Conscious Organic and Veganic Gardening at the Tree of Life in Patagonia, Arizona, USA and PPEP Arivaca Garden in Arivaca, Arizona

Dr. John David Arnold, CEO & Founder Arivaca Garden

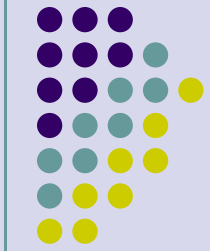
Introduction

- Conscious Veganic Gardening aims to produce food in abundance using only plant-based inputs and natural minerals to fertilize the soil while avoiding animal-based inputs.
- We employ living things to balance the Veganic Garden, such as compost & green manure cover crops for fertility; insectary plantings of flowers, culinary herbs and medicinal plants to attract helpful insects.

Steps to Creating a Veganic Garden:

- 1: Create a “Living Soil” for plant fertility
  - We use EM (Effective Microorganisms) to recycle plant wastes and to inoculate the soil and plants.
- 2: Re-mineralize the soil naturally
  - Use Kelp, rock dust, seawater, natural minerals.
- 3: Use Nature to Balance Nature
  - Control Pests by providing habitat, water and food for beneficial species that control them.

Gardening “Seed to Seed” is a Vital Principle in Veganic Gardening



- We owe our existence to the work of the plant kingdom that provides us with air to breathe, food to eat, shade, fuel, beauty and bio-diversity.
- We need to give back to the plants something in return for all they do for us.
- Growing our own seed is empowering and follows the wisdom of our ancestors.

In the Spring of 1999 EM was introduced to Tree of Life -Testing different forms and mixtures of EM showed results

EM Bokashi and other forms of EM can help create Veganic Gardening Method as seen here at SkyWalker Ranch in California

Tomatoes at SkyWalker Ranch Grown with EM Technology

EM Research in Africa shows great results for arid lands

EM Used in Aquaculture integrated with Vegetables

EM, Aquaculture, Poultry for Eggs and Vegetables

EM Multi-level food production system in South Africa 1999

Shade Houses in South Africa cover large areas efficiently

Protected from intensive sun and heat lettuce grows well in shade houses in South Africa

EM Nature Farming Class in Costa Rica is well attended

Students learning how to make EM Bokashi in Costa Rica

EM Application through irrigation water in California

Explaining the EM injection system to Dr. Teruo Higa

Using EM Bokashi to recycle food waste in 35 AZ schools

Plowdown Mix Green Manure Cover Crop in California

Plowdown Mix is ready to cut when it flowers

Plowdown mix is mowed with a flail mower & incorporated with a rotary spade

Dutch Clover in Tree of Life Garden

Roots of green manure cover crop showing N-fixation

Greens Growing Under 50% Shade in Summer

Tomatoes growing in Tree of Life Greenhouses

Greens growing in Tree of Life Gardens under shade

Harvesting the Abundance in a Cut and Come Again System

Making EM Bokashi in the Tree of Life Sprout House

Swiss Chard loaded with vitamin C and other nutrients

Harvested Greens at the Tree of Life Cafe

Dr. Arnold meeting with Tree of Life Foundation Staff to discuss setting up an international training program in Veganic Gardening & Diabetes Prevention.

Students Planting Culinary and Medicinal Herbs

Seedlings are produced in our controlled-environment greenhouse

Winter production of salad greens in our greenhouses

Gardening “Seed to Seed” so plants benefit as well as we do

Watering in newly transplanted tomatoes in Spring

Broccoli and calendula go to seed as tomatoes go in for summer production in greenhouses

Vertical Gardening injecting EM and liquid fertilizer

Mature System Vertical Gardening

Summer rains fill Harshaw Creek Behind Garden Showing Potential for Water Harvesting for Crop Production

Quan Yin Shrine Detail

We Use Veganic Gardening to Produce up to 80% of our food

- Dr. Gabriel Cousens teaches that food is a “Love Note from God”. We aim to produce food with the maximum spiritual vibration using Ahisma in our gardening practices and inputs. We offer various training programs and opportunities to learn this practice through our seva program, apprentice program and week-long classes in Conscious Veganic Gardening.

