

A group of Master Gardeners and I (Pamela) took a tour of the Palo Alto Compost Center; here's a summary of what we found out:

Where it all starts: Green waste can be brought in by anyone - Palo Alto residents or not - commercial or residential customers and by Palo Alto City workers (they charge for commercial and residential green waste dumping though). The only green waste they do not accept is fruit and kitchen waste, as it attracts various vectors, such as flies, skunks and raccoons..

Step One: All the green waste is put through a *huge* grinder, where it is sent through screens of several sizes, and eventually broken down into pieces of 2" or less. Water is added to the waste at this point as well, as the keys to great, fast compost (according to our tour guide) is *the right moisture and aeration*. The small, moist chips are then bulldozed into "windrows" (it's an old English word, meaning the row of cut grass, wheat, or whatever that is left in the field after cutting or as arranged by the wind) that are 100+ feet in length, 7-9' tall, and 8-10' wide.

Step Two: The wind rows are turned twice a week by a huge machine called a "scarab", which essentially straddles the rows and turns the soon-to-be-compost. They also add water at this point, spraying the rows down with 7000 gallons for each turning of a single row - yikes! The water that is used (thankfully) is "reclaimed" water that meets all health safety regulations.

The rows do contain lots of woodchips at first, but this is an advantage, as the chips produce air pockets that help in the heating process. The rows heat up to between 120-150 degrees; temps are measured regularly with 2' temperature probes. Such high temps kill weed seeds and any diseases that might be in the green waste. Any temps less than 120 are not ideal, as the pile will cook a lot slower (they try to get finished compost in 40 days - mostly due to space constrictions). They've had it happen that the temps have gotten so high (over 180 degrees) that a row has caught on fire - no flames, but lots of smoke. Compost fires are really hard to put out - they have to take the top from the pile to let the heat out, then dig and dig and pour water into the pile, or it will eventually just all become ashes. Amazing, eh?

Step Three: After about 40 days, the compost is "finished" and put through a "power screen trommel" machine that screens out any remaining large pieces of un-composted green waste. This un-composted stuff ("overs") is used to cover trash brought into the landfill - if they send it through the chipper again, it tends to just pass through the screening process. The fine stuff that passes through the screen is what is now offered to the public as city compost.

They must have the compost tested for heavy metals, salmonella and fecal coliform (the compost they offer must be certified free of these). The heat of the compost kills at least 90% of any plant diseases and all of the weed seeds. They have had the compost tested for pesticides and herbicides and the results are that such substances are consistently "not-detected". It is interesting to note that because the Palo Alto City Compost Center is

part of the public sector, their compost is more regulated than the composts produced by the commercial sector (ie. the large garden centers that sell compost in bulk).

City compost is sold to the public and to commercial vendors. Places like Ciradella's and Los Altos Garden Supply purchase it and mix it with other materials to make various amendment mixtures. City compost is also given away for free on certain days to Palo Alto residents. Our tour guide recommended that the compost be mixed into your soil at a 1:3 compost to soil ratio. It is also great to use as mulch in vegetable and ornamental gardens.

Finally, a new program they've started at the Center is what they call the "Organics Yard" - a place where anyone can purchase the following - by the bag (about \$2) or by the cubic yard (\$15-30):

- Sandy Loam- sandy soil to be mixed with heavy clay soil to break it up
- Deco Mulch - wood chips (made of recycled, chipped lumber) that has been dyed to be a redish-brown color
- Wood Fines - smaller, naturally colored wood chips
- Top Soil Blend - a mix of 60% compost, 40% sandy loam
- Soil Conditioner - the top soil blend plus added wood fines
- Potting Mix - the top soil blend plus wood fines plus lava rock
- Basic City Compost (somewhat cheaper - \$8-10 a cubic yard)

Whew - I think that's it. We were overall impressed with the Center's composting program, and I (Pamela) will continue to use the compost and recommend it to others to use as a mulch and as one of the amendments they can use in their gardens (though I would also recommend adding mushroom compost, homemade compost and/or rock dust for additional nutrients in vegetable gardens.)

Hope this has been helpful :).

Additional notes from Bart Anderson, one of the Master Gardeners on the tour:

I was surprised by the scale of the operation: the grinder can process 35 tons of green waste per hour (75 cubic yards per shift). Last month they sold about one million tons of finished compost (800-1000 cubic yards). It's not white-coated technicians monitoring dials and nutrient levels -- but heavy equipment operators moving mountains of organic material. As John Connelly said, "We're the nuts-and-bolts guys."

One problem with city composting is that it is difficult to monitor the green waste brought into the operation. Connelly says that they try to keep bad stuff out, but they can't be sure of what people bring in. Fortunately, the composting process takes place at high temperatures so as to inactivate most everything nasty. As Pamela pointed out, the test results for the compost were all favorable.

The motivation for Palo Alto to produce its own compost is not to make money, but to

divert a part of its waste stream, as per California mandate. Connelly says that through composting and other recycling programs, Palo Alto has been able to divert up to 54% of its waste.

We can support this recycling by buying and using their compost.

I've used dozens of bags of PA compost, mixing them with our adobe clay soils when starting beds. I've also used it as a mulch on a big patch of raspberries.

At \$8 to 10 a cubic yard, it's dirt cheap (free for PA residents on give-away days).

If you go...

1. Wear old clothes. The Palo Alto Landfill is often windy and the compost particles are very fine. I've seen people wearing filter masks over their faces.
2. Bring a container that is small enough for you to manage. I've used the plastic bags in which fertilizer, compost, etc. are sold (you can often find them in the dumpsters at community gardens). You only have to shovel the bags full once, then you can carry them around to where you want to apply the compost. You can fill the bags half-full, so they are easier to lift.
3. For real speed, use a rubber dustpan rather than a shovel to fill the bags. It's dirtier and you have to squat or kneel, but it's faster and easier on the back.

Links:

The Palo Alto Organics Yard:

<http://www.city.palo-alto.ca.us/recycle/theorganicsyard.html>

Palo Alto Compost Giveaway Days and Free Mulch

<http://www.city.palo-alto.ca.us/recycle/giveaway.html>

Sources of finished compost in Santa Clara county:

<http://reducewaste.org/content/0,4745,chid%253D15957%2526ccid%253D45329,00.htm>

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