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# CONTRIBUTION OF THE IRCA TO THE IMPROVEMENT OF PROPAGATION, BY BUDDING, OF *HEVEA**

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An important part of the research work at the IRCA aims at the reduction of the intra-clonal variability. Variation of yield and girth within clones has been more often imputed to local environmental factors and to different genotypes of the rootstocks. Observations made at the IRCA lead to the conclusion that, although isogenic, all the buds from the same clone cannot be considered to be equally effective in expressing the potential of the clone ; physiological age and position of the buds are factors to be taken into consideration.

It appears that the reduction of the intra-clonal variability can lead to three choices: choice of the best rootstock inside a family, choice of the best bud within a clone, and choice of the best budded rubber tree in a monoclonal stand.

Choice of the rootstock is done in the nursery. Here a new criterion is used: the number of leaf storeys as an indicator of the speed of the rhythm of growth by flushing. The rhythm of growth is genetically determined and is directly connected with cambial activity which induces the success of budgrafting and also the initiation of latex vessels.

The choice of the young seedlings (four months old) which have the best rhythm of growth leads, at the time of the budding (ten months), to a more homogenous and vigorous stand.

Concerning the value of the buds, a descriptive study has been performed on trees planted in the field, in order to find out which of the buds will produce branches or by flowers. It has been possible to point out that branching never occurs on scale buds but always on leaf buds; in the same manner the scale buds develop only flowering axes.

By an original technique called " multiple budgrafting", leaf buds and scale buds coming from the same flush have been compared in several cases, under controlled conditions of homogeneity of rootstock. These experiments have shown that scale buds are more sensitive to ageing by physiological processes than leaf buds. This finding has to be considered for brown budding, and the maintenance of the budwood nurseries.

Preliminary results presently available, show the advantages of a high density planting with budded stumps, followed, eighteen months later, by a thinning based on girth. Effect on homogeneity of girth and the subsequent level of yield is obvious.

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* (Abstract of the paper read at the conference).