Organic Lawn Management

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So you have taken over a chemically managed lawn and wish to convert it to be organically maintained.

- Assumptions and observations (hypothetical)

➢The lawn is relatively free from weeds

➢The lawn is the color of deep, not from nature green but has a deep thatch layer from too many high nitrogen apps.

➢Due to the repeated use of pesticides, fungicides and herbicides the lawn has a reduced population of beneficials.

Assumptions and observations (hypothetical) continued

➢ The lawn is maintained (mowed and watered) by the homeowner (or mowed by the homeowner and mowed/tidied by a neighborhood landscaping outfit).

➢The soil is compacted
* no aerations
* clippings being hauled away

➢The lawn is very short and a 2' perimeter around the edges is extra short with moss taking over

➢Watering is being done at 10min durations every other day of the week

Client Contact

➢ Of utmost importance. The client may have many reasons for switching to organic. Identifying these reasons will reinforce the decision

➢Client participation dictates success with every step

✓ reach an understanding

✓ reality check: coming from a chemically maintained landscape the homeowner may have unreal expectations about what the lawn will look like

➢Make a timeline

✓The lawn may go into shock from the lack of synthetics

✓The lawn may take at minimum, one year to come around with the slower release fertilizers and getting microbial activities functioning

✓Immediate timelines are needed to establish proper mowing and watering schedules.

Soils and soil chemistry

- Nutrient cycling:

❑ All plants cycle nutrients, using and returning nutrients to the soil

❑The turf uses elements from the soil, air, clippings and water.

❑All elements are exchanged for each other.

❑Many different life forms are utilized here

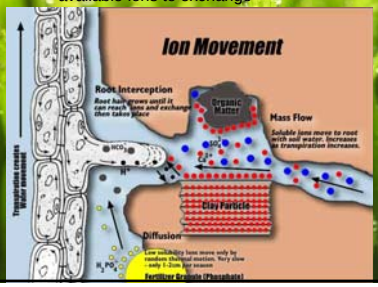
Cation Exchange

❑Ions; positive and negative molecules are held within the soil

✓ micronutrients & macronutrients

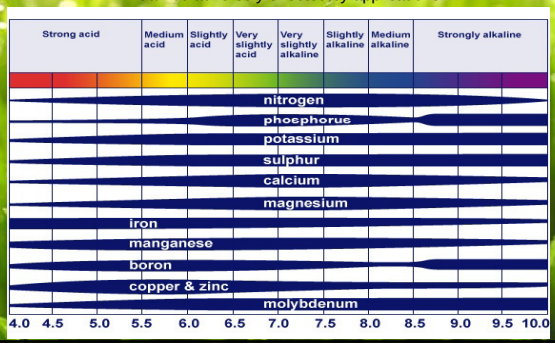
❑Plant roots exchange molecules within the soil

✓Soils with higher organic material content have more available ions to exchange



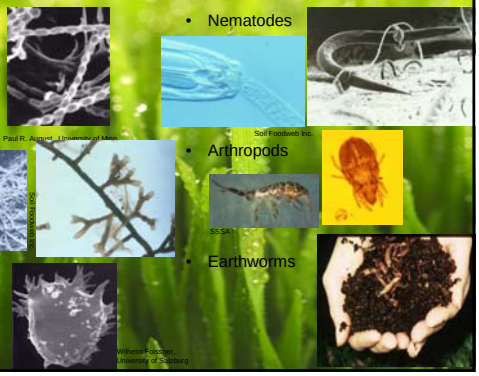
pH

- ❖Stands for potential hydrogen
- ❖Directly impacts the availability of nutrients in the soil
- ❖Can be adversely effected by applications



Soil Biology / Soil Food Web

- Bacteria
- Fungi
- Protozoa
- Nematodes
- Arthropods
- Earthworms



Beneficial Fungi

aka: mycorrhizae

- Mushroom "roots"

✓Colonize root zones forming symbiotic relationships

✓Greatly increase the plant's root zone (100x). Able to exploit vastly more soil area and fit into smaller spaces roots can't fit

✓Produces antibiotics for the host plant

✓Increased pathogen resistance

✓Carries nutrients to the plant

✓Creates usable nutrients through enzyme production

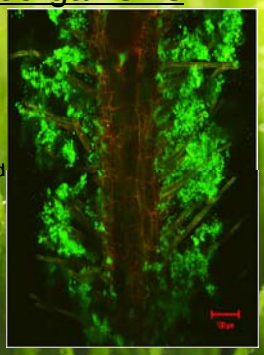
Beneficial Microorganisms

- ❑ Bacteria and microbes

✓Some bacteria are stimulated by mycorrhizae

✓ Major players in the breakdown and re-mineralization of organic matter

✓Able to suppress soil-borne pathogens



Compost Tea

- Exponentially breeding soil microorganisms
- Fighting the good fight
- Adds humic acids
- Helping to jump start biological activities in the soil

