



Technology & Innovation

Agricultural Bale Wrap Recycling

By EduTransfer Design Associates and Haywire Creative

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Many farmers use agricultural bale wrap made of a lightweight plastic film as a convenient and economical way to protect feed quality while in storage. Plastic film is also used for other agricultural applications, including silage bags, haylage covers, greenhouse covers, row covers and plastic mulch. However, the biggest challenge for farmers and the agriculture industry is disposal of this low-density polyethylene plastic film.

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The Ontario Soil and Crop Improvement Association (OSCIA) was recently approached by a company from Cambridge, Ontario that is in the plastics recycling business and looking at other forms of recycling, such as bale wrap. "They are particularly interested in the polyethylene film from the single wrapped bales, or 'marshmallow' bales, as they are the cleanest and easiest to recycle," explains Bruce Kelly, OSCIA Project Analyst in Guelph, Ontario. "The single wrapped bales tend to be piled, so some never really touch the ground, and the plastic is removed when the bales are used and put directly into a collection bin." However, plastic film from silage bags or vegetable production mulches is not being considered for now as they usually contain soil and debris and are too difficult to wash for recycling.

Although there have been a few recycling programs tried over the past few years with some success, Kelly believes there is room for another successful option. Some of these programs were set up for delivery of agricultural plastics to local transfer stations, which were then destined for recycling. However, not all of these ventures have worked that well.



Recycling Pilot Project Launched

The OSCIA brought together a small focus group of 10 farmers who have agreed to participate in a pilot project in partnership with the local recycling company. The farmers have agreed to collect the single bale wrap on their farms and deliver it to a collection station for the company.

"Most farmers currently dispose of their agricultural plastics through an on-farm dumpster service and local transfer stations," says Kelly. "Although costs vary, some farmers pay about \$80 per month to have a dumpster delivered and emptied each month. Although the farmers want to dispose of the plastic wrap in a responsible manner, they aren't prepared to use a collection process that is any more complicated, time consuming or expensive than the dumpster service for their plastics."



For the project, the company has provided large plastic bags in a frame for collecting and storing the plastic wrap. The wrap off of one bale weighs less than two pounds and can easily be managed by hand. The wrap must be clean and free of any debris, rocks or twine before being put in the collection bags. Farmers will deliver their wrap to one of three collection sites set up for the project, and the company will arrange for delivery to the plant. The entire plastic collection bag full of bale wraps can go directly into the recycling pre-processing line.

"The recycling company partner has recently installed washing equipment to chop and wash the incoming material before it goes into their plastic processing equipment," explains Kelly. "We hope to be able to have the first load of plastic bale wrap delivered to them in early August to begin the trial. The company will include the recycled plastics in various processing applications such as plastic totes and biocomposite products."

Once the project results are evaluated and provided the partners decide to continue, the project will be expanded to other areas. "This pilot project includes farmers from west of Cambridge and if we decide to expand the project, we envision expanding the group in a concentric circle and would cookie cutter the idea to another location. The next target area would be west of Cambridge where there is a high concentration of dairy farmers and then continue expanding from there."



"Farmers and industry want to dispose of agricultural bale wrap in an environmentally responsible manner," says Bruce Kelly. "However, they can't afford to spend anymore time or money than they currently spend on regular farm waste disposal."

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From **Diane Zappacosta** on 09/08/2011 8:50:19 AM

This is a great project Bruce.

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