

Fall Groundwork for a Healthy Landscape



City of Kirkland - Natural Yard Care



The Value of Healthy Soil

- Reduces need for chemical fertilizers and pesticides
- Reduces irrigation needs
- Filters out urban pollutants
- Sequesters stormwater
- Stores carbon from atmosphere

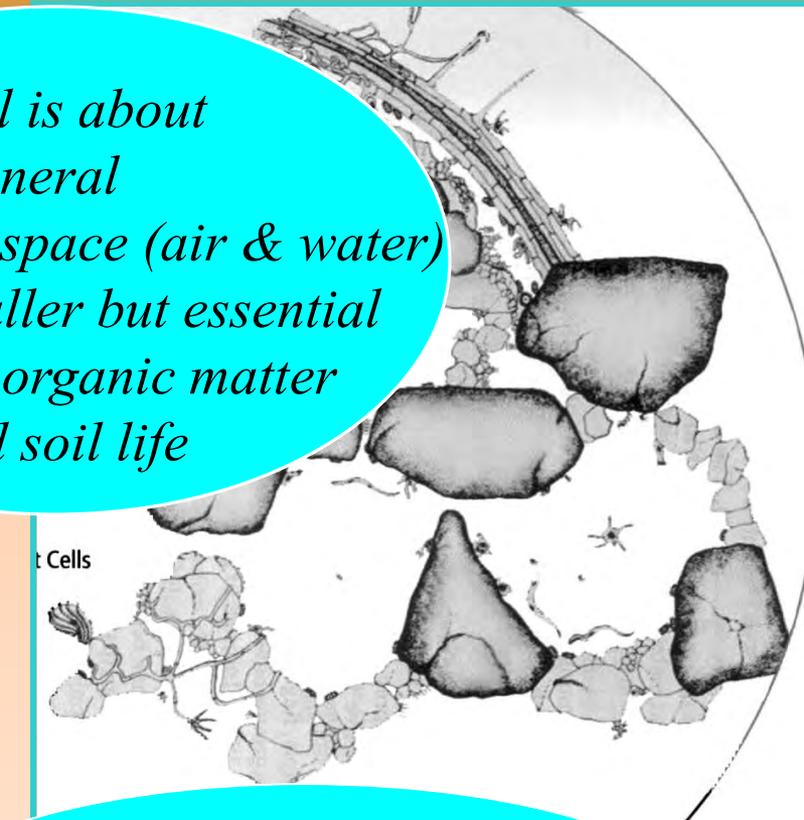


Soil Components

Soil Components

- **“The Dirt”**
(mineral particles)
 - sand (0.05 to 2 mm)
 - silt (0.002 to 0.05 mm)
 - clay (<0.002 mm)
- **Air and Water** (in pore spaces)
- **Organic Matter and Soil Life**
(create aggregates & pores)

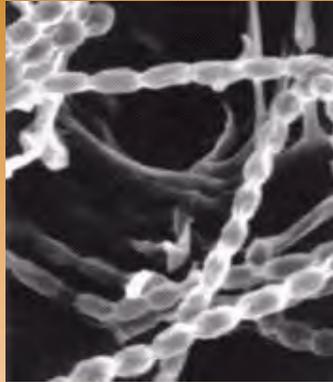
Good soil is about
- half mineral
- half pore space (air & water)
- plus a smaller but essential
amount of organic matter
and soil life



“Loam” is a mix of
sand, silt, clay and organic,
formed over time by nature

Soil Foodweb

- Bacteria



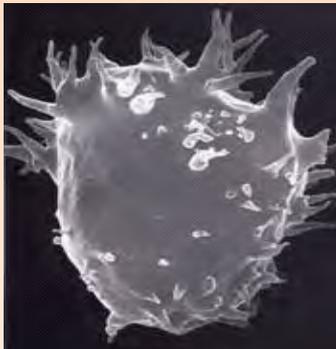
- Fungi

Paul R. August, University of Minn.



Soil Foodweb Inc.

- Protozoa



Wilhelm Foissner,
University of Salzburg

- Nematodes



Soil Foodweb Inc.

