

Beneficials

by Candace Mullen, Bell County Master Gardener

What, one may ask, is beneficial other than a good, tall drink, a relaxing swing in a hammock, a terrific back massage, or winning the mega-lottery? Well, if you are a gardener, the answer is Beneficials -- under and on the ground, on the plants, and flying in the air!

Let's look below the ground first. The best thing to have in your soil is the good old native earthworm. Did you know that Charles Darwin spent 40 years studying earthworms and their habits? His research has been validated by modern methods and shows the value of the lowly earthworm. Earthworms have been a part of the process of building the land for eighty million years or more. It takes the earthworm and its gizzard to grind up both minerals and organic matter. This combination of ingredients is then extruded as castings and adds to our living soil. It certainly doesn't seem possible that earthworms can produce 14 to 18 tons of castings per acre if the right proportions are there! Remember sophomore biology and the dissection we all participated in, some reluctantly? Wow!

Of course, there are other things in the soil, too. Microbes also break down the living matter to become useable. All the Beneficials in the soil do require organic matter to reproduce and feed. They thrive on manure, decaying matter, fallen leaves, or grease from the kitchen. If you supply the earthworms with a food source they, in turn, will do the digging, grinding, combining, and return a soil that is rich and loose. Of course, in Texas we "lucky" gardeners have dense clay soil. The earthworms can't live in that very well. It is up to us to supply the organic matter for the native worm population to eventually multiply and create good stuff from the clay! Patience and continued feeding will eventually help the worms break down that clay. One could also become a worm farmer of red worms to add to your soil. The native population is the best though.

Tired of those fire ants? Try using nematodes to help contain and control them. The nematode is a slender, unsegmented worm. Some can be seen with the naked eye but others are microscopic. These are not the type of nematodes that attack plants and tomatoes. The name of the microscopic fire ant killer nematode is ANTidote 3-N-1. They also work on fleas, flies, and white grubs in the lawn. You can buy them at most organic nurseries or through the mail order catalogues.

What about on-the-ground Beneficials? The insects that help the gardener are truly a great way to control destruction in the garden and not add to the pollution of our world. If you see a ground beetle (they are flightless and found under stones and logs), don't step on him! He is helping in the yard and eating those harmful insects. And let us not forget the good arachnids! Those orb spiders that have pretty colors and build beautiful webs in the garden to catch the flying annoyances. They are truly good helpers.

The frogs, toads, and small reptiles are also Beneficials. Count yourself fortunate to have them in your garden. One of the trends now is to have a "toad house" located somewhere in the undergrowth for the resident toad! Remember the children's books about Frog and Toad? Acquaint your children with them and show them the critters that you want to attract to your yard. Most of these critters are nocturnal feeders and you won't even notice them unless you disturb them suddenly. You might hear them at night though, singing to each other and celebrating the feast they are having!

The most common and most beneficial insects are the "lady bugs" -- they are really lady beetles. Remember the old rhyme? "Lady bug, lady bug, fly away home." If you ever stopped to count the black spots on their backs you would see 12. That's how you know it is a true lady beetle, not a copycat! They are predators and voracious eaters. The larval stage is also aggressive and can eat up to 400 pests! They will clean up aphids and just about anything else that eats your plants. One lady beetle will eat 40 to 50 aphids per day and when those are gone will turn to scale insects, mealybugs, leafhoppers, or anything else it sees! A quart jar will hold 18,000 hungry ladybeetles that would remove one million aphids immediately! This is great news for those of us who grow apples, cabbage, sprouts, roses, and artichokes, just to name a few. They are truly inexpensive to buy either by mail order or from a local organic nursery.

Green lacewings are also a great sight in the garden. If they are there, you know they are eating the bad bugs! Most common is the *Chrysopa oculata* or *carnea*. You buy the lacewing larva and put them in your garden to hatch and start helping you. The lacewing is easily recognized by the delicately patterned,

transparent wings for which it is named. Its threadlike antennae, as long as the body, wave about in exploration when it crawls over the plants in search of mites and soft-bodied insects. They are great to have in a greenhouse, too. Again, these are very inexpensive to buy.

The praying mantis is another great bug to have. They are "still hunters". Their sticklike bodies are nearly invisible as they stand and wait for their unsuspecting game. They are not real fliers and they travel at a slow walk, which means they are very apt to make a permanent home with you. You buy an egg case, usually it holds about 200, and place it in the garden in a fork of a tree or under a bench. When they first hatch they are tiny mosquito sized specks, but toward the end of summer they will have grown an inch or more. They are extremely hungry and eat everything that comes their way! Again one egg case is an inexpensive solution for your insect problem.

A parasitic friend of the gardener is the Trichogramma wasp. Parasitic insects lay their eggs in other insect eggs, so the hatched parasite consumes the food contained in the larger egg. Sometimes the cycle is slower, and it is not until the host egg becomes a caterpillar and is growing that the young parasites attack it for food. This wasp is especially great to stop those tent caterpillars. The wasp is very tiny and is of no harm to humans. You don't even notice them while they are working! One quart and a half of these wasps will contain 24,000 individuals ready to go to work. But you can buy the larva on a card for a small property for a very nominal fee.

Of course, attracting birds to the yard will also decrease the insect population. What every one of us should remember is that every yard is a small microcosm in itself. Everything we add or subtract from it has an impact on something else. Using and attracting Beneficials to your yard will eliminate the need for costly poisons and waste of time applying them. It will help reduce allergies and not contaminate groundwater with poisonous runoff, and most of all, allow us and our children to observe nature and life, as it really should be.