

the fact that Gupta *et al.* (1985) method eliminates the use of alcohol and thus the sources that produce errors in the method

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of Bower *et al.* (1952), the adoption of former method seems to be appropriate for CEC estimation of vertisols.

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(Received May, 1989)

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Karnataka J. Agric. Sci., 2 (4) : (334-336) : 1989

Nutrient Composition of Different Animal Organic Manures

Different animal organic manures have been used in agriculture from time immemorial for maintaining and improving the fertility and productivity of soils. Nutrient content of these manures varies depending upon the types of feed used, age of the animal, and source of feed etc. Therefore, the study was taken to know the nutrient composition of some manures which are commonly used in preparing farm yard manure (FYM) by farmers.

Excreta of different animals, cattle dung slurry which is used for biogas production in UAS Campus, Dharwad and

the digested slurry which comes out after the production of methane gas from the Gas Chamber are collected and dried under shade at room temperature. Dried samples were powdered in agate pestle and mortar and passed through 1 mm sieve. Sieved material was digested in tri-acid digestion mixture (HNO_3 : H_2SO_4 : HClO_4 , 10:1:4 ratio) and analysed for the macro, secondary and micronutrient contents by adopting standard procedures as outlined by Jackson (1967) and Piper (1950). The results are presented in Table 1.

Table 1. Nutrient composition of different animal Manures (on oven-dry basis)

Sl. No.	Manures	N	P	K %	CaO	Mgo	Na ₂ O	Zn	Fe ppm	Mn	Cu
1.	Ass dung	1.30	1.00	1.95	0.45	0.82	0.24	116	2025	354	46
2.	Biogas slurry digested	1.98	0.52	1.10	2.60	0.82	0.20	177	2120	236	43
3.	Biogas slurry undigested	1.06	0.36	0.35	1.70	0.61	0.39	78	1567	180	30
4.	Buffaloe dung	1.31	0.66	0.30	1.12	1.60	0.74	178	2264	430	66
5.	Cow dung	1.96	0.71	0.25	2.60	2.50	0.52	116	1388	238	33
6.	FYM	1.74	0.64	1.40	2.80	0.82	0.61	135	3090	269	40
7.	Goat droppings	2.31	0.36	0.38	0.84	0.40	0.73	100	2233	248	46
8.	Horse dung	1.39	1.50	1.50	0.56	0.27	0.58	106	2650	432	54
9.	Pig dung	2.78	1.66	0.42	1.40	1.12	0.20	205	4086	362	81
10.	Poultry droppings	2.02	1.60	1.32	1.40	1.10	0.46	218	1098	255	35
11.	Sheep droppings	1.85	0.88	0.33	1.40	0.61	0.54	108	2783	376	46

Among the different manures analysed, pig dung contains higher amounts of N (2.78 %) and P (1.66 %), whereas ass dung contains higher amounts of K (1.95 %). Digested biogas slurry is enriched in N, P and K than undigested slurry used for biogas production. Droppings of goat, sheep, poultry and cow dung is found to contain low P and almost equal quantities of K as compared to well decomposed FYM.

FYM contains highest CaO (2.8%) followed by cow dung (2.6 %) and lowest in ass dung (0.45%). Buffalo dung and pig

dung are rich in MgO as compared to other manures studied.

In general, micronutrient content of different manures analysed followed the order of Fe Mn Zn Cu. The highest Fe (4086 ppm) was recorded in pig dung and lowest in poultry droppings (1098 ppm). Mn, Cu and Zn contents did not vary much among the different manures studied.

Information on nutrient composition of these manures helps in adjusting the fertilizer requirement of the crop and to sustain the fertility and productivity of the soil.

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(Received May, 1989)

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Karnataka J. Agrlc. Sci., 2 (4) : (336-338) : 1989

Age of the Seedlings in Relation to Coriander Blight - Caused by *Colletotrichum gloeosporioides*

Coriander blight incited by *Colletotrichum gloeosporioides* (Penz) Penz. and Sacc., is one of the major disease occurs in an epidemic form in Karnataka. To

screen the germplasm and to understand the epidemiology of the disease there is very necessity of identifying the most critical susceptible stage of the crop for in-