**NOTES: EDIBLE GARDENING GROUP – NOVEMBER 19, 2011 WORKSHOP**

**COMPOSTING AND COVER CROP**

***Worm Bins – Matt Abbruscato***

***Contact info:*** Foothill Worm Ranch, matt@foothillwormranch.com (925) 484 4192

The worms are special red worms which eat lots of organic matter and double their populations in 3-4 months. They eat anything from the ground, including an old cotton T shirt! They reproduce to fill their living space and then start to die off.

You can create your own worm bin with 2 large (15 gal.?) plastic bins. Drill holes in the bottom of one of the bins and nest this bin on top of the other bin without holes. This size of small bin requires about 1 pound of worms. (Available from Matt. For $25)

**Feeding the Worms**

Add 4-5 inches of torn up newspaper and let this rot first.

Then add: food waste, they can consume ½ pound a day. No potato peels or avocados. Citrus is ok if you let it rot and mold first. Can also add leaves but nothing from a black walnut or any aromatic tree such as eucalyptus or conifers. Eggshells are good.

The worm bin should consist of 20 parts carbon (newspaper) to 1 part kitchen waste.

If you are feeding them too much, you will get fruit flies and mold.

**Harvesting the castings**

When the bin is ¾ full, it is time to harvest.

Place a window screen on top of the bin and feed on top of the screen. Make some larger holes in the screen so the worms can get through to the food on the screen.

Commercially available bins like the Wiggly Can, come with trays that you can add for harvesting.

You can drain the liquid from the worm castings and this is also a fertilizer called worm tea. It is a strong fertilizer so dilute it by 50% with water. The castings can be spread on the soil.

**Caring for the Bin**

In the summer, keep a spray bottle handy and moisten the newspaper. You should just get a couple of drops of water out of the newspaper when squeezed. Worms do not like temperatures above 85 degrees so keep them in a cool spot.

Do not use water sourced from a water softener. The sodium kills the worms.

If worms not doing well, the bin may be too acidic (often with tiny white worms). Often times, it is better to just start over with a fresh bin but you can tray adding dolomitic (sp?) lime or oyster shell lime in small quantities.

***Home Composting – Diane Dhovoluk***

You can do passive or cold composting where the pile does not heat up significantly. The issue with this is that weed seeds are not killed but everything does break down eventually.

The other method is an active or hot method of composting.

**To make compost you need:**

Browns (dry, crumbly, organic material)

Greens

Water

Air

Browns can consist of leaves, straw, rice hulls and small amounts of paper (best if pre-shredded). No shiny wax paper. Dried out grass is a brown. Sawdust is very high in carbon so just use a small amount.

Greens can be food waste (coffee grounds are considered greens). No meat, fish, dairy products or grains as these will attract rodents.

Make 4-6 inch layers of equal volume of browns and greens. Add water to the consistency of a wrung out sponge. Air is incorporated as you mix and turn the compost.

Top off with dry browns and cardboard if it is an open pile. Cover the pile when rain is expected or the pile will be too wet.

Pile needs to reach 140 – 165 degrees to kill diseases and weed seeds. You can buy thermometers to tell you how hot your pile is getting.

If the browns and greens are shredded, the pile will heat up much faster or more reliably. Small shredders do not seem to work that well. I use the immersion blender method – a weed whacker in a large container. Wear goggles and keep your mouth shut!

You can add alfalfa, bloodmeal or kelp meal which will heat up the pile because of its high nitrogen content.

Diane swears by adding biodynamic formula from the Josephine Porter Institute. www.jpibiodynamics.org

Recommended reading: Rodale Book of Composting

 Let It Rot

***C ompost Tea – Jim O’Laughlin***

A teaspoon of compost contains billions of microbes, bacteria, protozoa, nematodes and fungal hyphae. Hard to believe but true.

We take organic material and make it into good compost. This is a precious resource and we can enrich the soil with this diverse microbiology by making compost tea. Compost tea is compost seeped in water. You run water and air through the mixture to grow the microbiological life and feed it with oxygen. The mixture also needs warmth.

**To make compost tea you need:**

A 20 gal. plastic garbage can, filled with water (chlorine free)

A painter’s net bag or stocking filled with compost and suspended on a stick over the can.

An aquarium pump with tubes and air stones. Jim’s had 5 air stones and he had 2 in the bag of compost and 3 into the water.

Add biodynamic innoculant (available from the Josephine Porter Institute)

Or unsulphured molasses (bacteria likes sugar)

Jim leaves the mixture from 12 hours up to 2-3 days in his greenhouse.

It will have bubbles on the surface (indicating that it is living and active). Once the bubbles slow down, the process declines quickly. After 6 hours, 50% of the life is gone so use it promptly.

You can use the end product as a foliar spray having strained the mixture through a bag or in a watering can and saturate the soil with it (a drench). You need 5 gallons for 1 acre of foliar spray and 20 gallons for a drench for 1 acre.

Jim recommends the following books – Teeming with Microbes (available at the Livermore Library) and The Secret Life of Compost by Malcolm Beck.

Jim also recommends the website [www.acresusa.com](http://www.acresusa.com) with lots of info. on soil and composting.

***Cover Crops – Diane Dhovoluk***

Cover crops keep the soil covered to protect it from the elements and reduce weed growth. They also feed the soil and improve crop yield. They prevent soil and nutrient loss.

Green manure is a cover crop that is turned back into the soil.

Catch crop is a cover crop that is left to flower to bring in beneficial.

The roots of cover crops stimulate the microbiology of the soil and break up the soil. Legumes add nitrogen to the soil if you cut of the plant’s top growth and let the roots decompose.

**Examples of cover crops** (also see handout to follow):

Fenugreek – a legume available at the health food store, plant in spring

Vetch – cut down and let lay on the ground to prevent weeds

White Mustard – good for nematodes

Fava Beans – cool season

Buckwheat – warm season, easy to knock down

Alfalfa – roots hard to get out of the ground

You can use cover crops as an under sowing to some vegetables. Eg. Fenugreek under cabbage or cauliflower.

Handout from Johnny’s on cover crop planting chart. Peaceful Valley Farm supply also has good info. (www.groworganic.com)