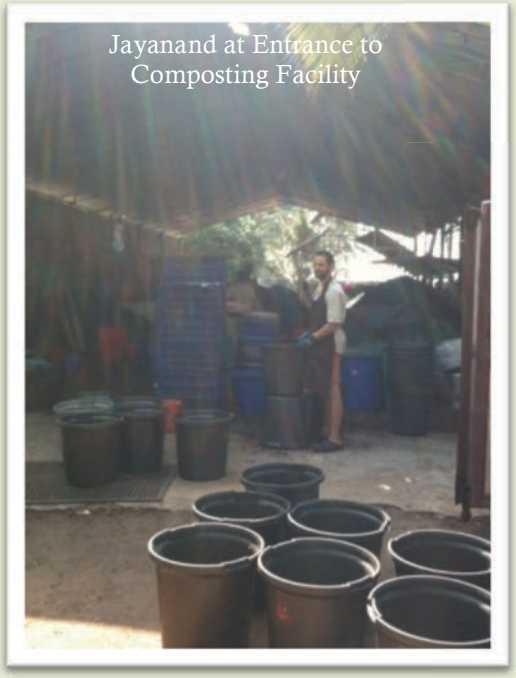
Composting at Amritapuri

by Jayanand


Jayanand at Entrance to Composting Facility

My seva assignment for the past three weeks here at Amritapuri has been to work in the composting facility, where food scraps and garden waste are processed and transformed into lovely compost. The compost is used primarily within the ashram itself to provide natural fertilizer and ground cover for the ashram's tulasi and vegetable gardens, and for various flower gardens and landscaped areas within and immediately around the grounds.

It's amazing and inspiring to be a part of this seva team – a group of up to two dozen people of all nationalities who work in 2 ½-4 hour shifts to help sort and process between 500 and 1000 kg (up to 2200 pounds) of food waste and kitchen scraps a day. Big days like festivals, holidays and weekend public darshan days draw the largest crowds – and make for the most food waste to process. But I'm happy to say that this committed team and wonderful facility are able to keep up with the daily flow.

When I first visited Amritapuri in 2005, none of this was in place. There had been a few attempts to start composting over the years, including one I participated in that year. But until 2008, when an organic farmer and compost consultant named Peter Ashe visited Amritapuri and met Amma for the first time, it never was sustainably managed. I distinctly remember in 2005 the heartbreak I felt to learn that most of the food waste – including unsorted plastics and other trash – was being thrown right into the backwaters adjacent to the ashram grounds.

On my next visit in 2009 and 2011 I was amazed and inspired to see that sorting stations had been set up around the grounds for food waste, recyclables and other waste items. Each station has nicely painted frames to contain the color-coded bins, with large, clear signs in English and Malayalam to help people know how to sort their garbage. By 2011 the current beach-side recycling and composting facilities were established to really provide a pleasant, clean environment to manage the volume. In this short time I've seen a lot more awareness on the part of both international visitors as well as the locals in how to sort and use the bins. Although the pre-sorting is in no way perfect, the collection bins seem much cleaner now than even when I last visited in summer 2011. Another sign of increasing awareness is that just about every day visitors of all nationalities will stop by the composting and recycling centers to see firsthand where and how this campaign is being carried out. My belief is that over time as people see their friends and other sevites collecting and sorting out the various wastes, they bring more awareness to how much waste they generate and what ultimately will happen to it.

Now to describe the composting process:


Food waste


Kitchen Waste


Removing non food items

First, the bins of food waste from collection stations and the kitchen are dumped on to a metal sorting table, where 6-8 sevites (donning gloves and aprons) carefully pick out tiny bits of plastic, rocks, paper, tea bags , and coarse materials like sticks and banana leaves (which are still used on special occasions like weddings as serving 'plates'). The coarse material will ultimately be shredded by a machine, then dried in the sun, before being added to the compost to help aerate and add bulk to the compost. The rocks go to the beach, and other hard items – combs, plastic bottles, juice boxes, etc. – will be washed and reused, recycled, or otherwise disposed of off-site. Other material – dry coconut shells and pieces of wood, bits of wet paper or soft plastic – are separated for incineration so as not to interfere with the composting process or contaminate the compost.

Once the foods scraps have been sorted, fresh cow dung from the ashram cows is added and mixed in to add bacterial culture and nitrogen to the compost. This makes for a hot compost! In fact, many days you can look at the "cooking" heaps and see steam rising, which says a lot in the tropics.

Shredder

Next, shredded coarse material (garden waste, sticks, leaves, etc.) is added, following by filtered, unfinished compost. These two items help to add bulk, but also help to stabilize the carbon-nitrogen ratio – as plant material they already have the nearly ideal blend for plant growth.

