Estimation of Humus in Soil/Manure

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Abstract

Humus is a complex mixture of heterogeneous organic compounds derived from plant and animal residues and is formed by the reaction of decomposition, synthesis, and polymerization. It is an integral part of soil organic matter and can be extracted by neutral salts or alkali separating humic and nonhumic fraction. .

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Guidelines

Materials

Extracting solution: Dissolve 44.6 g of sodium pyrophosphate and 4 g NaOH in 1 L water to maintain 0.1 M strength of the solution.

Protocol

Step 1.
Take 20 g soil or manure in a conical flask and add 100 mL of extractant (1:5 ratio) Shake well and allow standing for 18 h

DURATION
18:00:00

Step 2.
Filter through Whatman filter paper no. 1 (the residue portion on filter paper is called humin and the filtrate is humus. It is dark brown in color with pH 13).

REAGENTS
#1 Whatman paper 1001-150 by Coorstek

Step 3.
To get rid of sodium, the humus is dialyzed in dialysis tubes or parchment paper against running tap water for 24 h.

DURATION
24:00:00

Step 4.
It is free of sodium. Measure the volume, and a known volume (10 mL) is taken in a pre-weighed 100 mL beaker. The beaker is dried in an oven at 70°C to a constant weight. The difference in weight gives the amount of humus in 10 mL. Accordingly, it is calculated on a percentage basis.