

# Plant Introduction - *Desmanthus virgatus* Willd. (Hedge Lucerne) A new fodder cum hedge plant for Madras State\*

by

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**Synopsis :** The usefulness of *Desmanthus virgatus* Willd. (Hedge Lucerne), a new introduction, as a hedge cum fodder plant has been indicated in this paper.

**Introduction :** *Desmanthus virgatus* Willd. is a perennial shrub native of Tropical and Subtropical America and has been recorded to be naturalised here and there in Africa, India and Ceylon. It comes up well under tropical conditions and is said to be "temperature sensitive" (Takahashi and Ripperton, 1949). It is reported as a good fodder at low elevations of Hawaii and West Indies and has also been found to serve as a good soil cover in Indonesia (Whyte, 1953). It is met with in some gardens in India (Chapman, 1884; Cooke, 1909; Oliver 1871 and Parker, 1918).

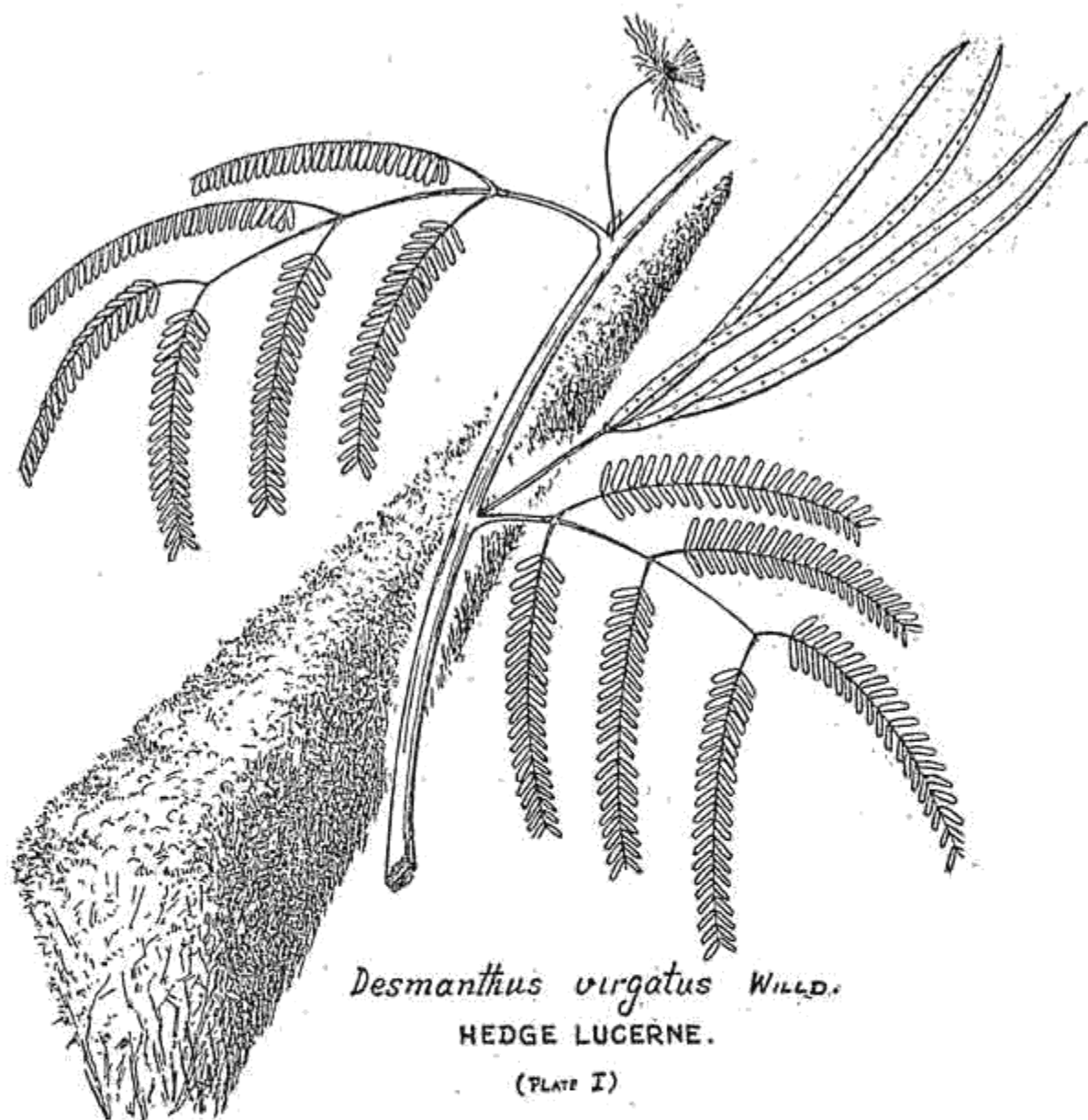
This species was introduced for trial in this State in the year 1952 under the Plant Introduction Programme of the State in the Botany Division of the Agricultural College and Research Institute, Coimbatore. From the trials conducted it was observed that *Desmanthus virgatus* thrives well at Coimbatore conditions. The plants grow 6 to 8 feet with virgate branches (Plate II) setting fruits and seeds freely. It comes up well both under irrigated and rainfed conditions.

