

Agri. Res. J. Kerala, 1975, 13 (1)

THE CHEMICAL NATURE OF ORGANIC COMPLEXES IN SOME SAMPLES OF TOWN COMPOST

When organic wastes are made into compost they undergo various chemical and biochemical changes resulting in the slow disappearance of certain organic compounds and the consequent enrichment with regard to certain other compounds. The analysis of three samples of town compost aged one, two and three years respectively using the scheme of organic matter fractionation suggested by Waksman and Stevens (1928) has provided an insight into the nature of changes undergone by organic materials when they decay over a period of time. The results obtained are given in Table 1

It is to be noted that the three samples of compost represented three different consignments and were not taken from the same heap after different

Table 1

The organic matter fractions and mineral matter in three samples of town compost

Fraction	Age of sample		
	1 year	2 years	3 years
		per cent	
1. Ether extract	2.55	0.97	0.50
2. Water solubles	2.56	2.23	0.93
3. Alcohol solubles	1.11	1.53	0.95
4. Hemicellulose	0.43	0.00	0.00
5. Cellulose	5.52	2.01	0.00
6. Crude Proteins	17.96	17.04	13.93
7. Lignin	12.88	15.71	22.99
8. Total organic matter	43.01	39.49	39.30
9. Mineral matter (Ash)	40.42	46.99	47.00
10. Total accounted for	83.43	86.48	86.30

periods of decomposition. Nevertheless, the nature of the organic wastes used for their production may be assumed to have been more or less similar and so the above results are indicative of the changes occurring to the different classes of compounds in decomposing organic materials with passage of time. The more

rapid and drastic changes evidently occur during the first year of decomposition. but data relating to those changes are not obtained by the present study. However, as the age of the sample increased from one year to three years the total organic matter content decreased from 43.01 to 39.30 per cent and the ash content increased from 40.42 to 47.0 per cent. Ether extractives, water solubles, hemicellulose, cellulose and crude proteins have all decreased with the age of the compost with a consequent increase in the lignin and mineral matter fractions. The alcohol soluble fraction was highest in the two year old sample and lowest in the three year old material. One remarkable fact about these changes is that there is appreciable reduction in the nitrogen content (crude proteins) in the three year old compost which means that the manurial value of compost is considerably reduced by storing it for unduly long periods.

സംഗ്രഹം

മൂലലിന വസ്തുക്കളിൽ നിന്നും കമ്പോസ്റ്റ് ഞാക്കുമ്പോൾ അതു ദീർഘകാലം ഉപയോഗി ക്കാതിരുന്നാൽ അതിന്റെ വളക്കൂറ് നഷ്ടപ്പെടുന്നു. ഈ പഠനം വെളിപ്പെടുത്തുന്നു. സമയം കൂടുന്തോറും ലിഗ്നിൻ, മിനറൽ മാറ്റർ തുടങ്ങിയവയുടെ അളവ് കൂടുകയും ചെയ്യുന്നു.

REFERENCE

Waksman, S. A. and Stevens, K. R., 1928. *Soil. S.* 26, 113

College of Agriculture,
Vellayani,
April 28, 1975.

M. M. KOSHY

(M. S. received 30-4-1975)