

Rubber Planting Recommendations 1965-1966 for the Territory of Papua and New Guinea.

Compiled by ANTON J. H. VAN HAAREN.

The following rubber planting recommendations for Papua and New Guinea are based on overseas experience with this planting material as well as on observations from the experiments conducted by the Department of Agriculture, Stock and Fisheries, at the Rubber Research Centre, Bisianumu.

THE Department of Agriculture, Stock and Fisheries maintains extensive rubber budwood nurseries in which a total of 87 clones are represented. Forty of the more promising clones have been established in field experiments over 56 acres of clonal yield trials at the Bisianumu Rubber Centre. These clones are tested under local conditions for yield and such secondary characteristics as susceptibility to diseases, wind damage, vigour, etc.

Whether to plant clonal seedlings or budded material is a matter of opinion. It must be realized however that budgrafts of the modern clones are undoubtedly superior in yield to clonal seedlings. On the other hand, the variability of clonal seedlings renders them less likely to suffer severely from specific diseases. Establishment costs for clonal seedlings are lower than for budgrafts.

Departmental recommendations are for an establishment of 50 per cent. clonal seedlings and 50 per cent. budgrafted trees.

In the choice of a clone, local conditions must be taken into consideration. No clone, or seedling family for that matter, is the best planting material under all circumstances or for all purposes. Planting recommendations must inevitably be generalizations. Characteristics such as vigour, bark thickness and bark renewal, disease resistance, wind damage, etc., must be taken into consideration when making a choice for a given locality.

With regard to the above, the following planting material is recommended for Papua and New Guinea in 1965-1966.

Class I—*For large scale planting—*

Clones : PR 107, PB 5/51, RRIM 600, RRIM 623.

Clonal Seedlings : Prang Besar Gough Garden 1 seed and PBIG garden Fand G.

Class II—*For moderate scale planting—*

RRIM 513, 605, 607, 628 and 701.

LCB 1320, GT 1, Chem. 26 and Chem. 30.
PB 213 and PB 217.

DESCRIPTION OF RECOMMENDED CLONES.

PR 107.

Overseas—

Average vigour during immaturity—straight stem with heavy, but well-balanced crown—one of the clones least likely to be affected by wind damage—virgin bark and renewed bark thickness is above average, yields are disappointing in the early years but improve considerably later because of high girth increment on tapping—yielding around 1,200 lb. per acre per annum. Yield in fifth year at RRIM large scale clonal trials 1,598 lb. per acre per annum.

Local—

Growth average—no wind damage, slightly susceptible to *Gloeosporium* in early years but shows good recovery—this appears to be one of the hardiest clones available with few, if any, physical defects—it seems the ideal choice for the small holder in this Territory because of its toughness, thick bark and high girth increment after tapping.

Budding success : above average.

Price : 7s. 6d. per yard of budwood.

PB 5/51.

Overseas—

Average vigour—good branching habit—appears to be resistant to wind damage—smooth bark of average thickness with good renewal—

should not be planted too closely, Prang Besar Estate recommends a stand of 150 trees per acre with at least ten feet between trees in the planting line—this clone is becoming increasingly popular and was the most planted clone on European-owned estates in Malaya during 1962. Yields of over 1,700 lb. per acre have been reported in commercial plantings and over 2,000 lb. (2,059 lb.) in the large-scale RRIM trials in its fifth year of tapping.

Local—

Average to good vigour—no wind damage—heavy seeder—this clone suffered badly from a die-back disease in young budgrafts in the third clonal yield trial—appears resistant to pink disease.

Budding success: below average.

Price : 80s. per yard of budwood.

RRIM 600.

Overseas—

Not a vigorous clone, but with a very good girth increment of tapped trees—straight and tall stem, with narrow, fan-shaped crown—average susceptibility to wind damage—bark renewal is good but the renewed panel sometimes bulges. Yield : The highest yielder in the RRIM 600 series trials with a mean yield of 1,989 lb. per acre in fifth year of tapping and over 3,000 lb. (3,098 lb.) in eighth year of tapping.