- Arthropods



SSSA



- Earthworms



Native Sub Soils in the Puget Sound Basin

Land of Fire and Ice

Glacial Till

Hardpan

Outwash Soils

Lake/Marine Bed Soils

Volcanic Ash

Mudflows



Manufactured Soils

- Inputs are sourced from variable places
- Can come from construction sites
- Can have certified organic components
- Are not native soils
- Ask for testing information



Soil Testing; A Good Tool

- Determine soil health baseline
- Assess nutrient quality
- Get guidelines for further amendments
- Assess toxin issues
- Fall is a great time to test soil!



Toxin Concerns for Edible Gardening

- Houses built pre – 1978
- Old orchard grounds
- Industrial sites (old substations, auto shops)
- Downwind of cement plants
- Areas affected by Asarco Smelter plume
- Along a busy highway

Soil Test

SEND TO: KING CONSERVATION DISTRICT
1107 SW GRADY WAY STE 130
RENTON, WA 98057

GROWER: O'GRADY

SUBMITTED BY: JAY MIRRO

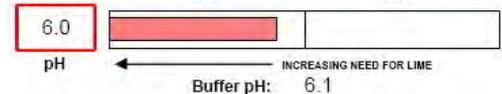
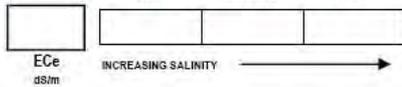
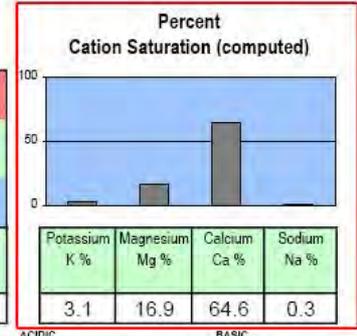
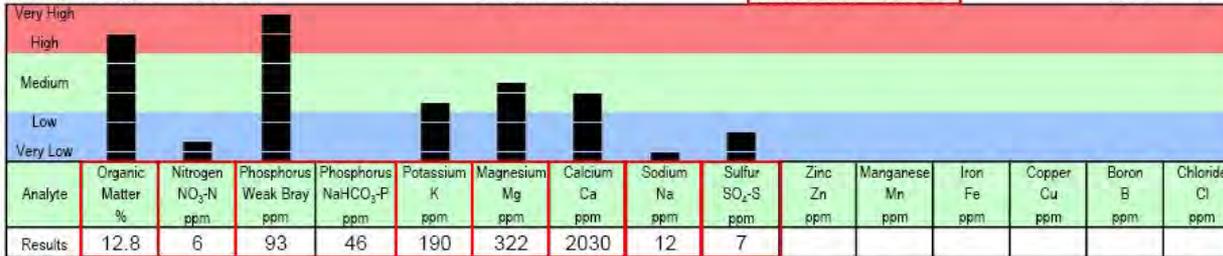
Graphical Soil Analysis Report

