

EASTERN UNIVERSITY, SRI LANKA

THIRD YEAR, SECOND SEMESTER EXAMINATION IN AGRICULTURE - 2004/2005

SOIL PROPERTIES ACH - 3201 (1:00/30)

Answer all questions

Time: 1 hour

1. A student carried out a research in the farm using poultry manure, paddy husk and tank silt in combination with chemical fertilizers. The treatments used and the results obtained are given below.

Treatments	Nitrogen use efficiency (%)	Soil Nitrogen content (%)		
		At time of planting Stage I	Before top dressing Stage II	At harvesting Stage III
Poultry manure + Chemical fertilizers	11	0.10	0.40	0.30
Paddy husk + Chemical fertilizers	39	0.06	0.10	0.05
Tank silt + Chemical fertilizers	31	0.03	0.22	0.06
Chemical fertilizers	13	0.02	0.05	0.05

a) Based on the result obtained in the above study, explain the effect of organic manure on the nitrogen content soil.

b) "Though the nitrogen content is much lower in paddy husk than other fertilizer used, the Nitrogen Use Efficiency is high". Justify.

c) "Fertilizer use efficiency of 100% is not possible", comment on this statement.

d) Write the conclusion for the above research study.

2. a) What are the important steps you have to follow in collection and preparation of soil samples for analysis.

b) "Integrated use of organic manures and chemical fertilizers is more effective than either alone" Explain.

c) A soil collected from Batticaloa district having the following characteristics;

Electrical conductivity - 4.7 mmhos/cm,

Exchangeable  $\text{Na}^+$  - 15%

pH - 8.5.

Name the soil type and explain the management practices that is commonly adapted

d) List the problems encountered in the Batticaloa lagoon during rainy season.

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