Dr. Arnold and Jorge Valenzuela, FAI Director - Moringa

Portable Greenhouse – Arivaca Garden

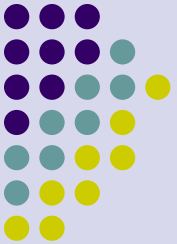
Hot Water Barrels – Arivaca Greenhouse

Portable Greenhouse for Recently Planted Seeds

Inside the Portable Greenhouse – Arivaca Garden

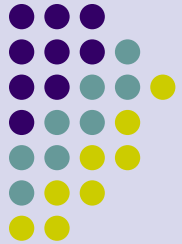
Sprouting
The Tree of Life Way:

The Many Benefits of Sprouting:



- **Alkalizing:** Our blood must maintain a delicate pH balance of 7.3655. An acidic environment and lifestyle can lower our pH, and the chlorophyll in sprouts helps offset the acidity by oxygenation our cells.
- **Bio-available Nutrition:** As sprouts grow, nutrients increase greatly and become easily assimilated by the body.
- **Highly Digestible:** Sprouting reduces the enzyme inhibitor that keeps the seed or grain dormant until it is ready to grow. Reducing the inhibitor activates the enzymes, resulting in pre-digested, easy to absorb nutrition.

The Many Benefits of Sprouting (con't):

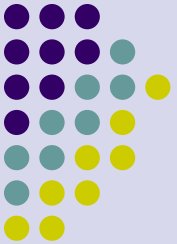


- **Quality Protein:** Germination converts seed nutrients to pre-digested amino acids and simple sugar. Unlike cooked proteins, the amino acids of raw sprouts don't coagulate, making them easier for the body to absorb.
- **Fresh:** Sprouts can be prepared year-round and are full of life force energy.
- **Varied:** There are many varieties of seeds, beans and grain that can be sprouted for different flavor, texture and nutrition.
- **Inexpensive:** It costs pennies to produce pounds of organic greens.

Micro-Greens and Sprouting Supplies

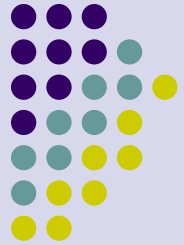
- **Organic Whole Grains and Seeds:** Whole Grains and seeds means the hull of the seed remains intact. Store seeds in an airtight container in a cool, dry place. Ideal temperature should be between 50 F (10 C) and 80 F (27 C). Do not refrigerate sprout seeds, as moister may cause the seeds to sprout or form mold. Available form: Local Organic Growers; SunOrganicFarm.com; Sprouthouse.com.
- **Hydrogen Peroxide (3% Food Grade):** Hydrogen peroxide is use to scrupulously clean the seeds. It will not harm worms. Food grade Hydrogen peroxide is available at www.drcousensonlinestore.com.

Micro-Greens and Sprouting Supplies (con't):



- **Hydrogen Peroxide Dilution Formula:** Most food grades Hydrogen peroxide sold is 35% strength. To dilute to 3%, add 1 ½ cups of 35% food grade Hydrogen Peroxide to a gallon of water.
- **Effective Microorganisms (EM-1):** We use EM-1 as a probiotic to promote beneficial microbial communities to help provide competitive exclusion of harmful microbes and decrease the pH of the soaking solution. Also, Em-1 provides beneficial enzymes and organic acids that improve soil for growing. It is available at www.drcousesonlinestore.com
- **Ocean Grown Minerals:** Driven from the ocean, these minerals provide over 90 naturally occurring micro-mineral nutrients. Ocean Solution is available from www.drcousensonlinestore.com.

Supplies for Growing Sprouts:



- **Glass Jars:** Wide mouth jars in one quart to one gallon sizes will work for most sprouts. Sprout bags, trays, containers and self-watering sprout systems are available at www.sprouthouse.com
- **Mesh Nylon Window Screen:** We use nylon window screen to cover the jar opening when soaking, rinsing and draining seeds and sprouts.
- **Rubber Bands:** Rubber bands hold the mesh screen in place over the jar opening. Alternatively, if you buy jars with lids that have a separate top and ring closer, the ring can be used to secure the screen to the jar opening. Sprout-Ease Sprout Jar Toppers are another great option.

Supplies for Growing Micro-Greens

- **Nursery Trays:** We use standard nursery 1020 trays with drain holes for large-seeded sprouts, such as wheat, sunflower and peas. Drainage is important to keep the soil from developing mold.
- **Soil:** Organic potting soil that is OMARI Listed is available from fine garden stores or from on-line suppliers, or you may make it yourself. If you wish to make your own soil, a full discussion of composting and mixing your own soil is given on the TOL sprouting site.

Supplies for Growing Micro-Greens

- **Miro Mats:** Hydroponic growing pads. Made from biodegradable wood fibers, these highly absorbent pads provide an excellent medium to grow wheatgrass or micro-greens without soil. They are NOP Compliant for organic sprouting.

