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Wrap it up—in corn

Paper or plastic? Or corn? Promising research with a corn-based wrap could one day offer consumers a biodegradable alternative to plastic wrap.



A corn-based wrap developed in Graciela Wild Padua's laboratory could create another environmentally friendly use for Illinois corn.

The plastic-like wrap is made from zein, an abundant protein found in corn gluten meal. Zein is used as a base ingredient in animal feed and in coatings on candy, rice and pharmaceutical tablets.

The new wrap could create another use for the Illinois corn crop and may help reduce the growth of plastic waste that adds to landfills. Because the wrap is made from this protein, the product is not

only biodegradable, it also may provide nutrients for soil and livestock in agricultural uses, says Graciela Wild Padua, a scientist with the College of Agricultural, Consumer and Environmental Sciences at the University of Illinois at Urbana-Champaign.

Although the product is biodegradable, it is water-resistant and is designed to be useful for about six months. The first test of the corn-based plastic will be in an agricultural setting—protecting hay bales from wet weather. Covers made from the new material can be left on the bales and eaten by livestock.

"We've received questions about developing new uses for the material from many different industries," she says. "It has been fun to look into the possibilities."

Even so, she does not expect this new wrap to replace plastics all together. For some uses, a wrap material must last indefinitely—this corn-based product will not.

And that, Padua says, is the whole point.

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