Local—

Average vigour—late branching—very tall stem bending of the stem in young trees has been experienced—no wind damage—no pink disease—susceptible to *Gloeosporium* in early years.

Budding success : well above average.

Price : 15s. per yard of budwood.

RRIM 623.

Overseas—

Outstanding vigour—branches upright and heavy, the junction of the main branches is weak and some branch-split has been experienced—virgin and renewed bark are below average in thickness—girth increment on tapping is above average. RRIM 623 was the most popular clone among Asian-owned estates in Malaya during 1962.

Yield : Together with RRIM 600 and 628 this clone belongs to the highest yielders in the RRIM 600 series trials—mean yield in fifth year of tapping at RRIM experimental station was 1,768 lb. per acre and in the sixth year 2,435 lb. per acre.

Local—

The most vigorous clone in the second clonal yield trial—susceptible to branch break and a few cases of trunk snap—low susceptibility to *Gloeosporium* and pink disease.

Budding success : below average.

Price : 15s. per yard of budwood.

RRIM 513.

Overseas—

Average vigour—low girth increment on tapping—virgin bark below average thickness—bark renewal of average thickness—little wind damage reported, trees may lean on poorly drained soils.

Yield : Slow starter, but increased yields on second panel average yield level in postwar RRIM experiments third year 1,400 lb. per acre, fourth year 1,600 lb., fifth year 1,800 lb.

Local—

Poor vigour—this is the slowest growing clone in the first clonal yield trial with approximately 20 per cent. under the average girth for the trial—no wind damage and no fungi diseases experienced.

Budding success : average.

Price : 15s. per yard of budwood.

RRIM 605.

Overseas—

Average vigour—low branching—balanced crown—no serious wind damage reported—girth increment of tapped trees satisfactory—bark thickness and bark renewal are good.

Yield : At RRIM trials in fifth year of tapping mean yield of 1,429 lb. per acre.

Local—

Average growth—no wind damage and no particular susceptibility to fungi diseases experienced.

Budding success : average.

Price : 15s. per yard of budwood.

RRIM 607.

Overseas—

Average vigour—low branching with dense crowns—due to heavy self-pruning in later years the crown becomes high and small, with rather wide main branches—one of the most wind resistant clones in the RRIM 600 series—bark is of average thickness, particularly good bark renewal—low incidence of brown bast.

Yield : At RRIM trials in fifth year 1,437 lb. per acre.

Local—

Average to good growth, no wind damage—no diseases reported.

Budding success : average.

Price : 15s. per yard of budwood.

RRIM 628.

Overseas—

Below average in vigour—upright branching with good canopy—low incidence of wind damage—bark above average thickness—bark renewal satisfactory—poor girth increment of tapped trees—tapping intensity of less than 100 per cent. is probably desirable (brown bast).

Yield : With RRIM 600 and 623 this clone belongs to the highest yielders in the RRIM 600 series trials—mean yield in RRIM trials fifth year of tapping, 1,892 lb. per acre.

Local—

Average to poor growth in budwood nurseries, no diseases or wind break experienced so far.

Budding success : average to good.

Price : 15s. per yard of budwood.

RRIM 701.

Overseas—

Exceptionally vigorous—straight stem—wide, rather low branching habit—heavy, well-balanced crown—no wind damage experienced—bark above average in thickness—susceptible to *Gloeosporium* disease.

Yield : high yielding—no yield figures published yet.

Local—

Recently established in clonal yield trials—excellent growth in budwood nurseries.

Budding success : below average.

Price : 15s. per yard of budwood.

LCB 1320.

Overseas—

Very vigorous—tall stem with tendency to lean—late, irregular, long branches—narrow fan-shaped crown—susceptible to wind damage—above average susceptibility to pink disease—virgin bark above average in thickness—renewed bark below average in thickness—girth increment after tapping below average to average.

