https://doi.org/10.29321/MAJ.10.A04492

Three Useful Pasture Plants

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(Received on 4—5—1950)

Food for cattle is next in importance only to food for man, 1or without healthy livestock, agriculture cannot thrive. There are many fodder plants and grasses which can be cultivated for purposes of producing fodder. But the area that can be devoted to such cropping can only be limited in view of the shortage of food grains in the country, and most available land has to be utilized to grow food crops. Therefore, it naturally follows that our grazing grounds have to be improved and enriched by encouraging the growth of not only grasses but also pasture plants particularly those belonging to the legume family.

During the study of the weed flora of South Kanara district, the author of this note has come across three leguminous plants thriving well under local conditions and much relished by cattle. Though they are recorded in the Flora of the Presidency of Madras by J. S. Gamble, their use as pasture plants does not seem to have been brought out by previous workers. With a view to bringing them to the notice of the public interested in the subject and to encourage their spread in new areas this note is published. The three species mentioned here do not seem to be well known and a short description of the plants with their local names where available and figures are included so as to enable the readers to identify the plants in the field and collect the seeds for multiplication.

1. **Indigofera uniflora:** Buch-Ham, Kan — *Kadu-neeli.* It is a herbaceous, hardy plant, gregarious in protected areas. Branches are long, slender, rather wiry and prostrate, the tips ascending, and red in colour. Leaves are small with 3 — 7 narrow leaflets. Flowers are red, small and solitary; pretty to look at when the plant is in bloom. Pods are slender about ½ inch long on erect thread-like stalks. Seeds small, brown, smooth, 1½ x 1 mm.

The plant is found in pastures and wastelands of the West Coast and also parts of Coimbatore district during the rainy months and is in flower or pod from September — December. Even in poor sandy soils, the plants come up well on account of its deep-seated root system. Cattle relish it well and it has good nutritive value. At the Agricultural Research Station, Kasaragod, a self-sown but manured plot (sandy soil)

gave a calculated acre yield of 5,850 lbs. of green stuff, when cut in flower (Reports on the work of Agricultural Research Stations in Madras Presidency 1940–41. p. 417).

2. **Zornia diphylla:** Pers. Mal — *Nelam Mari.* It is a low diffuse herb with wiry branches, bi-foliate, succulent leaves having characteristic pairs of leaflets which are narrow and about an inch long, and gland-dotted. Flowers small, yellow in short racemes and with lance-shaped persistent bracts. Pods jointed, with dark brown, soft spines. Seeds are very small about 2 x 1½ m.m., brown, smooth and pitted.

The plant is common in all the coastal districts and inland up to about 3,000 feet., and found gregarious in dry situations even on rocky soil and roadsides. Specimens in richer soils are more robust with larger leaves. The plant is nutritious and much liked by cattle, and said to be particularly good for milch cows. Under favourable conditions a yield of 3,000 lbs. of green stuff can be expected. Mention of this plant as a good forage plant was first made in the Agricultural Station Reports for 1940 — 41. p. 418.

3. **Alysicarpus vaginalis,** DC. Tam. *Namappoondu.* A low herb, much branched, the long wiry branches, radiating and spreading on the ground from the top of a rather deep-going tap root. Flowers are small, pink, in short, dense, terminal racemes. Pods nearly round, about an inch long, falling off in bits — each bit containing small, smooth brownish yellow seed 2 x 1½ m.m.

The plant is found in all the districts of both the coasts, in pasture lands from September — December. It thrives well even in sandy soils. Under protected conditions about 3,000 lbs. of green stuff can be obtained from an acre; it is eagerly grazed by cattle.

All the three species mentioned in the note belong to family *Leguminosae, Papilionaceae* and enrich the soil were they grow. It is therefore highly desirable that these plants are encouraged to grow and thrive in all pasture lands. The main reason why they are not found in abundance in our grazing grounds is that grazing is not restricted in our pasture and cattle have a tendency to graze down the plants so that flowering and seeding are affected. With a view to ensuring a supply of seed for the following season the last flush in November may be left unaffected by cattle. The seed may be sown along with grass seed and a cultivator worked.

The following are the analyses of the plants by the Government Agricultural Chemist, Coimbatore.

—		Indigofera uniflora	Zornia diphylla	Alysicarpus vaginalis
		(1)	(2)	(3)
Moisture	...	9·56	10·11	8·97
Ash	...	5·49	10·48	6·75
Crude protein	...	12·26	15·78	13·30
Ether extractions	...	2·46	1·32	1·96
Crude fibre	...	40·52	30·50	38·00
Carbohydrate	...	29·71	31·81	31·02
Insolubles	...	1·36	4·94	1·06
Phosphoric acid (P_2O_5)	...	—	0·42	0·36
Lime (CaO)	...	—	1·13	1·41
pH	...	—	—	6·19
Albuminoides	...	8·06	14·57	—

Government Agricultural Chemist's remarks :

No. 1—*I. uniflora :* The leaves contain good quantities of protein and have good feeding value. They are, however, acid in reaction. The feeding of unlimited quantities may cause digestive disturbances.

No. 2. *Zornia diphylla :* The plant is a good fodder plant.

No. 3. *A. vaginalis :* The sample has a fairly good feeding value.

It will be seen from the analyses that the plants are nutritious and will be an asset to any pasture land. Seeds, however are not available with the author at Coimbatore, and have to be collected by interested persons, from the fields in the coastal districts and multiplied for sowing. In case of doubt regarding the identity of the species, specimens may be sent to the Government Lecturing & Systematic Botanist, Lawley Road P. O., Coimbatore and he will be pleased to name them free of cost.

The author's thanks are due to Sri S. N. Chandrasekhara Ayyar, Government Lecturing & Systematic Botanist, Coimbatore for his valuable suggestions given during the preparation of the note, and for the loan of the plate reproduced here.