Finally, for particularly "wet" table-loads, dry sawdust and woodchips from the carpentry shop are added to help dry out and balance the mix (by adding carbon).All of this is mixed onto the end of the active heap.

Mixing food waste with cow dung and shredded garden material

Once all of the food waste has been sorted and processed, it's time for cleanup – by scrubbing the table with fresh wood chips and sawdust, by adding ash and wood chips to the pile to reduce flies and odors, and by covering the pile with a tarp.

Next comes cleaning out the bins (buckets) that will be returned to the dozen or so collection stations around the ashram and housing units. The bins are scrubbed not with water and soap, but with "overs" – intermediate compost that has been filtered and dried. Washing in this way saves water and helps to absorb the oils and food residue sticking to the sides of the bin.

Piles covered with tarps

Garden waste

In a nearby station, garden waste is processed in a similar –albeit less slimy way. Each morning garden waste is carefully swept up by individuals stooping and sweeping, leaving a fresh pattern of sweep marks in the dirt and sand all across the ashram grounds. But of course, whatever was on the ground at the time is included in what gets swept up and needs to be sorted. This happens at a table with a metal grate as its platform to allow dust, sand and small pebbles to fall through. As with the food waste, the remaining material is painstakingly sorted to remove plastic, rocks, paper scraps, garlands, banana stalks, and bits of rope from fishing nets that local fishermen sometimes cut while ashore on adjacent lands. The remaining material gets shredded, dried and added to the compost mix as described already.

After about three weeks, the compost heap – often about 6 feet tall and 8 feet across – is turned by hand by a gritty person and a pitchfork. Another three weeks later, the resulting finished compost is ready to be filtered in a rotating screen tumbler. There are three basic outputs: 1) First quality – a fine, rich, beautiful compost that is light like coffee grounds; 2) Second quality – which is more coarse but also rich, light and flaky; and 3) "overs" – the unfinished, bulkier material that will take longer to fully compost, which is used as described previously to scrub bins, to line the floor of the composting facility, and otherwise cycled back in with fresh food scraps to start the whole process again!

All in all this has been a wonderful experience for me – an opportunity to participate in a sustainable management practice and to draw from the inspiration and enthusiasm of my fellow sevites. I'm also amazed to learn that AIMS, the charitable hospital run by Amma's organization in Cochin, processes about five times as much volume, and has a custom-engineered compost turner to speed up the process. There are other initiatives – most recently one now in the works to create a learning village at the local university to serve as a model for similar sustainability projects across India and other places in the world, while developing best practices and information packages for water treatment, recycling, incineration, biogas, and composting. These are to help rural communities across the world to develop and implement sustainable projects that help to protect the local environments while improving local quality of life.

Compost pile

Filter

Keerti in compost facility garden

Worm Composting at Amritapuri

by Karuna

Amritapuri ashram also has a successful earthworm composting project. Earthworm compost is said to be the most potent and nutritious compost there is! Earthworms "produce a range of powerful plant growth hormones that super-charge the growth of plant roots, thus helping plants to flourish and be very resistant to disease and pests." http://www.amritapuri.org/activity/nature/compost/.

The worm compost center is located on the beach, near the food composting and recycling centers. It is lovingly tended by a devotee named Advait. In the previous article about food composting, Jayanand mentioned that the food composting process includes filtering the food compost after it has gone through decompostion. Some of that sifted food compost is used for building the worm composting beds.

There are quite a few worm beds placed around the perimeter of the room in the worm compost center. They are arranged from the newest bed to the oldest, in a countercockwise manner. Each day, the worm beds are moistened with a mixture of water and cow dung. If I remember right, Advait calls this mixture their "smoothie". He said this is their favorite food and they come up close to the surface to eagerly indulge themselves in their treat!

It takes about three months for the worms to create the worm compost. When it is ready, the compost is quite light, almost fluffy.

At that point, the volunteers fill a bucket with worms and compost from the oldest bed and set up a harvesting station outside. They then separate the worms from the worm compost by hand. The compost is sent to be used in gardens and the worms are placed into the newest of the worm beds, and the process starts all over.

I found I was able to harvest 2-4 pints of worms from every bucket of the compost. Here is a handful from just a few minutes of harvesting.

I loved my morning time sitting facing the waters of the Arabian Sea, separating the worms from the compost. Sometimes the area was quiet except for the waves crashing against the rocks. On those days the people who were present on the beach were usually meditating. One day a brahmacari was teaching an Indian man to play the gypsy (instrument similar to a tamborine). So nice. Another time a man was playing a classical guitar; such gentle, beautiful sounds to work by. We were only a few minutes from the bustle of the huge crowds receiving Amma's darshan at the ashram, but it felt like a different world.

For much more detail about worm composting at Amritapuri go to www.amrita-earthworms.info.