya (Rubber Statistics Handbook 1935). We need not point out that Malaya is the largest rubber-producing country and has the biggest acreage under rubber. The area under rubber is, in round figures, over 1·5 million acres in the Federated Malay States, whilst the Straits Settlements and Unfederated Malay States account for about the same figure, so that the total area under rubber is well over 3 million acres.

At the end of 1934 out of this total there was an area of 204,691 acres under budded rubber, a percentage of roughly 6·5 per cent. This figure is much lower than the percentage figure for the Dutch East Indies.

Among the various groups of States and territorials, which form Malaya, we find that the Federated Malay States contain more than half the total of the budded area. The figures are:

Budded area at the end of 1934

| | | |
|---|---|---|
| Perak ... | ... | 13,001 acres |
| Selangor ... | ... | 31,589 ,, |
| Negri Sembilan | ... | 41,174 ,, |
| Pahang ... | ... | 17,598 ,, |
| | | 103,362 ,, |

The figures for the Straits Settlements are much lower. For Penang (21 acres) Singapore (10 acres only!) and Province Wellesley (354 acres); the acreage is insignificant; Malacca with 4,012 acres and the Dindings with 3,372 acres make a better show, but the total for the Straits Settlements, 7,769 acres, is even, in proportion to the total acreage under rubber, lower

than for the other groups. Among the three Unfederated Malay States, Johore is leading with 63,930 acres, surpassing even the best figure of the Federated Malay States. Kedah with 25,537 acres also makes a good show, while Kelantan has only 4,093 acres; so that the total for the Unfederated Malay States is 93,560 acres.

The final addition for the area under budgrafted rubber at the end of 1934 is as follows:

| | | |
|---|---|---|
| Federated Malay States | ... | 103,362 acres |
| Straits Settlements | ... | 7,769 ,, |
| Unfederated Malay States | ... | 93,560 ,, |
| | | 204,691 ,, |

Another table given for each state or province classifies the areas according to the year in which they were established, but these figures do not go further than the end of 1933. Added together for the whole of Malaya we find the following acreages:

| | |
|---|---|
| 1922 (and earlier) | 5,051 acres |
| 1923 | 1,189 ,, |
| 1924 | 1,066 ,, |
| 1925 | 476 ,, |
| 1926 | 1,900 ,, |
| 1927 | 8,160 ,, |
| 1928 | 9,452 ,, |
| 1929 | 29,268 ,, |
| 1930 | 46,088 ,, |
| 1931 | 34,207 ,, |
| 1932 | 27,600 ,, |
| 1933 | 7,270 ,, |
| | 171,727 acres |

We see from these figures that budgrafting was taken up in Malaya as a means of improving rubber planting material at an early stage.

In 1922-23 budgrafting was started on the well-known estate Prang Besar, which has contributed some very good clones to our available planting material. In the following years much of the budding in Malaya was still done with budwood from high-yielding estate trees.

In 1926 we find an increase. In this year the first budwood from the Avros clones in Sumatra was introduced on estates in Malaya and was probably used on several estates for laying out small testing plots; budding with estate clones continued. We thus see a gradual increase, until in 1928 several large groups decided to go in for budgrafting on a large scale. Budwood was imported in large quantities from Java and Sumatra and used for budding in the field plantings of 1, 2 and even 3 years old. Then come the years of large extensions, often still by budding young plantings in the field, the period 1929-1931. It is probable that, had the slump not set in, this development would have gone on, and would have led to a much larger budded area in Malaya.

The extensions of 1932 and 1933 were probably made to a large extent with buddings made in the nursery or, if the budding was carried out in the field, on young plantings already laid out for the purpose. The slump then made itself felt more and more and it reduced budding activities without, however, stopping them altogether.

It will be curious to watch the development in the next years. In 1935, extension of budded areas in the countries adhering to the restriction scheme can only be effected by replanting old fields. Considerable replanting is going on this year in Sumatra; in Malaya it has not been so popular, but now that the restriction authorities have been more lenient on this point and have reduced the cut in the assessment for the replanted area to 110 lb. per acre, we may expect that replanting will be taken up on a much larger scale in 1936.

With replanting, the main object is that we want to increase in our plantings the percentage of improved material. Under the present restriction law 20 per cent. of the total area may be replanted before the end of 1938. That means for the whole of Malaya, with its total area of over 3 million acres, over 600,000 acres. But not all the owners of old plantings of ordinary seedlings will use their rights to replant to the full extent. The native rubber planter, on his small-holding will probably not be able to do much in this line for various reasons, and few even of the European-owned estates will replant the whole acreage to which they are entitled. I think that we cannot expect more than a doubling of the total area under buddings during the restriction period for the whole of Malaya.

Will all the improved material used for replanting be budded rubber ? I do not think so. For replanting, preference goes to seedlings of improved yielding capacity, and if we had already strains of seedlings available of a known, proved yielding capacity equal to that of our best clones, I do not doubt that such seedlings would be used in preference to buddings. But we are not in that position yet. We only know that a few clones — mainly Avros clones — give good seedlings, and that some other clones give poor seedlings. The Avros Station especially has done valuable work in this respect, testing seedlings from various origins. Very little is known of the value of other clonal seedlings. We have seen some figures of the yields of mixtures of clonal seedlings, but what we want to know is: what yields may we expect from seedlings of a certain clone, especially when they come from monoclonal fields of a fair size, so that we are sure that the seeds are practically pure.

In this respect Malaya has a great advantage over Java and Sumatra, in so far that in Malaya most estates have gone in for monoclonal planting. The same can be said of French Indo-China and in both countries, from 1934 on, plantings have been made with seeds from monoclonal fields, which in a couple of years will show us which clones we should choose for our seeds. The great variety of clones used in Malaya — clones developed locally as well as introduced from Java and Sumatra — increases the chance that some exceptionally good strains will be found.

We must also mention a second difficulty with seed planting, and that is that a large number of seeds is required per acre, while the seed crop is sometimes poor — as was, for instance, the case this year in Malaya and Sumatra. It depends upon the system scheduled for thinning out, how many seeds will be used per acre; the number may vary from 5,000 to 500, but it will rarely be under the last mentioned. The seed crop will vary also for the various clones. We have seen an instance where the crop could be estimated at about 25,000-30,000 per acre, and others where one hardly could find a seed pod on the trees.

These factors make it improbable, that seedling planting will be undertaken on a very large scale in Malaya before the end of the present restriction period.

However, that in Malaya a keen interest is taken in the seedling problem may be concluded from the last Annual Report (on 1934) of the Rubber Research Institute, where (on page 65) the Head of the Botanical Division writes:

> "It is, therefore, extremely interesting to record that there is hardly any other subject of investigation in the Botanical Division, which has aroused more interest during the latter half of the year 1934 than the progress of the work on budding and selection of high-yielding seedling trees."

In most of the rubber-producing countries, the planting industry begins to realise that the restriction years should be used for replanting part of the estate with improved material so as to come out of the first restriction period with plantings better armed to keep up competition.