DATE OF REPORT: 10/28/13

LAB NO: 59383

SAMPLE ID: VEGE2

PAGE: 2



NaHCO₃-P unreliable at this soil pH

Soil Fertility Guidelines

CROP: VEGETABLES

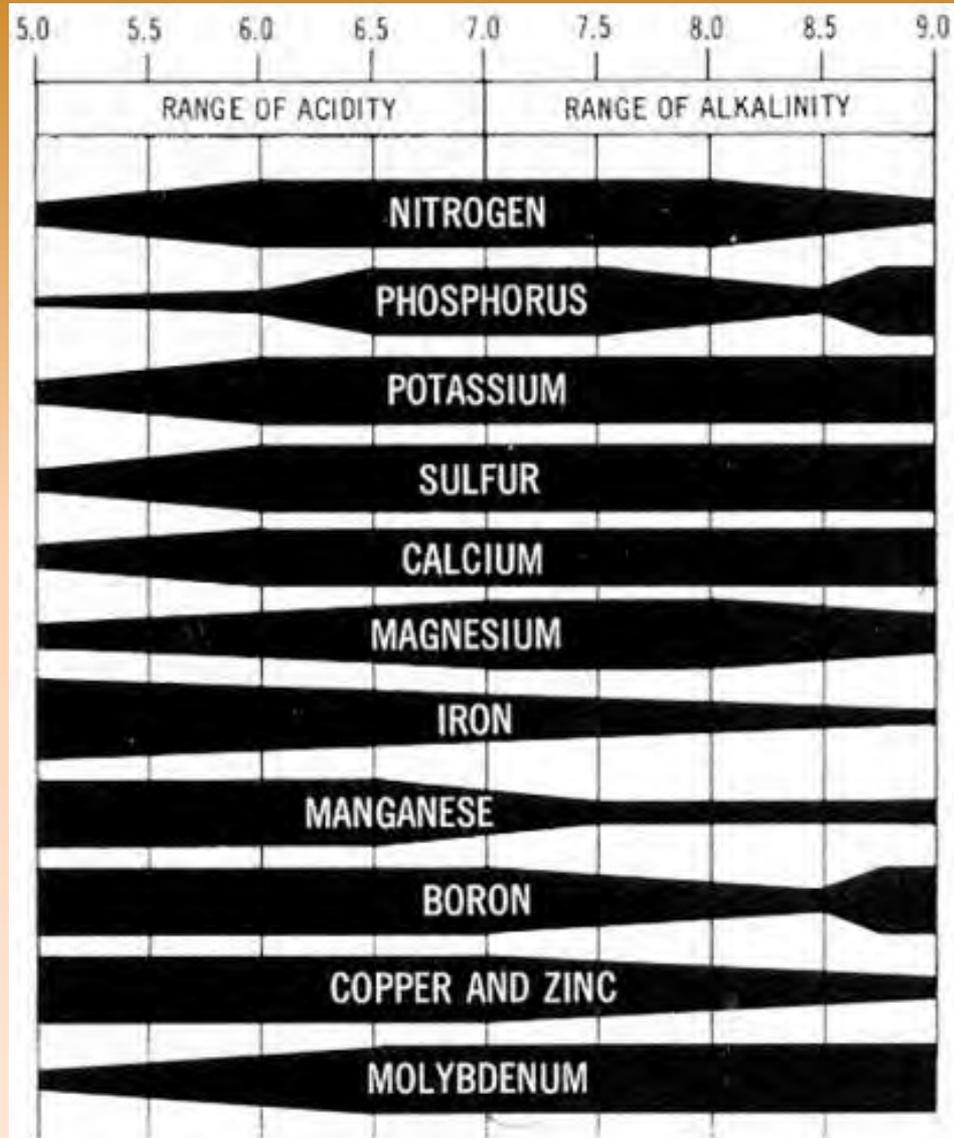
RATE: lb/1000 sq ft

NOTES:

Dolomite 100 score	Lime 100 score	Gypsum	Elemental Sulfur	Nitrogen N	Phosphate P ₂ O ₅	Potash K ₂ O	Magnesium Mg	Sulfur SO ₂ -S	Zinc Zn	Manganese Mn	Iron Fe	Copper Cu	Boron B
	180			3.3		3.0		0.6					

C
O
M
M
E

pH and Nutrient Availability



Amending Your Soil

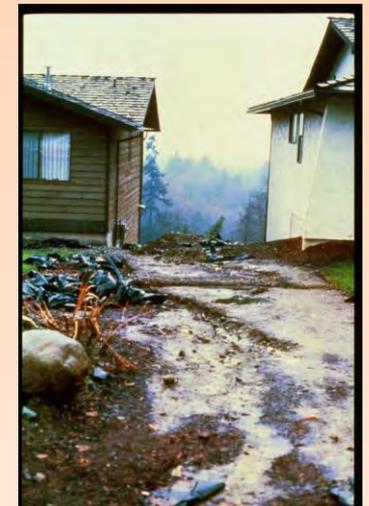
- Yard or food waste compost – curbside or home composting
- Manure based compost – livestock and biosolids
- Growing cover crops – especially in the fall



Disturbed Soil and Compaction



- Topsoil layer removed
- Compaction
- Subsoil (or worse) used to fill layers
- Toxins



Cover Crops Protect and Nourish Soil

- Protect from winter rain and leaching of nutrients
- Prevent compaction
- Add nitrogen
- Add organic matter
- Keep weeds at bay – sometimes inhibiting certain types of weeds