Best Management Practices For Turf

- mowing

❖Frequency- every 4-7 days

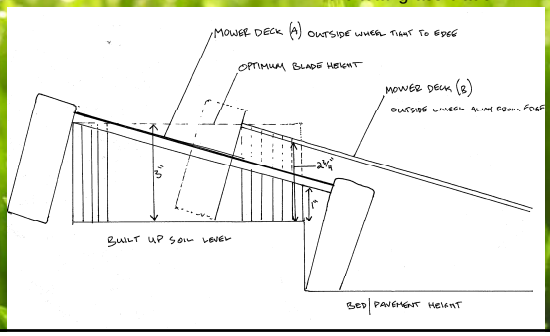
❖Height 2.5-3"

❖Keep mower clean/sharp

❖Try to mow when it's dry to prevent fungal issues

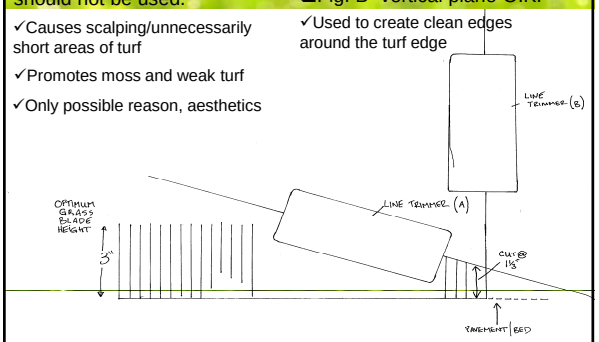
Mower etiquette

- ❖Mow with the outside tire as far as possible from the turf's edge
- ❖ Change patterns frequently to prevent ruts and striping
- ❖Never remove more than 1/3 the total grass blade



Line Trimmers

- ❑ Fig. A- horizontal plane should not be used.
  - ✓Causes scalping/unnecessarily short areas of turf
  - ✓Promotes moss and weak turf
  - ✓Only possible reason, aesthetics
- ❑Fig. B- vertical plane O.K.
  - ✓Used to create clean edges around the turf edge



B.M.P. cont.

- Mulch mowing

✓When done properly does not add to thatch

✓The mower used must be able to adequately chop cut blades into small pieces

✓Should only be done on a disease free lawn

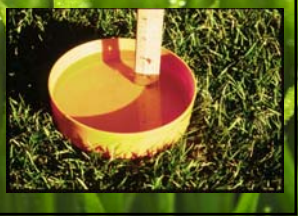
This is not adequate^

B.M.P. cont.

- Watering

✓The deeper the water penetrates the deeper the roots

- ▪One Inch of water per week during summer months
- ▪Check your systems output
- ▪Only one to two applications needed per week
- ▪Never apply at the 10 min Every day/other day intervals
- ▪Water in the a.m. just after dawn



Aeration

- Loosens soil compaction

➢Improves air and water penetration

➢Able to gradually improve soil Structure and rooting depth

Over seed

- Seed selection
  - ❖ Location/exposure
- Timing
  - ❖ Spring or Fall
- Aftercare
  - ❖ Watering
  - ❖ Top dress for success
- De-thatching
  - ❖ If necessary, Should be done prior to aeration and over seed
  - ❖Opens up soil surface to pull better plugs and for seed dispersal /root adhesion

Fertilizer

- Slow release
- Balanced
- Contains water insoluble nitrogen
- 4 lbs of nitrogen per year per 1,000 sq ft
- N Applied 1lb per 1,000 sq ft per application
- Synthetics sometimes contain more nutrients than the plant can use; leaching the rest into the ecosystem

Weeds and weed grasses

- Tolerance

✓Cultural controls

➢Mowing/ prevents seeds from forming

➢Proper turf height shades out weeds and moss

✓Hand pulling

❑ Herbicides

✓Mode of action

✓Selective and Non-selective

✓Cautions

✓NO WEED N' FEED!

- W.N.F. unnecessarily covers the entire lawn and is persistent in the environment much longer
- Dangerous to kids, pets and wildlife

Carbon!!!

- An often overlooked and major component of soils

✓Over applications of synthetic nitrogen actually reduce soil's carbon and the soil's ability to hold nitrogen

- Top dressing with compost

✓Adds vital carbon containing organic matter

- Organic matter

✓Creates aggregates and pores that hold and exchange nutrients, water and minerals with the plant's roots

- Mulch mowing

✓Helps return nutrients, carbon and nitrogen to the soil

Moles and Crane fly

- Moles: Give up!

Use mounds as free top-dressing

Rake hills in a radial outward pattern like bicycle spokes

Stomping down mole hills Only causes new ones

Leaving the holes alone, the moles may stop pushing new mounds up once they have their runs

- Crane fly

A healthy lawn is able to Withstand 25 larvae per Sq. ft.

Crane fly are typically a symptom of an underlying problem

If absolutely necessary!!!!! As a last resort A synthetic pyrethrin may be used to reduce the population

The Wrap Up

- ❖ It takes time to go organic and see results.
- ❖ Proper cultural practices reduce the need for inputs.
- ❖ Most soil organisms are good.
- ❖ Chemical regimens reduce beneficial populations and weaken the soil food web.
- ❖ Organic matter is vital for optimum nutrient availability.