

Making Compost at the UA Dairy Saves Money and Recycles Waste

By Susan McGinley

Lots of backyard gardeners have tried composting—tossing clippings and leafy kitchen waste into piles that are turned and fed periodically until a crumbly mulch results. It helps the plants grow, saves money on fertilizer and recycles waste that otherwise would have gone into the trash or down the drain.

On a larger scale, that's what is happening at the University of Arizona's dairy at the Campus Agricultural Center in Tucson.

Four years ago, after paying to haul 1500 cubic yards of manure yearly from the dairy, manager Dan Foster switched to composting. Since then, the rich mix of manure and clippings from the College of Agriculture and Life Science farm on north Campbell Avenue has served as a soil amendment for landscaping needs both on and off campus.

"We have a dairy with 300 cows," says Tracy Everingham, who succeeded Foster as farm manager. "It used to take one of our full-time employees nearly half his time to load the manure and haul it away. Some of it went to a farm in Marana or to other places with active farming and gardening. When they had all they could use, the rest went to the landfill."

Disposal costs amounting to \$1000 a month included the employee's wages, the truck and dumping fees. Although they are still refining their techniques after four years, the dairy is producing such rich compost already that others now are willing to pay the cost to haul it away. It's the mix of materials that makes the difference.

Farm supervisor Ken Kriederman says the farm's sources for compost ingredients include a lot more than the manure from the brown Swiss and Holstein cows.



S. McGinley

As a part of the composting process, this tractor attachment turns, waters and aerates the manure pile.

"We add horse manure from the equine center, sheep manure from the farm, the sawdust used as bedding material for livestock, grass clippings from the turf center and our own landscape trimmings," he says.

The compost also includes green waste generated in the greenhouses of the Controlled Environment Agriculture Center, and chipped waste from campus fields and grounds. The farm crew takes anything that can be recycled—alfalfa cuttings from variety trials, even palm fronds.

The farm crew begins each batch of compost by adding manure from the livestock pens to rows of green waste that have been deposited on the open ground behind the dairy. Each row is about 250 feet long, seven feet wide and four feet high.

"Twice weekly we turn, aerate and water the pile, and monitor the temperature and moisture," Everingham says. Temperature is critical.

"We want to get it up to over 140 degrees for as long as we can keep it there to eliminate pathogens and weed seeds," Kriederman says. The compost generates its own heat as the various beneficial microorganisms in the manure and clippings interact. UA faculty and students have sent samples of the compost for laboratory analysis to make sure the heat of the pile has "cooked" any pathogens out of it.

It takes about four months to "cook a row," or turn each raw pile into finished compost, depending on the mix of ingredients used, according to Kriederman. The Campus Agricultural Center generates more than 2400 cubic yards of compost per year for use on ornamentals, trees and vegetables. Much of it is applied on campus, where it serves as a mulch around trees. There are plans to include developing a compost for fertilizing the pastures, but right now the farm lacks the equipment needed to haul and spread it.

The farm also provides compost to various community organizations. "We donate a lot to gardens at the Tucson Community Food Bank, the Arizona School for the Deaf and Blind, several elementary schools, and the Tucson Food Coop," Everingham says. Some of the compost has also been donated to the Native Seeds/SEARCH farm in Patagonia, and the Department of Corrections (DOC).

"We were very happy when the UA said they'd donate compost," says Michelle Phillips, executive director of Stepping Stones, a DOC graffiti abatement project that focuses on nature and gardening to interest youth in caring for their community.

Through the compost program, the campus farm is doing far more than saving the money it used to spend to truck the compost away, Everingham says. "We're recycling materials from all over the farm and generating a product that is useful so it doesn't have to end up in a landfill." ☒

For more information contact Tracy Everingham (520) 621-3246, tracye@ag.arizona.edu or Ken Kriederman (520) 621-3246, kkrieder@ag.arizona.edu.