

Systems and Management

Dan Kittredge
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Fall

- Soil testing and Mineral Balancing
- Address systemic underlying mineralogical deficiencies
- Soil test is a snapshot – no number is perfect unless all are perfect.
- 90% history and physical – 10% lab report

Logan Base test plus targets

- 75 ppm sulfur
- 75 ppm phosphorus
- 68% +- Calcium
- 12% +- Magnesium
- 4% +- Potassium
- .5-3% Sodium
- 3ppm Boron
- 80-90ppm Manganese

Continued

- 4ppm Copper
- 8ppm Zinc
- 2ppm Cobalt
- 1ppm Molybdenum
- .5ppm Selenium
- <200ppm Aluminum
- >50ppm Silicon
- Organic Matter 5-8%

Stone Dust

- Local Basalts and Granites
- Source at Quarries
- Not gravel pits
- Ask for fines or float
- Generally 2-10\$/ton
- Basalts generally best
- Look for paramagnetic charge
- 1-3 tons/acre of fine powders. Up to 10 tons/acre

Compost

- For those who make it – 10:1 carbon:nitrogen
- Significant quotient woody materials
 - Ramial chips best type (branches <2 in diameter)
 - For fungal / bacterial balance
- Best place to apply minerals
- Great place to put inoculants
- Biodynamic Preparations

Cover Crops

- Multiple crops families optimal – 3 or more
- Winter Rye, Vetch, Clover in areas where warm weather crops will be planted next year
- Oats, Field Peas, Forage Radish in areas where cool weather crops will be planted next year
- Undersow starting as early as mid August in tomatoes, peppers, eggplants, cucumbers, squash, corn, kale, collards, broccoli, etc.
- 2-4 weeks before crops are likely to falter

Tillage

- System for minimal tillage
- Consider permanent bed systems
- Tilt (shallow till 1-2 inches deep) beds for prep once instead of regular fall and spring tillage/harrowing etc
- Environment for fungi to establish and dominate

Mulching

- Stockpile mulching materials in late summer and fall for next year
- Hay, straw, leaves, kelp
- Mow and bale cover crops before seeding for mulch source
- Maintain soil cover as a priority to feed soil life, maintain hydration, prevent weeds
- Combine plastic mulch with organic materials in pathways if you use that system.

Water

- Critical at all times for biological system function
- Everywhere there is soil there needs to be moisture or the biological system will shut down.
- If you have to choose either irrigation or mineral nutrition, irrigation is more important. Drip tape, overhead sprinkler, hose

Seed

- Seed quality has dramatic effect on everything
- Great disparities in the industry. (Johnny's quoted 200,000-800,000 seed per pound spectrum on bolero carrot.
- Larger seed – better germ time, vigor, and overall vitality
- Most organic seed grown with Compost and basic liming but not much other mineral or biological fertility.

Seed

- Identify varieties
- Ask companies for details on test weight and screen size.
- Only metrics measured now are basic germination rates and pathogen presence.
- Save your own seed.
- How to feed crops to grow best seed?

Inoculation

- Functional digestive tract
- Needs to be established at germination/birth
- Ideally a broad spectrum of bacterial and fungal species.