CHEMICAL NOTES (10)

FURTHER ANALYSES OF LEGUMINOUS GREEN MANURES

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IN 1926, analyses of a number of green manure plants were made in the Chemical Division and the results published in *The Tropical Agriculturist* for October of that year. Since then several leguminous green manures have been introduced into Ceylon and it was thought desirable to analyse some of these, as well as a few of the more-important older species that had not been examined. With a view to obtain results which would be comparable, all samples were taken at the flowering stage only, and their leafy material and tender stems analysed. As previously pointed out it is obvious that the analytical figures obained cannot be regarded as representing the composition of all samples of the same species. It is, however, hoped that they would give a fair idea of the manurial values of these green manures.

The results of the analyses are calculated on the fresh material and on dry matter at 100°C. The sample of *Parochetus communis* was obtained from Lippakelle Estate, Talawakelle, the two samples of *Psoralea corylifolia* and *Rhynchosis nummularia* from the Northern Division, and the others from the Experiment Station, Peradeniya.

The results are set out in the table. An examination of it would show that the nitrogen as well as the ash contents in the fresh material of the various green manures vary a great deal. Of all the plants analysed *Derris robusta* appears to be the best as it contains the highest amounts of nitrogen, ash, lime, and potash. Its phosphoric acid content is also high. Lowest figures for all constituents in the fresh material are obtained in the case of *Parochetus communis* and this is evidently due to its low dry matter content which is only 14·3%, as compared with dry matter contents of 38% and 33·4% in *Derris robusta* and *Albizzia chinensis* respectively. The results on dry matter at 100°C show however that this plant has the highest amount of phosphoric acid and that its potash content too is comparatively

high. Thus it will be noted that a better idea of the relative value of the various green manures could be obtained by examining the results on material at 100°C.

The table shows that the figures for the various constituents obtained from these analyses are about the same as those obtained previously with the one exception of *Psoralea corylifolia* which has an ash content as high as 11·5% consisting chiefly of lime and potash. The percentages of nitrogen for the various species do not vary to any great extent. The nitrogen content is 3·47% obtained in the case of *Albizzia chinensis* as against a minimum of 2·48% in *Psoralea*. As already pointed out the highest amounts of lime and potash are found in *Psoralea*. The smallest percentage of lime is found in *Crotalaria brownei* and of potash in *Albizzia chinensis*. The latter has also a low percentage of lime. The phosphoric acid content is highest in *Parochetus* and again lowest in *Albizzia chinensis*. There does not appear to be any relation between the nature of the species analysed and their composition.

Analyses of Green Manures

No.	Variety	Nature of plant	On fresh material Per cent							On dry matter at 100°C Per cent					
			Moisture	Organic matter	Ash	Nitrogen	Lime	Potash	Phos. acid	Organic matter	Ash.	Nitrogen	Lime	Potash	Phos. acid
1	Derris robusta	Tree	62·0	35·1	2·91	1·19	·74	·73	·19	92·3	7·68	3·14	1·98	1·93	·51
2	Albizzia procera	,,	73·5	24·1	2·43	0·69	·55	·68	·21	90·8	9·17	2·62	2·09	2·58	·81
3	Albizzia chinensis	,,	66·6	34·4	1·97	1·15	·46	·42	·15	94·1	5·92	3·47	1·37	1·24	·44
4	Crotalaria brownei	Bush	76·1	22·2	1·68	0·71	·29	·56	·16	92·9	7·06	2·93	1·24	2·36	·48
5	Psoralea corylifolia	,,	–	–	–	–	–	–	–	88·5	11·53	2·48	5·26	4·14	·55
6	Tephrosia tinctoria	,,	72·8	25·5	1·74	0·94	·47	·51	·14	93·6	6·41	3·45	1·75	1·88	·51
7	Desmodium heterocarpum	Bushy creeper	66·5	32·4	1·15	1·03	·46	·59	·16	94·2	5·81	3·07	1·38	1·76	·49
8	Parochetus communis	Creeper	85·3	13·4	1·34	0·42	·23	·37	·13	90·8	9·15	2·82	1·54	2·51	·87
9	Pycnospora hedysaroides	,,	66·7	30·8	2·48	1·07	·58	·67	·21	92·5	7·45	3·24	1·74	2·02	·63
10	Rhyncosis nummularia	,,	–	–	–	–	–	–	–	91·4	8·58	3·37	3·17	2·52	·69