

Eco-Friendly Landscaping

Protozoa -

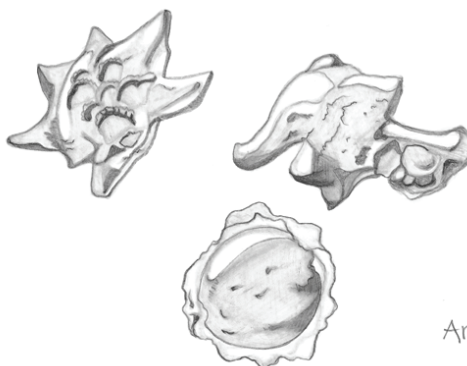
Making Minerals Available to your Plants

Lauren Rama

I've been writing the last few columns about the micro-organisms which live in soil, mainly near the root zones of plants. These micro-organisms cluster near the roots because the plants feed them by exuding sugars, starches, and proteins out of their root walls. Why do plants feed on micro-organisms? Because the micro-organisms bring the plants the minerals and other nutrients they need to grow and thrive.

Protozoa are an important type of soil micro-organism because they eat bacteria and fungi and then poop out the minerals stored in bacteria (mainly nitrogen) and fungi (mainly calcium). This makes those minerals available to the plants, which absorb them through their root walls. Up to 80% of a plant's nitrogen needs can come from protozoa poop!

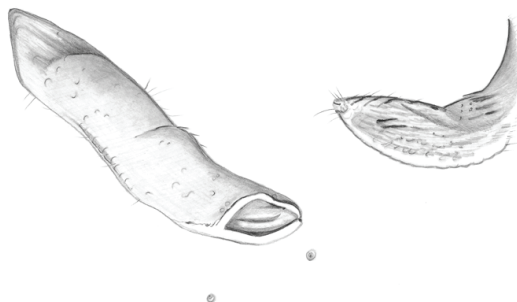
Over 60,000 kinds of protozoa have been identified. The three main models of protozoa are ciliates, amoebae and flagellates. Ciliates move around with the help of little hairs on their bodies. Flagellates move by using tails that are on one or sometimes both sides of their bodies. Amoebae move around in the classic amoeba-like fashion, by adjusting their shape. Amoebae don't have mouths - they just



surround their prey, release digestive enzymes to digest it, and then absorb the results.

Protozoa survive dry times by encasing themselves in a cyst, and surviving for a few years until moisture returns. Protozoa are a vital part of the soil foodweb or ecosystem. They don't just eat other micro-organisms, they are the main food for worms and many soil mites.

Spreading good compost on your soil will encourage protozoa to thrive. A protozoa tea can also be made by taking some alfalfa, putting it in a bucket of water and bubbling air through it with a large aquarium or small fish pond pump for 5 days. After a day you can take the alfalfa out and let the protozoa brew.



Top: Amoeba Bottom: Ciliates

illustrations courtesy of Daniel Ruesch and Debbie Barney

Lauren Rama runs *Eco-yards™*, a landscape design, installation, and organic spray business. She is writing a book: *Eco-yards : Simple Steps to Earth-Friendly Landscapes* due out in June, 2008. Lauren writes a column for the Friends of Fish Creek newsletter.

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