From Chemical to Organic

Approved by Ten Rivers Board for Transition

The Transitional Protocol

BIO BALANCE TESTING

Healing alignments with earth processes while producing high quality foods.

Biological agriculture requires awareness that is best supported with lab testing. Utilizing scientific tools of investigation and measurement gives us data with which to determine the health of our soils as translated into the vitality of our foods. Organic certification does not require testing at this time. However, without testing, we have no way to measure the parameters necessary as farms and gardens are transitioned from conventional, chemically- based agriculture to biological production systems. Nor have we a way to measure resilience of biological activity season-to-season.

The following set of tests constitutes a protocol utilizing the best information we can gather to assure the production of highest quality foods. Ideally, this etiquette should be transparent, allowing consumers to see relative scales of farm-to-fork safety and nutrition.

Each of the five areas of testing has the capability of being shown in simple scales, which could be posted with farms and on farm products. These tests also show important detail that can aid farmers and farm advisors in building a dynamic, sustainable food production system.

SOIL RESIDUE TESTS

This test is usually performed once to establish a baseline of what is present in the soil from previous farming practices.

ANTECH (Analysis/Technology) Labs 501 NE Thompson Mill Road Corbett, Oregon 97019

Diana Lee Tracey Tel: 503-695-2135 Fax: 503-695-2139 Email: <u>antech@cascadeaccess.com</u>

Consultation and laboratory services for food and agriculture. Many years of experience with organics. Cost: \$150 1. Chlorinated Hydrocarbon and Organic Phosphates Test This test provides data on synthetic chemical residues with very long break-down times. Years of research conducted by Oregon Tilth shows that some of these residues can be taken up by certain plants at levels that affect food quality. Depending upon what is present in the soil, certain fields should not grow certain plants. These residues also negatively affect soil biology development.

2. Tissue Test

This test is required to show uptake levels. Tissue tests can also be used to check for Halogen pollutants such as perchlorate, bromine, chlorine and chlorine byproducts and fluoride, all of which are implicated in breast disease, hypothyroidism, immune system problems, mental retardation in newborns, poor fetal development, poor neonatal development, and thyroid cancer.

SOIL CHEMISTRY/DIGESTIVE CAPACITY TEST

This is the most complete test at this time for biological farmers.

INTERNATIONAL AG LABS, INC. 800 W. Lake Ave., PO Box 788, Fairmont, Minnesota 56031 Tel: (507) 235-6909 Fax: (507) 235-9155 www.aglabs.com

Provides tests and data for mineral levels, ion exchange rates, humus, formazan or digestive capacity. This is a full agricultural laboratory, staffed by chemists and assistants providing many kinds of agricultural testing from soils, to mycotoxins that infest grain, and offering consult on any crop. Their scientists have worked on soil problems throughout the world.

Notes:

- Typical soils formed with herbicides and pesticides will show a microbial digestive capacity level of less than 200; biologically farmed soils still using herbicides rate in the 300-500 range.
- A reading of 600 is considered entry-level good.
- Organic soils need to have readings from 1000-2000 for excellent biological activity.
- Low digestive capacity translates to low nutritional content of crops.

SOIL FOODWEB, INC. www.soilfoodweb.com 728 SW Wake Robin Avenue Corvallis, Oregon 97333 Tel: (541) 752-5066 Fax: (541) 752-5142 info@soilfoodweb.com Provides best test data at this time for total and active bacteria, total and active fungi, protozoa (amoeba, flagellates and ciliates), and nematodes. An international group of soil biology laboratories analyzing and advising on microbial life in the soil and on plants.

Cost \$195.00

Morphological or DNA counts of actual micro organisms at the beginning of a soil building process and in periodic years after gives a clear picture of how management practices are building or skewing soil biology. Similar tests are available for compost and compost tea. Knowing actual biological balance figures — as compared to figures from thousands of tests - gives a clear picture of the development or damaging activities of food production and is an indicator of which members of the soil food web need specific help.

- 1. WATER: This includes any water that touches food at any stage of production or processing. Example, perchlorates have been found in 83% of both conventional and organic lettuce irrigated by the lower Colorado River.
 - o e coli
 - o nitrates
 - o perchlorates, chlorine, fluoride, industrial pollutants
 - o dioxin
- 2. NUTRITION:
 - Brix tests: Using the brix meter (simple, in the field way of assessing plant juices, calibrated in % Sucrose or BRIX, the higher refractive index will have a higher sugar content, higher mineral content, higher protein content and a greater specific gravity or density. This adds up to a sweeter tasting, more mineral-nutritious food with lower nitrate and water content, lower freezing point, and better storage attributes. Scale is poor, average, good or excellent per a chart originally developed by Dr. Carey Reams. Refracto-meters are available from Pike Agri-Lab Supplies, Inc. (info@pikeagri.com), and are a tool anyone can use to assess food quality quickly, including consumers who care about nutrition.
 - Tissue: Looking for nutrients in leaf, fruit and grain using various lab techniques. Quickly becomes expensive, and is generally used for specific targets.