

Bales away...

Hay baler can be used to roll up plastic used for vegetables

A standard hay baler can compress plastic used for growing vegetables into a 4-foot by 5-foot ball, saving growers money in labor and disposal costs.

Ron Goldy, Michigan State University Southwest district vegetable agent, peaked the interest of growers after he showed them baling techniques at six different farms in Southwest Michigan including a demonstration on Sept. 20.

When it comes time to discard the plastic, vegetable growers who use plastic face disposal costs of \$300-\$350 per large construction bin. Goldy said 270 pounds of plastic are used per acre. With 3,000 acres of plastic used in Michigan that's 810,000 pounds of plastic. Typically a grower piles up the plastic and loads it onto a construction bin before it is taken to a landfill. With the baler growers can compress 4-5 acres of plastic into a bale that they can lift with a forklift.

"This allows growers to haul the plastic themselves at about one-half the hauling costs," Goldy said. Growers would only have to pay the approximately \$25 per bale landfill charges. The savings doesn't take into account labor savings.

Goldy hit upon the idea for using a baler after attending a meeting of the American Plasticulture Society in Hershey, Pa. last year. He said the drawback in hauling agricultural films is that they need to be compressed.

"You need a full 40,000 pounds per truck to make it economical," said Goldy. He originally thought about using a baler that is used for corrugated boxes and then brainstormed about using a standard hay baler. He investigated whether a baler had ever been used for plastic and found that Vriesland Growers Co-op in Hudsonville, Mich. had been using a baler for greenhouse plastic.

"They found a certain type of baler works best," said Goldy. Vriesland rented their baler to Goldy so he could determine if it could be used to pick up and compress mulch film.

"When I tried it a couple days after I got it, it worked," said Goldy. He noted that starting the bale is the most difficult step. "It has to have enough volume of material inside the baling chamber," he said. This material is needed to start the tumbling action to pull the plastic in. The baler will roll up plastic sheeting and drip irrigation tape at the same time, he said.

"Growers can see the advantage of it," Goldy said. One grower purchased a baler and another made arrangements to rent the baler from Vriesland.

He said the cost of a new baler is approximately \$15,000, although a good used one can be found for half that amount. The 20 growers who have seen the baler demonstration represent about 2,000 of the 3,000 acres grown on plastic in Michigan.

"It takes a little bit of training to get crews to lay plastic the best way for picking it up," Goldy said. This year 400 acres of plastic were baled, compared to last year when no acres were baled, according to Goldy.

Goldy stressed that not all hay balers are appropriate for plastic. "It takes a certain kind of baler, where the baler chamber starts out large and stays large. These start out large and compress to produce a soft bale," he said. He said in the pickup mechanism there has to be all tines. Balers with augers or other obstructions can't be used since they can cause the plastic to snag.

He has tested a couple different companies that sell balers appropriate for plastic, including Vicon and M@W. He said he favors the M@W balers that use a different technology without belts. It uses a chain with crossbars rather than belts on rollers.

Goldy said efforts are underway to find a place to recycle the plastic as one recycling company used in the past has enough plastic for now. One obstacle to recycling plastic is that it's dirty, often with vegetable material left in and it's black, not usually favored by recycling companies.

A video on the baler will be shown by Goldy during the plasticulture session at the Great Lakes Expo that takes place Dec. 4-6 in Grand Rapids, Mich.

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