Missoula County
INTEGRATED PLANT MANAGEMENT
Fact Sheet No. 1
COMPOSTING - One Solution for Landscaping Problems

Composting is a controlled decay process in which manures and plant residues are changed by microbial action into a chemically-more complex and stable form, **Humus.** Humus is nature=s gift to gardeners. Not only does it provide and regulate the release of nutrients to a plant, but it also gives soils the capacity to forgive many gardening mistakes and/or poor growing conditions. Good-quality compost can:

Improve Soil Structure

Compost lightens a heavy soil, which increases its drainage capacity, and creates pockets for air. Compost also acts as a sponge in light soils, holding water, and then slowly releasing it as needed by the plant. Compost improves the tilth, or workability, of most soils and can increase soil organic matter levels. Higher organic matter levels usually mean greater plant quality and yield.

Improve Soil=s Water Management

Compost helps plants resist drought and irrigation management problems (too much/too little). There are reports that compost diminishes soil erosion since it allows soils to take on greater amounts of water before becoming completely saturated.

Improve Nutrient Availability

Compost can often eliminate the need for fertilizer. Depending upon the initial materials, compost can provide a good balanced fertilizer. A typical manure-based compost usually contains 1% to 2% nitrogen, 0.3% to 1.5% phosphorus, 2% to 3% potassium, 2% to 6% calcium, 0.5% to 1.5% magnesium, and trace minerals. Most of these nutrients are released slowly as the plant needs them, like a timed-release vitamin capsule. The nitrogen in most com-posts may not be sufficient for some plants. But compost may provide much of the phosphorus, potassium, calcium, and magnesium needed by many landscape plants. In fact, compost can help make nutrients already present in the soil more available to the plant.

Improve Soil pH

Compost can neutralize and buffer soil pH, lowering the pH of alkaline soils and increasing it in acid soils. This is important since many plant nutrients are not available when the pH is too alkaline/too acid.

Suppress Plant Diseases

Compost has been shown to suppress soil-born disease in field, container, and green-house situations. Researchers report that compost tea may suppress *Late Blight* in

potatoes and tomatoes, *Gray Mold* in strawberries, *Downy Mildew* on grapes, and *Apple Scab* on apples.

Improve Soil Biological Activity

Compost addition stimulates most of the fungi, bacteria, and arthropods the soil needs to do its many jobs. In depleted soils, compost can slowly introduce a full complement of active, beneficial soil microbes.

Reduce Transplant Shock

Plant survival improves if compost is added at planting.

Remediate Herbicide Contaminated Soil

Research indicates that pesticide breakdown can be enhanced by compost addition.

How To Evaluate Quality - Composts are not created equally

Not all composts provide the foregoing benefits. Choose a quality, finished compost. Finished compost has a uniform consistency and an earth smell. Its original materials are no longer easily identifiable. Sight and smell alone may not be accurate measures of the highest-quality compost. The following parameters will help to better evaluate compost quality:

The Ph Should Be Between 6.5 And 7.5

Composts for container media can be lower than 6.5. Your compost can be sent to a testing lab for analysis. The Missoula County Extension Office has the necessary form and instructions.

Compost Temperatures Should Be 8E F. Above The Seasonal Soil Temperature

A soil or a compost thermometer can be used. If the compost still feels warm to touch, it should only be used with caution, or allowed to continue composting.

Finished Compost Should Contain A Relatively Balanced Level Of Plant Nutrients

A ratio of nitrogen, phosphorus, and potassium close to 2:1:3 usually provides the best plant growth. Commercial composters provide nutrient analysis upon request.

In General, Good Quality, Finished Compost Should Have A ACrumb@ Structure, Or What In Soil Is Good ATilth@.

It should not be sticky or ball together like wet clay.

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