

2010 Course 5

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Late Summer / Early Fall

- Seed Saving
- Soil testing / Mineral Balancing
- Cover Cropping
- Locally sourced bioinoculants/enzymes
- Water structuring/spinning/aerating/
magnetizing
- Cosmic Pipes / Field Strength Building

Where are we now?

- Finishing off the season with force
 - Continue to monitor and manage conductivity
 - Conductivity dropping will foreshadow disease and pest incidence.
 - Watch fruiting crops especially. If you have noticed increased fruit production, it will drop off when available nutrients run out.

Weak points evident

- At this point deficiencies will have taken tolls. This year in many places lack of water and too much heat. Garlic, onions and potatoes that did not fill? Lack of water. Brassicas stressed? Lack of water. Problems getting flowers or fruit to set? P deficiency based on fungal stress brought about by lack of water.

What is your field strength?

- Presume critical factors like mineralogy, biology, energy, humus.
- What are the limiting factors in your system?
- What factors are limiting in separate parts of the system?
- Looking across the field what do you notice? How is the soil in different areas of the field?
- Are there areas where things thrive and where they don't?

What raw materials will help you?

- For mineral deficiencies - calcite, dolomite, rock phosphate, K-mag, greensand, paramagnetic basalt or granite dust, gypsum.
- For humus deficiencies - humates, cover crops, compost.
- For biological deficiencies - animal manure, compost, bio inoculants.
- For energetic deficiencies, paramagnetic rock, cosmic pipes, overall balancing.

For Local Bio-innoculant

- In 5 gallon bucket
- 1/3-2/3 full of material at end
- Cover and fill with tepid water over night
- Horsetail, Comfrey, Nettles, Kelp, Alfalfa, White oak bark, Lichen, etc
- Filter out material with a cheesecloth, dilute and water into soil.

To make enzymes

- To previous recipe, add
- 1 cup EM or other inoculant, 1 cup molasses.
- Cover with lid or other means to maintain anaerobic environment. For 20-40 days or until pH drops below 3.9.
- Mix 10:1 with water or at minimum with pH above 5.5 and apply.
- Other possible ingredients, ferns, sumac, pokeweed.

Preparing to cover crop

- Consider applying biology teas to help break down crop residue.
- 4 pounds per acre of sea minerals might be added to crop breakdown spray.
- Consider scalping effect of tool like a flail mower to kill crops and give soil contact to residue without destroying structure.

Setting the stage for next year

- For tractor and hand managed operations.
- Consider setting in place permanent raised beds, so that compaction of cropping area is minimized.
- White clover in paths, so life is maintained, and earthworms can continue to work.

Fall fertility for beds

- Lowest mineral levels, and soil most worn out state should be at the end of cropping.
- This is the time to test soil to see what underlying mineral deficiencies are still present.
- Best time to add base minerals is with cover crops at seeding time.

Mineral levels to aim for

- Base saturation
- Ca - 70-75%
- Mg - 15-18%
- K - 3-5%
- Ppm
- P - 75
- S - 75

Compost

- Alternate system for mineral amending is to apply minerals into compost piles.
- For those making compost, after taking soil test, perhaps apply half of minerals into soil with cover crops, and half into compost pile.
- Both manners will be very beneficial in pre-digestion of minerals for crop use.

Compost

- When making compost, remember to integrate bacterial/fungal dominance understanding into planning process.
- The woodier, and more perennial the crop, the more fungal dominant the soil it prefers, the more lignified cellulose should be in the material being composted.

Seed Saving

- Choose thriving vital plants
- Epigenetics, multiple generation growing out and sharing
- Sign up if interested in taking part in collaborative process of quality germplasm dissemination

Forms of Genetics

- Landrace - not selected for type, many different expressions in seed
- Heirloom - Old family types passed down over generations
- Open Pollinated - Like heirlooms but of newer origin
- Hybrids - cross bred species whose seeds will not necessarily be true to type.

Brassica

- *B. juncea* - mustards
- *B. napus* - rutabega, russian kale, rape
- *B. oleracea* - cabbage, kale, b. sprouts, kohlrabi, broccoli, collards, cauliflower
- *B. rapa* - turnip, raab, chinese cabbage and mustard, komatsuna, tatsoi, mizuna, pac choi/ bok choi
- *Raphanus sativa* - radish
- Half mile, 50-100 plants.

Chenopod

- Beta Vulgaris - beets chard and mangle.
1 mile 25 plants minimum.