Yield : In fifth year of tapping at RRIM trials 1,187 lb. per acre pre-war trials in Java—fifth year tapping 1,630 lb. per acre.

Local—

Above average vigour—little wind damage—not susceptible to *Gloeosporium*—above average susceptibility to pink disease.

Budding success : above average.

Price : 15s. per yard of budwood.

GT 1.

Overseas—

Average vigour—straight stem—compact crown of dark, glossy leaves—branching late, upright—resistant to wind damage—smooth bark of average thickness—poor bark renewal in Indonesia.

Yield : Yield at RRIM trials in third year 1,128 lb. per acre in Java in pre-war trials yield in fifth year of tapping 1,520 lb. per acre.

Local—

Recently established in clonal yield trials—growth in budwood nurseries very good—not susceptible to *Gloeosporium* disease.

Budding success : above average.

Price : 15s. per yard of budwood.

Chem. 26.

Overseas—

Vigorous grower—tall upright stem—wide crown with heavy canopy—light branches—susceptible to wind damage—average bark thick-

ness—average renewal and average girth increment after tapping—resistant to pink disease and *Gloeosporium*.

Yield : Around 1,300 lb. per acre in fifth year of tapping.

Local—

Above average in vigour—no wind damage—a few incidences of pink disease experienced.

Budding success : average.

Price : 8s. 6d. per yard of budwood.

Chem. 30.

Overseas—

Vigorous—stem has tendency to lean—heavy canopy with dark, glossy leaves—reasonably resistant to wind damage—resistant to pink disease and *Gloeosporium*—smooth bark of above average thickness—bark renewal average.

Yield : Has outyielded Chem. 26 after a number of years although it was a slow starter in trials at the Chemara Central Research Station. In RRIM trials yields average 90-100 per cent. of RRIM 501 in second and third year (RRIM 501—second and third year mean yield of 1,018 lb. and 1,320 lb. per acre).

Local—

Recently established in clonal yield trials—appears to be well above average in vigour—no diseases or wind damage experienced in older trials.

Budding success : well above average.

Price : 8s. 6d. per yard of budwood.

PB 213.

Overseas—

Average vigour—straight stem—dense foliage—wind resistant—susceptible to *Oidium* disease—good bark renewal.

Yield : No RRIM information available—according to Prang Besar yield in 1961 (fifth year of tapping) was 236 per cent. of PB 86 yields.

Local—

Recently introduced clone—showing average vigour—no disease susceptibility so far.

Budding success : below average.

Price : 80s. per yard of budwood.

PB 217.

Overseas—

Good vigour—straight stem—moderately light branches—well-balanced crown—wind resistant—good bark renewal—susceptible to *Gloeosporium*.

Yield : No RRIM information available—according to Prang Besar yield in 1961 (fifth year of tapping) was 280 per cent. of PB 86 yields.

Local—

Recently introduced—good vigour in budwood nurseries—some *Gloeosporium* incidence, but not serious.

Budding Success: below average.

Price : 80s. per yard of budwood.

Note—

Average yields which can be expected from modern clones tapped at the RRIM trials under normal estate conditions on S/2, d/2 tapping—ref. Annual Report—Rubber Research Institute of Malaya, 1963, p. 34.

Year	1st	2nd	3rd	4th	5th
lb. per acre	600	1,000	1,300	1,400	1,500

Average yields which can be expected from Gough Garden 1 clonal seedlings tapped under normal estate conditions on S/2, d/3 (Prang Besar Circular and Price list—January, 1964—p. 6).

Year	1st	2nd	3rd
lb. per acre	550	920	1,100

Budwood—is available from the Bisianumu Rubber Centre.

Prices—quotes are ex-Bisianumu nurseries.

In the case of proprietary clones a condition of sale of budwood is the completion of a standard sales agreement prohibiting the further distribution or resale of the budwood or material multiplied therefrom.

Further information may be obtained from : The Director, Department of Agriculture, Stock and Fisheries, Konedobu, Papua.

(Received March, 1965.)