Stick a Fork in It

Bioplastic Degradation Rates

Problem

Which material will compost the fastest: homemade bio-plastic, compostable plate, eco-friendly plate?

Purpose

To investigate the degradation rates of bio-based materials in compost.

Materials:

Backyard Compost	LaMotte Soil Test Kits for N,P,K
Plastic Cups	Ammonia
Soil Moisture Probes	Samples of Compostable Plates
Samples of Eco-Friendly Plates	Samples of Homemade Bio-Plastic
Samples of Styrofoam Plates	Plastic Tubs

Procedure:

1. Make 3-4 small holes in the bottom of 4 plastic 16 oz. cups, then label each cup with the sample type.
2. Using LaMotte NPK Soil Test kit, conduct the Nitrate, Phosphate and Potassium soil tests on the compost per directions in kit and record in lab notebook for starting values.
3. Weigh out 2 g of each sample and record starting weights in lab notebook.
4. Fill cups full of compost and place the samples 2 inches deep in each appropriately labeled cup.
5. Place cups into plastic tubs labeled with the sample type in the cup.
6. Use a soil moisture probe to check the moisture level which should be at least 40%, if not, add 50ml-100ml of water to increase moisture content.
7. Allow the samples to sit in the cups of compost for a week, retest soil for N,P,K with the LaMotte Soil Test Kit.
8. After a week, retrieve the plate material from the compost, clean off sample to collect new weight. Record data in lab notebook.
9. Continue steps 6-8 for 4 weeks or as time permits.