https://doi.org/10.29321/MAJ.10.A04516

SOME USEFUL PLANTS FOR GREEN MANURE PURPOSES

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I. Macaranga Peltata.

Associated with the urgent need for increasing our food production, is also the need for exploring new sources of green leaf manures for appling to paddy fields. The problem is easily solved in districts where rank vegetation or forests are within an easy reach of paddy fields, but the chief paddy-growing regions like the deltaic areas of Godavari and Tanjore do not have, as a rule, any forest lands in the vicinity of paddy fields. For such areas, a quick growing large leaved inedible shrub that can also stand heavy pruning would be a very great boon. A plant of this type is available in *Macaranga Peltata, Muell* a description of which is given below:—

Macarange peltata, Muell. Arg. (family: Euphorbiaceae; Syn. Tamil *Vattakanni*, Malayalam, *Poduvanni*, Upplli or Vatta).

This is a quick growing tree growing wild to a height of 40 feet, in the laterite soils of Malabar, though Gamble has recorded its occurrance in the hilly areas of the Northern Circars also. The plant produces numerous leaves which are large, crowded and heartshaped as shown in the photograph. The leaves are not eaten by cattle. The tree can stand drastic pruning and is capable of putting forth bushy growth within two to three months after pruning.

Flowering occurs during February-March; the flowers being small, inconspicuous and dioecious, that is the male and female flowers are borne on separate plants. The fruits are also small and these get shed during the hot weather before the Southwest monsoon rains commence. With the setting in of monsoon, these seeds germinate all round the parent trees, producing a plentiful supply of seedlings which are used for planting as hedge plants in compounds.

The ryots on the west coast systematically prune this tree if these are within easy reach and apply the loppings as

MACARANGA Peltata

green manure for their paddy field. As such it would seem to be quite a useful plant worth spreading particularly in the deltaic districts for use as a source of green leaf manure for paddy fields. The plant is not without other uses. Coffee plants are reported to thrive well when planted under the shade of *Macaranga Peltata*. Watts has recorded that the gummy exudation from the cut branches is useful for taking impressions of coins, leaves etc The tender shoot and leaves are valued medicinally while the fruits are reported to be eaten during famine periods.

II. Rothia Trifoliata Pers.

India is at present facing a serious food crisis, because of two causes, namely the failure of the monsoon and the difficulties in import. The problem therefore that confronts every Government today is to devise ways and means of producing more food. In this effort, manuring plays no s. ·ll
ryots are poor and can ill-afford

Green manure is not only cheap but very efficient in many ways. In regard to fields adjoining the forest area there is no dearth of green leaves, but in the districts formed by the river deltas and in coastal areas, procurement of enough green leaf for the rice crop is a problem. Through the efforts of the Agricultural Department, seeds of leguminous crops. especially those belonging to the genus, *Sesbania*, *Crotalaria*, *Tephrosia*, *Phaseolus* etc., are being distributed to the royts; for use as green manures. In ordinary soils these plants are successful, but in saline or alkaline soils these are not quite as successful. In this note, the description and performance of a leguminous plant that is capable of growing under extreme saline conditions are recorded. This is a *Papilionaceous* plant *Rothia trifoliata*, Pers. This has been found growing wild very close to the water edge along with *Spinifex* formations on the sea-coast of Chowghat in Malabar, and very close to the water edge. Woodrow (1) has recorded it in Western India and Cooke (2) mentions its distribution in the sandy areas of Bijapur, Berhampur and Belgaum, while Triman (3) records its distribution in the dry sandy regions of Ceylon and finally Gamble (6) mentions its occurrence in Northern Circars and Deccan and Carnatic in dry districts, in fields and on wastlelands.

From the specimens at the Madras Herbarium, it is seen that collections of this plant have been made at various localities of Madras Presidency, namely :—

(1) Bellary District — rocky area – altitude 1,000 ft.

