Used silo bags: what to do with them

by Tina Wright

LOIS Levitan is not a dairy farmer, but she is trying to address one of our biggest environmental messes, the disposal of agricultural plastic film used for silo bags and wrappings. In some states, we burn tons of this plastic in the open air: the plastic that we use to cover bunker silos, wrap bales, and that we stuff with silage in long tubes.

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Levitan, a Cornell researcher, heads the Environmental Risk Analysis Program and pulls no punches describing the nasty smoke produced when we burn these plastics. Highly toxic and carcinogenic dioxins, as well as heavy particulates, are released in the air for farm families, workers, animals, and neighbors to breathe.

Ithaca, located in Tompkins County, New York, banned outdoor burning last fall (exempting agricultural plastics) after more than a decade of seeing legislation stalled in the New York State Legislature. Five other counties have banned burning of household waste. Several states have banned outdoor burning entirely.

Changing attitudes tough . . .

However, Lois Levitan knows simply laying down laws won't work. Neither will scare tactics. In a recent interview, she described the difficulties in changing our cultural climate. "Just saying to farmers and backyard burners, 'you might get sick,' that's not going to do it. We need to set up a climate where you just don't do it from the cradle. How you do it is the million-dollar question."

Her strategy? "I think we have to use a creative mix of carrots and sticks." The carrot side includes getting an infrastructure together that makes recycling and landfilling an easier alternative to open burning. This means organizing a consortium of everyone involved: farmers, manufacturers of ag plastics, solid waste facilities, local governments, cooperative extension, farm organizations, and public health agencies.

Obviously, the stick side of the equation can mean legislation against open burning and enforcement of these regulations. Less obvious is the danger to public relations, the stick with which we beat ourselves.

"If open burning is happening near the base of our food source, the milk, the meat, the dairy feed, it would seem to me the whole dairy industry would not want to get a bad reputation, to think they are passing dioxins down into the food chain," says Levitan. Plus, the public perception of our housekeeping, not to mention agritourism, is hurt by plastic scraps blowing around or waiting in big, ugly piles for a match.

So how did an academic like Lois Levitan end up working on a problem like this? She explained that in 2002 a grass roots "open burning" group in central New York State came to Cornell's Center for the Environment looking for help. Radiating from Otsego County, this group was a coalition, including Cancer Action N.Y., the Otsego County Burn Barrel Education Association, the Chenango County Farm Bureau, Cooperative Extension, and the New York Center for Agricultural Health and Medicine.

Address the issue . . .

Cornell University, with its College of Agriculture and Life Sciences, was challenged to take a role in addressing the issue, especially the disposal of silo plastics, a product which has exploded in use in the last decade, especially on dairy farms. Levitan co-authored a study "Recycling Agricultural Plastics in New York State" with a visiting Fulbright scholar from Portugal in 2003. When the scholar's stay ended, Levitan completed the study, saying she "wrapped it up by having it consume me . . . so I've become kind of a soap box orator on the subject."

How much silo plastic is used in New York State and how much is burned? The Cornell researcher says only guesstimates are available, but 2.5 million pounds a year is one estimate and at least 50 percent of this material, though probably much more, is burned in the open air. Saying that the alternatives are too expensive for farmers, the New York State Farm Bureau routinely opposes efforts in the New York State Legislature to ban all open burning. Levitan's approach is to include all major players, "All the proposals that I put in, I try to involve the New York State Farm Bureau."

Should we landfill ag plastics rather than burn? Levitan responded, "Rather than burning, absolutely. But I'm quite concerned about landfilling. One of the things about plastics is they are very high in embodied energy which means that a lot of fossil fuel energy has gone into making these plastics. If plastics are burned properly, they provide a lot of heating energy." Which brings us to waste-to-energy incineration (WTE).

Only around 100 WTE incinerators in the U.S. are state-of-the-art, but their efficiency is impressive. However, the logistics are daunting; transportation of ag plastics from farm to burner, getting the plastics clean, sometimes baled, and ready to burn. James Garthe at Penn State University is working on recycling ag plastics into fuel pellets. Without subsidies and grants, though, none of this is economically viable compared to landfilling.

In Canada, some ag plastics are being recycled into plastic lumber and deck material. Again, logistics. Surveys show farmers are unwilling to haul plastics very far or pay much for disposal. Ag plastics are often the wrong color for recycling to new products. So far, manufacturers have not stepped up any more than the ag community to fund recycling efforts of their profitable products that pollute upon disposal.

All the research, analysis and sources from Cornell's Environmental Risk Analysis Program are available on their website, http://environmentalrisk.cornell.edu/AgPlastics/. They are trying hard to be an agent of change involving all parties. From their 2005 study on ag plastic recycling, its feasibility and options in central New York: "Without community interest and individual/organizational leadership, the recycling of agricultural plastics will not happen!"

Will the dairy farming industry step up to the plate?

WASTE TO ENERGY incinerators, recycled plastic lumber, and deck material are some of the options for used silo bags. Logistics are still difficult.

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