SCIENCE & TECHNOLOGY

# Plastic-eating Enzyme from Worm May Help Ease Pollution

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Researchers have found that a chemical from a kind of worm can break down one of the most common forms of plastic.

The finding could open up new ways to deal with plastic pollution.

There have been several studies showing that microorganisms can release **enzymes** that cause the plastic polyethylene to start to **degrade**. But that process takes a long time. Around one-third of plastic waste is polyethylene.

The recently-discovered enzymes were found in the **saliva** of the wax worm moth. They appear to act in only a few hours.

Federica Bertocchini is one of the researchers, who helped write a study on the finding, at the Margarita Salas Centre for Biological Studies (CIB) in Madrid, Spain. She is also a beekeeper. She said she got the idea for the research while storing honeycombs a few years ago. Honeycombs are built by bees to store honey.

Bertocchini told AFP that one year she found her honeycombs full of wax worms. She cleaned the honeycombs and put the worms in a plastic bag. When she returned later, she found the bag was full of holes. She wondered if the worms were eating the plastic, or if there was a chemical reaction that caused the holes.

"We checked that, doing proper lab experiments, and we found that the polyethylene had been **oxidized**," she said.

In her latest research, Bertocchini and her coworkers identified two enzymes in the worm's saliva. The enzymes appeared to break down polyethylene in only a few hours at room temperature.

The group published their research recently in *Nature Communications.* In the study, they explained how they used another worm's saliva as a **control** in the experiment. The control worm produced no result compared with the wax worm's saliva.

Bertocchini said her team is still trying to understand how the worms degrade the plastic. They said much more research is needed before the findings can be used to process plastic waste.

However, Bertocchini said the enzymes could be put into a water mixture and then put "over **piles** of collected plastic" in a waste center.

She said that, in the future, the enzyme could be used in homes, where each family could degrade their own plastic waste.

I'm Dan Novak.

*Dan Novak adapted this story based on reporting by Agence France-Presse.*

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## Words in This Story

**enzyme** — *n.* a chemical substance in animals that helps start natural chemical reactions

**saliva** — *n.* a liquid produced in the mouth

**degrade** — *v.* to cause something to break down into simpler parts

**oxidize** — *v.*to chemically become combined with oxygen

**control** — *n.* a subject in an experiment that is not treated with anything and that is compared to a subject that is treated

**pile** –*n.* a group of things that are place one on top of the other