Garden Club Newsletter

April 2023

THIS ISSUE

Articles: The Arizona Worm Farm; Results of "Slogan" Vote; Watering Information

Field Trip to The Arizona Worm Farm in March

Photos by MaryRose Gangle

The Arizona Worm Farm sign.

Office, store, and gathering place for the start of our tour.

Some friendly, happy worms!

Self-guided tours available at specific times.

Amazing garden plants.

Arizona Worm Farm | 8430 South 19th Avenue, Phoenix AZ

https://arizonawormfarm.com | (602) 622-7663

The Arizona Worm Farm

By Dave Rosenthal

Worms you say? How interesting can worms be? Frank Herbert's Dune series of books are international best-selling novels so presumably worms can be very interesting. But what about in the real world?
Last month, a group of about 25 people from the Garden Club of PC took a field trip to The Arizona Worm Farm in Phoenix to find out for themselves just how interesting worms can be.

On the desert world of Arrakis, better known to the science fiction community as "Dune," the native people cultivate the valuable "spice" that allows spaceship pilots to navigate vast interstellar expanses. Spice is, therefore, the most valuable commodity known to mankind. Where does this spice come from? Well, giant worms eat the sandy soil of Dune and, as it passes through their digestive tract, spice is formed and excreted. For earth gardeners, worm detritus or "castings," is as beneficial to growing plants as spice is to space travel, and The Arizona Worm Farm is a whole lot closer to us than Arrakis!

The Arizona Worm Farm is a 10-acre urban farm located in Phoenix that is on a mission to turn garbage into food. They don't use magic wands to accomplish this, instead they use insects. Their goal of sustainability enlists the power of red wiggler worms, black soldier flies, and hot compost piles to turn valley waste into natural gardening products, vegetable starts, and produce. This is accomplished using the following process:

Waste-to-Nutrient Circular Process

1. **Waste**: They get food and landscape waste from local partners.
2. **Breed & Grow Insects**: They feed that food and landscape waste to worms and larvae that turn it into high protein feed and fertilizer.
3. **Create Food**: They feed the insects and their by-products to their hens and gardens to produce sustainable food and growing products.
4. **Sell or Donate Food and Products**: Gardeners and farmers purchase the products closing the loop in food production; any excess is donated to local food banks.

Red wiggler life cycle process begins begins in mulch, food waste, and bits of cardboard and paper.

Handful of red wigglers.

This waste-to-nutrient circular process helps combat climate change, diverts waste from landfills, and uses regenerative soil efforts to put carbon back in the ground where it belongs. Who knew?!

As it turns out, the red wiggler worm is the world's most common composting worm. Red wigglers generally will not be found in soil. Rather, they thrive in and under leaf litter, manure, decomposing vegetation, and other organic matter.

The anatomy of a red wiggler resembles that of other common earthworms; a long-segmented body begins at the pointed head and terminates at a slightly-flattened tail. A fleshy band called a *clitellum* features prominently on the body of the red wiggler at roughly 1/3rd of the length of the worm. This is, essentially, the worm's sex organ, so despite the myth, cutting a red wiggler in half only does not create two worms but it does create two halves of a dead worm.

The digestive tract starts at the mouth where the worm begins to consume its food before passing it on to the pharynx. The pharynx then pumps the food out into the esophagus.

The esophagus is narrow and thin-walled and acts as the "waiting room" for the gizzard. The gizzard is the area where the food gets crushed and ground down before moving on to the stomach.

The stomach is where the first chemical breakdown of food happens with the help of a protein-busting enzyme. The intestine forms the longest part of the worm and is where the majority of digestion takes place via enzymatic processes.

The digested food, called "castings," eventually passes through the end of the worm as capsules coated with a biologically-rich mucus. (I do hope that you're not eating right now!)

Red wigglers, like all earthworms, are hermaphroditic, simultaneously possessing both male and female sex organs, both of which are used in the reproduction process.