Micro-Green and Sprouting Chart:

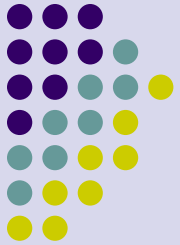
SEED	METHOD	AMOUNT QT. JAR	SOAK HOURS	DAYS	INCHES
Broccoli	Jar/Tray/Sprouter	2 Tbsp	8-12	4-6	1 - 1.5
Buckwheat	Tray	3/4 Cup	8-12	8-12	4.5 - 6
Chinese Cabage	Jar/Tray/Sprouter	2 Tbsp	8-12	3-5	1 - 1.5
Fenugreek	Jar/Tray/Sprouter	1/4 Cup	8-12	8-14	.25-.5 (1-2 MG)*
Green Pea	Jar/Tray/Sprouter	1 Cup	8-12	4-13	.25-.5 (2-4 MG)*
Radish	Jar/Tray/Sprouter	2 Tbsp - (1/4 Cup MG)*	8-12	8-12	1-2 (3 MG)*
Mung Beans	Jar/Sprouter	1 Cup	8-12	4-6	1 - 3
Red Clover	Jar/Tray	2 Tbsp	8-12	4-6	1.5 - 2
Red Winter Wheat	Jar/Tray/Sprouter	1 Cup	8-12	2-12	.25 - .5 (3-6 Grass)
Sunflower	Tray	2 cups	8-12	7-12	3 - 5
Garbanzo	Jar	Optional	8-12	2-4	.5 - 1
Buckwheat Groats	Jar	Optional	8-12	1-3	.25 or Less
Whole Oat	Jar	Optional	8-12	3-4	.25 or Less
Quinoa	Jar	Optional	8-12	2-3	.25 or Less

*MG: Micro-Greens
Optional: I left the amounts "optional" because your specific needs may vary. When choosing jar size make sure that your seeds and grains can "breathe" when the jar is at a 45° angle.
If sprouts begin to fill the jar as they grow, split them into 2 jars to allow more room to "breathe" and grow.

Grow Micro-Greens

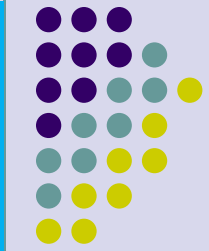
- After soaking for 8 to 12 hours, drain the water and lay the jar upside down on a rack at about a 45° angle, out of direct sunlight.
- Fill perforated nursery tray with about ½ to 1 inch of soil mix. Saturate the soil with water until it is draining from the bottom perforations.
- Spread the soaked seeds evenly over the top of the soil. Utilize the sprouting chart for the amounts of seeds. Gently water with diluted EM-1 or water until soil is saturated again.

Grow Micro-Greens



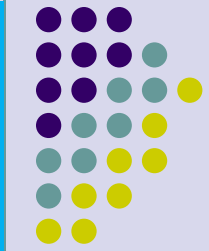
- Cover the tray with a second tray to provide darkness and retain moisture. Place trays on a shelf in a room held at about 70°F (21 °C) to incubate. For Sunnies, weigh down the tray cover with a rock or brick; this aides in roof development. Incubate Sunnies for 3 days and 2 days for all other micro-greens and Wheatgrass.
- After 2-3 Days of incubation, remove cover and move to a sunny location where they can develop chlorophyll and turn green. If sunlight is unavailable, use full spectrum growing lamp. Water carefully, not too wet or too dry.

Harvest Micro - Greens



- Wheatgrass is ready to harvest when about 5” to 6” high. Leave in tray near Wheatgrass juicer; cut close to the soil only as needed for juicing.
- Sunflower Micro-greens (Sunnies) are ready to harvest when they are about 3” to 4” tall and have two open cotyledon leaves and a small “button” in the center. The greens get a little bitter if left too long. Sunnies will have hulls still attached to the leaves, which need to be brushed off while harvesting.
- Buckwheat Greens are ready when about 3” to 4” tall and most of the hulls have fallen off naturally.

Harvest Micro - Greens



- Pea Shoots are ready to harvest at 4” to 5” above the soil and do not produce a hull. Quick and easy!
- Fenugreek and Radish Micro-Greens are ready at 2”.
- Cut all micro-greens close to the soil with scissors or sharp knife. Brush off any remaining hulls. Wash in a large bowl of water treated with 3% food grade Hydrogen Peroxide at a ratio of 1Tbs per 1 gallon of water. Place sprouts in a colander to drain and dry, or getter, spin in a salad spinner.

Harvest Micro - Greens

- When sprouts are as dry as possible, store in a sealed container and refrigerate. Plastic food containers with lids or Ziploc bags work well. Sprouts and micro-greens should last about 1 week if properly cleaned, dried and refrigerated.

For More Information:

- Please visit our websites
- Tree of Life Center www.treeoflifecenterus.com
- Tree of Life Foundation www.treeoflifefoundation.org
- Dr. Cousens' School for Holistic Wellness www.cousensschoolofholisticwellness.org
- Or e-mail us at: info@treeoflife.nu
- www.ppep.org – Dr. Arnold's email: jarnold@ppep.org