

NOURISHING PLANTS ORGANICALLY: A Meeting of Science & Gardening

Lee Reich, PhD (www.leereich.com, garden@leereich.com)

Philosophy of nourishing plants

Nitrogen

- Important plant nutrient, and most fleeting
- Forms plants can use: nitrate, ammonium

Compare conventional vs organic approach

- Conventional: apply nutrient salts
 - Immediately available
 - Salt burn
 - Leaching
- Organic: organic (living or once living) materials convert nitrogen to available forms
 - N cycle: forms of N, influences of temperature on conversions
 - Advantages of organic N:
 - N available in synch with plant needs
 - Less chance of leaching and salt burn

Practical applications, examples

- Use of soybean meal
 - Apply late fall to late winter, so no leaching
 - Must apply in advance of needs
- Nourishing blueberries, which prefer ammonium N and need very acidic soil
 - Little nitrification in acidic soils

The Whole Story

- "Organic" is carbon-based agriculture
- Carbon-based = bulky organic materials
- Benefits of organic matter in soil
 - Nutritional: nutrients supplied, rendered from soil, more available, latched onto
 - Physical: aggregates soil for better aeration, sponge-like to hold water
 - Biological: nourish microbes, beneficial microbes reduce pests

Tapping into the carbon cycle in the garden

- Compost
 - Garden scale
 - Farm scale
 - Compost happens: need right material in right place at right time
- No till
 - Avoids excessive "burning up" of organic matter
 - Top down gardening: lay organic materials on to of the ground
 - Beds and paths to avoid soil compaction

Utilization and preservation of bulky, organic nitrogen

- Good for plant health
- Good for the environment
- Sustainable

Recommended reading:

- *The Ever Curious Gardener: Using a Little Natural Science for a Much Better Garden*
- *Weedless Gardening*

(Both books available from usual outlets as well as directly from the author — me, signed if you wish — at www.leereich.com/books)