Mulch Protects and Nourishes Soil

- Moderates soil temperature
- Prevents weeds
- Conserves moisture
- Makes a finished look
- Creates habitat for beneficial insects and birds



Growing a Healthy Sustainable Lawn

- Mowing height – 2 inches minimum to outcompete weeds, shade soil, conserve moisture
- Grasscycle – reduces need for fertilization to one application in the fall
- Use natural, organic lawn fertilizer instead of chemical fertilizers
- No Phosphorus is allowed in lawn fertilizers unless your soil test shows P depletion – protects waterways



Growing a Healthy Sustainable Lawn

- Apply lime in the fall if pH is low – check your soil test
- Lawns need 6-8 hours of sun – if too shady try alternatives
- Provide adequate water – 1 inch per week to 6 inch depth
- Good drainage matters—aerate and de- thatch and spread compost and reseed to keep them invigorated



Lawns are...

- Many individual plants
- Grasses that like to grow tall
- Good competitors when healthy
- Permeable when healthy
- Hungry!
- Thirsty!



Lawn and Seed Choices for NW Gardens

- Perennial Rye
- Perennial Fescue
- Kentucky Bluegrass
- Eco-Turf
- Native Grasses
- Steppable Groundcovers
- Perennial Clover



Perennial Rye



Perennial Fescue



Steppables – Creeping Thyme



White Clover



Eco-Turf

Lawns in the Wrong Place

- **Slopes** - No more than 12% grade – avoid runoff, hard to mow – use groundcovers instead
- **Ponding** – Indicates compaction or high water table – assess for and correct or plant adapted plantings
- **Under Conifers** – Shade, tree roots, needles, ground water – substitute with shade loving perennials, ferns or groundcovers.
- **Shady Garden** – Lawns need 6 – 8 hours of sun daily Substitute with shade loving plants and natives.



Weeds and Lawns

Weeds will outcompete lawn if conditions for healthy lawns are not met. Improve the health of your lawn to overcome weeds.

Corrective measures include:

- Mowing high – 2 inches to shade out weed seedlings
- Not letting weeds go to seed
- Aerating, de-thatching and topdressing -improve soil conditions
- Removing lawn from areas where it cannot thrive
- Tolerating some weeds – clover adds nitrogen to the soil



Common Lawn Weeds

Dandelion



Plantain



Buttercup



Moss



Cat's Ear



Clover



Sheep Sorrel



Self Heal



**Some weeds are edible,
others improve soil, many
are companionable with
lawns**

Common Lawn Weeds

Daisy



Yarrow



Ground Ivy



Annual Bluegrass



Speedwell



Tall Fescue



Common Lawn Pests

- Moles
 - ❖ Tunneling and hills – indicates your soil has life in it!
 - ❖ Stamp down hills and runs, tolerate until they go deeper into ground in summer
- Crane Fly
 - ❖ Creates bare patches in the soil
 - ❖ Indicates moist soil – correct or adapt, let lawn go golden in the summer, attract birds as predators, chickens and larvae, reduce pesticide use, apply nematodes as a bio-control
- Red Thread
 - ❖ Cosmetic damage mostly – indicates low nitrogen and wet soil
 - ❖ Mow off infected blades and fertilize
 - ❖ Prevent by keeping soil fertile and well drained

Common Lawn Pests

Mole hills



Crane Fly Damage



Red Thread in Active Stage



Lawn Renovation Basics for Fall

September – November (pre-frost)

September

- Remove weeds
- Aerate soil– leave plugs to break down

September to November

- Loosen soil with rakes
- Spread organic or slow release fertilizer
- Spread seeds
- Top dress with compost and cover seed



More Resources

- Garden Hotline – 206-633-0224 – [www,gardenhotline.org](http://www.gardenhotline.org)
- Seattle Tilth classes www.seattletilth.org
- *“Teaming With Microbes”* Jeff Lowenfels and Wayne Lewis

Please join us next for:

- ❖ **Planting a Water Smart Garden – May 21**
- ❖ **Pollinator Savvy Plant Care - June 4**