

Recycling agricultural plastic is growing industry

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Plastic has become ever present in our culture and dealing with the nonbiodegradable material when we're done with it has become a challenge. According to the Environmental Protection Agency, about 32 million tons of plastic waste were generated in the United States in 2012.

And it's a growing problem for those in the agricultural industry.

On a typical farm, today plastic is everywhere with the cheaper lightweight material replacing ceramic, glass and metal for packaging. These days, hay bales are often wrapped in it and even grain is stored in plastic bags instead of silos for convenience. In addition, plastic has become essential for growers who use large plastic sheets for everything from heating the soil and suppressing weeds to roofing greenhouses.

According to Susie Marshall, the Dallas-based executive director of [GROW North Texas](#) and the president of the [Texas Organic Farmers and Gardeners Association](#), disposal of plastic agricultural items such as plastic mulch and drip irrigation tubing is an issue for Texas growers.



Photos courtesy of Recycling Agricultural Plastics Program.

Bales wrapped in plastic.

“The plastic mulch is effective but can be expensive, and then, is not easy to dispose of. There are very few ways to reuse these items and not many available recycling options across the state. I think it becomes a personal decision as to the cost effectiveness coupled with the disposal issue. But I do think that if more recycling options were available, more farms would make the decision to use the effective plastic solutions in greater quantities.”

Lois Levitan, director of Cornell University's [Recycling Agricultural Plastics Program](#), has been studying the issue for over 10 years.

“Every time I blink, I find out about new uses of plastic in agriculture,” said Levitan.

According to Levitan, the agricultural industry generates only about 2 percent of all the plastic generated in the United States. However, it's a very visible 2 percent she said.



The plastic generated on farms from silage bags, mulch films and pesticide containers quickly piles up, blows around and is exposed to dirt and rain in addition to carrying product residue.

“It’s all over the place, it’s dirty and difficult to handle. If you don’t handle it right away it’s a mess,” she said.

In the past, burning plastic, burying it or paying to someone to haul it away were the only options for disposal. However, there’s well-founded concern about

the health hazards of burning or burying plastic, especially near food sources, due to the dangerous pollutants released. That combined with the desire to save landfill space has spurred community leaders to look for other means of dealing with plastic agricultural waste.

That’s why Levitan and a team of researchers at Cornell University were solicited by citizen activists in 2003 to help coordinate another solution – helping farmers recycle their plastic.

As a result, Levitan has become one of the country’s leading experts on agricultural recycling.

Levitan admits there are challenges to recycling agricultural plastic. In addition to the difficulty of keeping it clean and stored, many of the items are made of a mixture of plastics, which is more difficult to find a market for. In addition, many industrial plastics are black, making it challenging for manufacturers to turn it into other marketable products. Then there’s the remoteness and distance of farms from urban centers to contend with.

The good news is that agricultural plastic recycling is a growing industry. More companies are finding ways to turn used agricultural plastic into other products such as garbage bags, sidewalk pavers and plastic lumber. Manufacturers are seeking new sources to replace expensive virgin material, and investors are looking at locating recycling facilities in farming communities.

Levitan estimates that out of the 35,000 farms in New York state, about 8 percent, are now recycling thanks to their efforts.

“It’s not anywhere near where we want to be by any means,” said Levitan.

While her focus is in New York, she says the principles of their program can be applied anywhere in the U.S. Levitan says she’s fielded questions from agencies and businesses from about two dozen states who are looking into agricultural recycling. She provides the following guidelines for starting an agricultural recycling program:

AGRICULTURAL RECYCLING 101

- **Identify an organizer.** You need an advocate who can coordinate the farming community’s recycling program. Contact your local extension office. Extension agents are frequently willing to help start a program.



- **Take care of your plastic.** Adopt a practice of keeping discarded plastics as neat, dry, clean and compacted as possible. Store it in a dry corner of a barn or outdoors on a pallet off the ground. Keep grit and dirt off it. Squeeze the air out with weight, such as a rock, for compaction. This will make it more marketable and manageable.
- **Locate a group collection site.** This needs to be a central location for participants, with enough room to store the material collected and equipment needed such as a portable baler.

• **Recruit other farmers.** You'll need to amass enough recyclables to get companies interested in purchasing the plastic. Levitan says a good goal to shoot for is about 40,000 pounds of plastic per truckload.

• **Devise a system for collection.** This will be determined by logistics and what works best for the participants. In some cases, farmers bring their plastics to a central location. In other communities, someone retrieves the items.

• **Identify purchasers of the plastic.** According to Levitan, today, there's a market for almost every type of agricultural plastic and more are willing to accept less than perfect material. Levitan recommends the website PlasticsMarkets.org for leads.

• **Seek out subsidies.** The monetary value of agricultural recyclables is typically less than the full cost of collection, which includes recruitment, training, transportation, compaction, etc. Agencies or municipalities interested in conserving landfill space or reducing pollution may be able to offset costs of the program.

• **Take advantage of resources.** Check out [RAPP's web page](#) and [Facebook](#) page. If you have questions, contact the agency at AgPlasticsRecycling@Cornell.edu.

• **Be patient.** Levitan says while the effort to recycle may seem daunting, it's going to help you, the environment and the community in the long run.

"Farmers are not going to get rich from recycling," said Levitan. However, she said it will eliminate the amount of waste you have to pay to have hauled away. And it will quickly become a way of life. Plus, you'll impress your grandkids.