**Description :** (Plate I): *Desmanthus virgatus* Willd. : Perennial attaining 6 to 8 feet in height with slender, erect or ascending branches, branches angular, three prominent decurrent lines extend on the branch from each leaf. Leaves compound, petiole 2.9 to 4.8 cm., pinnae usually in 2-4 pairs; rachis with an oblong sessile gland below the lowest pair; leaflets 'sensitive', 10-20 pairs, linear-oblong subapiculate, base obliquely truncate, sessile, 1½-3 lines long. Inflorescence solitary globose peduncled axillary heads, peduncle 3.5 to 5 cm. long. Flowers polygamous. Calyx companulate, 5 toothed. Corolla of 5 oblong-spathulate petals finally free. Stamens 10. Filaments filiform and that of lower flowers sterile. Ovary sessile, linear, many ovuled, style filiform, stigma clavate. Legumes in clusters, coriaceous, dehiscent, 20-30 seeded. Seeds compressed. Number of seeds per gram 240-250.

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\* Received on 30-1-1963.



The plants of *Desmanthus* have a distinct growth habit which makes it to develop into 'a clump or crown' with every harvest and numerous branches arise from near the cut end. Plants not pruned in the early stages develop a thick stem. When closely cut, each crown or clump may produce as many as fifty slender and erect branches. The branches are soft and succulent in young shoots and pithy and brittle in the mature portions.

**Use as fodder:** *Desmanthus virgatus* is palatable as a fodder and is readily browsed by animals. Loppings used as soilage have been found to be fully eaten by the animals leaving only the harder portions of the branches. In Hawaii it has been reported as a good soilage legume (Takahashi and Ripperton, *loc cit.*).

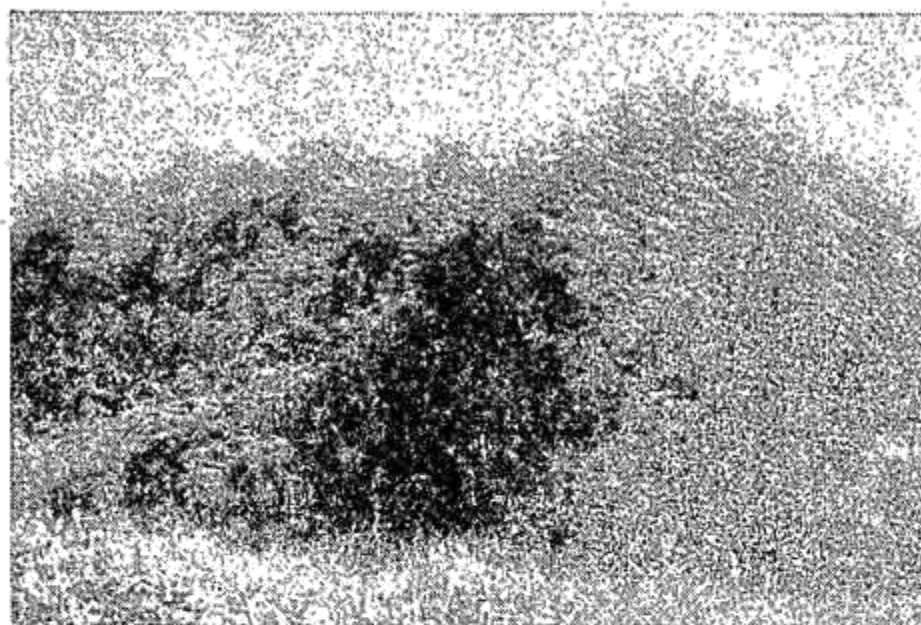


PLATE II

*Desmanthus virgatus* — A dense growth of about 8 ft.

The chemical analysis for the fodder value has been carried out at the Agricultural College & Research Institute, Coimbatore and the following is a comparative analysis with lucerne (*Medicago sativa*).

*Chemical analysis on moisture free basis*

Particulars	<i>Desmanthus virgatus</i>	<i>Medicago sativa</i>
Moisture	7.21	10.00
Ash	9.06	11.20
Crude protein	18.98	20.16
Ether extractives	3.01	1.35
Crude fibre	35.24	19.80
P <sub>2</sub> O <sub>5</sub>	0.48	0.57

From the foregoing table it can be seen that the quantity of ash, crude protein and phosphoric acid present in *Desmanthus virgatus* equals that in lucerne; since it is readily eaten by cattle it can favourably be compared with lucerne as a concentrated fodder.

Henke (1943) has brought out percentage composition of protein between *Desmanthus* and alfalfa (lucerne - *Medicago sativa*) to be similar. Takahashi and Ripperton (*loc cit.*) also found that the crude protein on fresh weight basis of *Desmanthus* equals that of alfalfa.

"Hedge lucerne": *Desmanthus virgatus* is recommended as a hedge *cum* fodder from the trials conducted here. Since it comes up well under both rainfed and irrigated conditions, it could be grown as a live-hedge near homes and farmsteads and the prunings can be effectively made use of as a leguminous fodder for soilage along with roughages or other green fodders. About 200 lb. of green matter can be obtained from a hedge of 10 ft. length in one cutting. A daily need of 5 to 10 lb. of this legume as a nutritious mixture in the soilage with green grasses or roughage could be obtained by cutting less than half-post length of the hedge. Since it has the nutritive value as good as lucerne it is named as 'Hedge Lucerne'.

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#### AWARD OF Ph. D. DEGREE

Sri N. V. Sundaram, B. Sc. (Ag.), M. Sc., Plant Pathologist, Regional Research Centre, PIRRCOM (I. C. A. R.), Coimbatore-3 has been awarded the Ph. D. degree by the University of Madras for his thesis "Studies on the rust *Phakopsora gossypii* (Arth.) occurring on cotton". Our hearty congratulations to him.