Compositae

- *Latuca sativa* - lettuce, 50-100 feet, 25 plants

Cucurbits

- *C. pepo* - acorn, spaghetti, zucchini, yellow, delicata, patty pan, sweet dumpling, gourds.
- *C. maxima* - buttercup, hubbard, red kuri, giant pumpkins
- *C. moscata* - butternut, burpee butterbush, long island cheese
- Half mile, minimum 25 plants

continued

- *Cucumis melo* - cantaloupe, crenshaw, honeydew
- *Cucumis sativus* - cucumber
- *Citrullus lanatus* - watermelons

Graminea

- Zea mays - corn half mile, 100 plants

Leguminosea

- *Phaseolus vulgaris* - navy, kidney, black turtle, soldier, jacob's cattle, green, wax
- *P. Lunatus* - lima
- *P. coccineus* - scarlet runner
- *Pisum sativum* - pea
- *Cicer arietinum* - garbanzo
- *Glycine max* - soybean
- 50 feet, 25 plants

Allium

- *A. cepa* - onion, shallot
- *A. ampeloprasum* - leek
- 25 plants, 1 mile
- *A. sativum* - garlic, self

Solanaceae

- *L. lycopersicum* - tomato 25 plants, 25 ft
- *Capsicum annuum* - most peppers
- *C. frutescens* - habanero, tabasco
- 25 plants, 500 ft
- *Solanum melongena* - eggplant
- 25 plants, 50 feet
- *Solanum tuberosum* - potatoes, self

Umbelliferae

- *Daucus carota* - carrot
- *Pastinaca sativa* - parsnip
- *Coriandrum sativum* - cilantro
- *Anthemum graveolens* - dill
- *Petroselinum crispum* - parsley
- 25 plants, half mile

Standards Process

- Tools currently used to discern antioxidant and mineral levels in crops. Hand held light emitting sensors that give immediate feedback on parameters calibrated for.

Optical absorbance sensor

Rapid quantitative estimation of flavonoids in fruits, vegetables (leaves and peels), tea leaves, medicinal and aromatic plants, as:



Applications

- Antioxidants
- Anti-cancer agents
- Nutraceuticals
- Color
- Nutrition deficiency (N, P, Fe)

- DUALEX HCA: In the UV-B at 315 nm
- DUALEX FLAV: In the UV-A at 375 nm
- DUALEX ANTH: In the VIS at 530 or 590 nm

Three types of polyphenols:

- Hydroxycinnamic acids
- Flavonoids
- Anthocyanins

Measured parameter

Epidermal optical absorbance

Light sources

2 light-emitting diodes (LED):

FLAV: UV-A and Red

ANTH: Green and Red, or Amber and Red

HCA: UV-B and Red



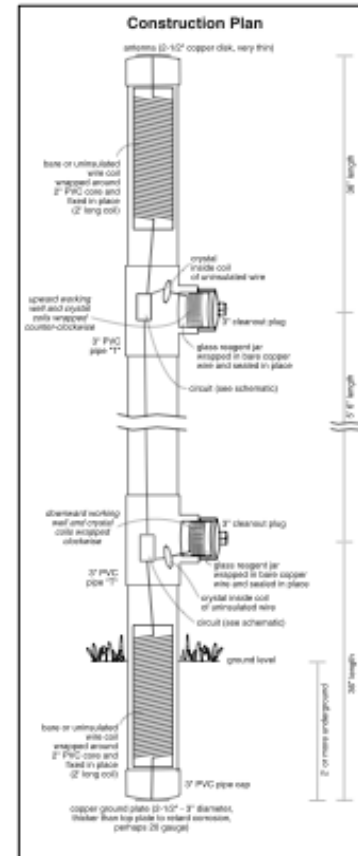
Water

- Magnetic water conditioner from dripworksusa.com
- Also Mazzi 1 inch npt model dt-12 water spinner.
- Simple tools to structure energize and aerate water.
- Put in line before injector.



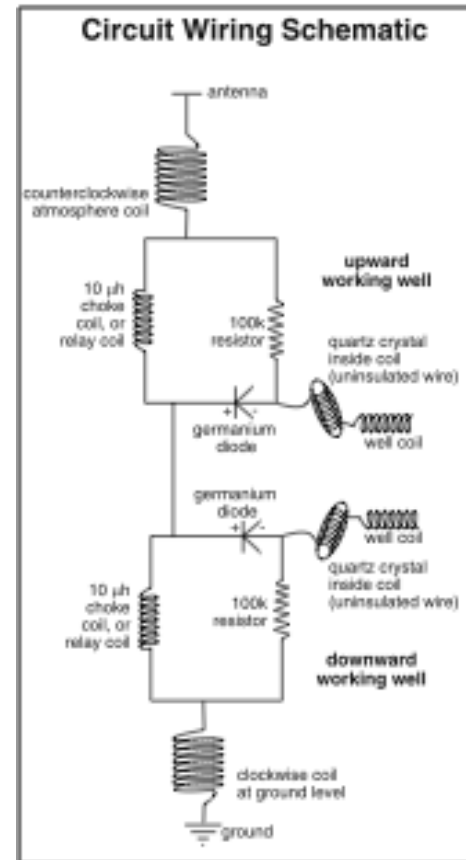
Energy Tools

- High Level design for a cosmic pipe. Published in Acres USA in 1997. Based on a decades experience with technology designed by Galen Heironymus
- Projects energies across the environment. Homeopathic potencies of BD preps, materials, essences etc.



Energy Tools

- Upward and downward wiring for a cosmic pipe.
- This design integrates cosmic and earthly forces and will prevent imbalance from building.



New Course

- New course starting in October.
- 3 in Ma, 2 in Vt, 2 in Ny, 1 in Ct
- \$300, 5 Courses, biweekly newsletters
- If you have been inspired and know others who would benefit from the course please spread the word.