Two worms of the same species will mate and eventually produce a cocoon. This cocoon will normally yield 3 worms and each pair of worms will produce 1-3 cocoons per week. The lemon-shaped cocoon will hatch in about 21 days. Within 42 days, the baby worms will reach sexual maturity. A mature red wiggler can be expected to live between one to three years.

The mighty red wiggler may be used as a bait worm for smaller fish or as a protein source for chickens and reptiles, but its main use is for – of course – vermicomposting; and, as mentioned above, they are the most common composting worm in the world. But why?

Red wigglers are a resilient composting worm, tolerant of a wider range of temperature than other species. The red wiggler can reproduce and process organic waste very well at temperatures between 55°F-90°F. They will survive – although maybe not thrive – temperatures well below 50°F.

Its cocoons are famously hardy as well, able to withstand prolonged freezing temperatures, staying viable in a suspended state until they are able to hatch in warmer weather.

Red wigglers growing environment.

Worm compost with worm cocoons.

A single cocoon.

Some folks refer to the red wiggler as the Ford Taurus of vermicomposting worms; you won't brag to your hardcore composting buddies that you own them, but they will serve you well. They are simply the most appropriate worm for the widest range of circumstances.

To wrap this article up all tidy and neat, adding red wiggler worms to your soil and using their castings as soil additives will help your plants to generate out-of-this-world produce and flowers, allow you to safely navigate the puzzles of soil amendment, and reduce the need for man-made fertilizers that often have a harmful effect on the ecosystem. The trip to The Arizona Worm Farm was certainly a worth-while venture as the folks there sell worms, castings, and soil amendments to the public.

Additional photos are posted on the Garden Club of PebbleCreek website.

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Results of the "Slogan" Vote

By Ruthette Kennedy

First, thank you to everyone who attended and brought a potluck item to our April End-of-Season gathering/meeting. We enjoyed delicious food and had a great time talking about the activities we participated in this year.

Our president, Cindi, reminded us hotter weather means more water for our plants. Key take away: Water deep for a longer period of time. *(See article below for detailed irrigation information*).
Cindi also mentioned, next seasons events and project plans will take place during the summer.
If you have a topic of interest, please send it to Cindi Sokoloff, cindisokoloff@gmail.com.

Garden Club Member Plant Sale SLOGAN - the VOTES are in and the winner is: "Beyond the Garden Gate." This phrase will be used to advertise all our plant/other sales, classes, tours, and/or garden discussions where we invite PebbleCreek residents to attend. Most of the time these events will be held at individual member's home patios/backyards. For instance, we are planning a "Vinca Plant Sale" at Lumi's home in early Summer – date TBD. **Check our website pcgardenclub.org for more details coming soon along with a note to those who may want to help with the sale.**

If you have an idea for a plant sale and/or other activity that you would like to host at your home for PC residents only to attend, let these committees know: Events and Projects Committee and Fundraising Committee. Brenda and David Deckard are planning to host a plant sale next March to allow PC residents to tour their yard while it is in full bloom with California Poppies. Great Idea!

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Watering Information

By Ruthette Kennedy

If you are interested in learning more about watering plants for our upcoming hotter months, refer to your ***Landscape Watering by Numbers*** booklet or check out this link to a PDF version: https://wateruseitwisely.com/wp-content/uploads/2013/07/Landscape-Watering-Guide.pdf

Other good watering guidelines can be found at the following sites: https://www.amwua.org/landscape- and-garden/landscape-watering-for-the-arizona-desert

Irrigating Citrus Trees: https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1151-2021.pdf

Remember, trees need **infrequent, but deep watering** to maintain adequate soil moisture. Frequent, shallow irrigation isn't recommended for any tree type—you want those roots to grow deep and wide. Welling, diking, and/or the use of soil mulches may also be used to enhance moisture retention.

TIP: Soil should be wetted from the trunk of the tree to just beyond the drip line, to a depth of at least two feet for citrus trees. For example, an Orange Tree with a canopy of 8 ft. needs 8.5 to 9.5 gallons of water every day June through August.