(2) Chingleput District — sandy areas of Sandras, as well as in the interior scrub jungles of Vandalur.

(3) Coimbatore District — Hilly areas of Kollegal Taluq ;

(4) Godavari District — Sandy areas of Annavaram (Coastal Village)

(5) Nilgiris — Altitude 7,000 ft.

(6) Shevroy Hills — Altitude 4,000 ft.

(7) Tinnevelly District — River-beds;

(8) Vizagapatam District— Anakapalle (an interior town).

It will be seen that it occurs from sea-level to an altitude of 7,000 ft. not only in sandy soils but in laterite and rocky soils

as well. Its occurrence in the sea-coast along with *Spinifex* formations, and so close to sea water under extreme saline conditions is however recorded now for the first time. On enquiry it is learnt that high waves sometimes sweep over the areas in which these plants were seen. Its occurrence under extreme sailine conditions is worthy of note; the paucity of suitable green manure plants for alkaline or saline areas can be solved to some extent if this plant could be successfully raised in such areas. A short description of the plant is given for the information of our readers.

A much-branched and spreading annual; spreads to a radius of 1 to 1½ feet; silky hairy in all its parts.

Leaves :— Digitately 3 foliate; common petiole – ¼ to ⅜th inch.

Leaflets:— Mostly obovate to occasional elliptic oblong, entire, very slightly mucronate, somewhat fleshy, silky hairs more on the dorsal side, ½ inch to ¾ inch long.

Stipulate – *Stipules*:– Ovate to elliptic, leaf-like, small, ⅛ th inch long.

Flowers:— Axillary, usually 2, occasionally single.

Calyx:— About ¼ inch long, silky hairy; segments: lanceolate, very acute.

Corolla :— Yellow, standard clawed; slightly exserted.

Pod:— Narrow, linear flat, very nearly straight. 1.⅝ th to 2.⅛ th inch long.

Seeds :— Numerous, 25 to 30 in a pod.

Flowers :— September-October.

This plant is known in Tamil as "*Nurreypittan Keeray*" and in Telugu as "*Nucka Kura*".

Watt (7) records that the leaves and pods are boiled and eaten as a vegetable by the natives, especially in times of famine.

On account of its cosmopolitan nature these plants are worth a trial in saline as well as ordinary soils. As the plant flowers in September-October, ripe seeds can be gathered from November-December onwards.

References:

(1) G. Woodrow (1897) .... Journal, Bombay Nat. History, Vol. II;
(2) Cooke (1903) .... Flora of Bombay;
(3) Trimen (1894) .... Flora of Ceylon;
(4) Benthan & Mueller (1864) Flora Australiensis;
(5) Hooker (1879) .... Flora of British India;
(6) Gamble (1915) .... Flora of Madras Presidency;
(7) Watt (1892) .... Dictionary of Economic Products of India.

Growth and Development in Sugarcane in Relation to Methods of Preservation of Sets

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Introduction:

Sugarcane is normally a twelve months crop. In this Province it is generally planted from February to April and harvested during the same months of the following year. Thus planting and harvesting synchronise.

After the introduction of Coimbatore seedling canes, types that mature in 10 months, or those that can stand in the field for over 12 months without deterioration, have come into cultivation, especially in the areas covered by sugar factories. Under such conditions, planting and harvesting may not generally synchronise due to cultivation of early and late types. It is within the experience of the ryots that if sets are planted prior to January, during the cold months, germination and growth are very poor; and if planting is delayed upto or after May low yields are recorded. Therefore irrespective of the period of harvest, planting is to be done during the months of February to April and for this purpose there is a great need to devise suitable methods to enable the ryots to preserve the sets, for a maximum period of two months and thus overcome the problem.

With this object in view, an experiment was conducted for three years on the Agricultural Research Station, Anakapalle and the results are reported hereunder.

2. *Material and method:*— The seed preservation experiments were conducted on Co. 419, the most popular variety in this Province.