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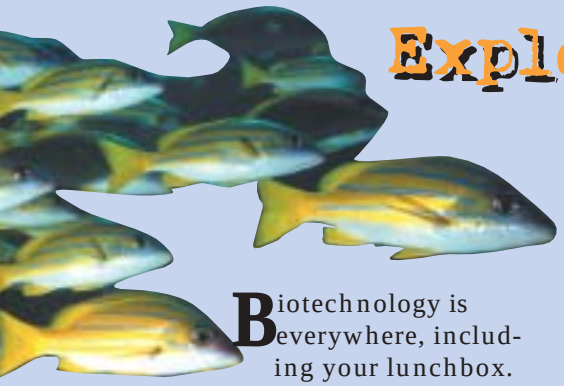

Exploring Marine Biotechnology

by Laura Carsten

Biotechnology is everywhere, including your lunchbox. Foods like yogurt, bread, and cheese are all products of biotechnology, or the manipulation of plants, animals, and bacteria to make products that are useful to humans.

Take yogurt, for instance. The creamy substance is the result of adding bacteria to milk. The tiny creatures feed on the sugars in the milk, converting it into what we know as yogurt.

Cleaning the Oceans

But biotechnology is not limited to food production. In the oceans, scientists use it to protect the environment, discover new drugs, and find new detergents, among other uses.

For instance, biotechnology could be used to help clean up oil spills, says scientist Jody Deming of the University of Washington.

Deming studies bacteria that thrive in cold ocean waters. Some of these bacteria have a natural taste for oil, gobbling it up like popcorn. By adding fertilizer to oil-soaked beaches, she says, scientists could help the bacteria grow more quickly, which in turn would help speed the cleaning process.

Washing Clothes with Enzymes

Products made from cold-loving bacteria could also be used for other types of cleaning.

All living organisms make enzymes, or proteins that help break down food and wastes. In humans, an enzyme called pepsin aids in digestion by breaking down food into smaller chunks.

In the same way, enzymes found in bacteria help them digest their meal. But these bacteria aren't eating pizza: they're eating dirt and oil.

This makes their enzymes handy tools for removing dirt from clothes. And because the enzymes taken from cold-loving bacteria function best in the cold, people could wash their clothes in cold water and get them just as clean, says Deming.

Although this laundry detergent is not yet for sale, many other products of biotechnology are already on the shelves of grocery stores—and in your refrigerator. ✦

Biotechnology can be used to:

- Make new drugs & vaccines
- Develop safer cleansers
- Clean up waste
- Produce fuel
- Produce food

Fun Facts: World's Water Budget

Water covers more than half the surface of the earth, yet only 1% of it is drinkable. The salty oceans hold 97% of Earth's waters. The remaining 3% is freshwater, but 2% of this is frozen in place in sea ice and glaciers. Water for drinking and washing comes from the last 1%, which is held in freshwater lakes, rivers, and natural underground chambers.