New York State's Recycling Agricultural Plastics Program (RAPP)

Communities Hitting it Out of the Park - Diverting Ag Plastics

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• Why farmers use plastic:
  – Produces better silage/feed
  – Cheaper than building permanent storage
  – No other option
  – Greenhouses – cheaper and safer than glass

  – 6+ million lbs. in the NY dairy industry*
  – 10+ million pounds in NY agriculture*

* Very conservative numbers
**Common and Illegal Disposal Method**

Better and easier alternatives needed

“Matches Are Cheap”

**Burning:**

- Emits dioxins, heavy metals, & particulates
- Emissions from fires on farms settle near the source of food & feed
Disposal Methods

- **Landfill** – voluminous & hard to handle on farms, in trucks and at landfill. Costly.

- **Burying on farm** - legal but may impact land value and ability to finance (resale)

- **Recycling** – needs to be made available and "easy"
Since 2009 > 2 million pounds of used agricultural plastics collected and recycled
Collection rates and markets are increasing rapidly -
~ ½ million pounds ready to ship
The use of ag plastics also continue to increase
Recycling Agricultural Plastics Program (RAPP) NYS Map

This map shows baling activity and locations, super sack locations and locations where RAPP education is occurring.
What Are Agricultural Plastics?

Bale Wrap: Stretch film wrapped around individual bales of hay or a line of hay bales.
Bunker silo covers:
Heavy duty black/white
LDPE or LDPE reinforced with
embedded nylon or polyester
string - possible layer of EVOH
Greenhouse, hoophouse, high tunnel covers: clear or white sheets of LDPE or LLDPE
Mulch film: strips of LDPE, typically ≤ 1 mil thick, 3’-5’ wide; white, black, silver, occasionally clear or other colors, sometimes two color layers; contacts soil & gets dirty—**Difficult to recycle!**
Irrigation drip tape
Plant pots, flats, seedling trays
HDPE, PS, PP, blown, thermo-formed

Photo: Lois Levitan, RAPP
Maple Syrup Tubing: primarily LDPE tubes with nylon fittings, rubber ball valves
Empty Drums & Pesticide Containers
Ag Container Recycling Council (ACRC) collection

Photo: Lois Levitan, RAPP
Challenges

Up until 2013
• Lack of local markets
• Issue domestic v. international markets

Current
• Plastic Storage and Preparation-keeping plastic clean and dry
• Centralizing ag plastics from Farm to Recycling facility to transport to Market
Why Is Agricultural Plastics Recycling Difficult?

Often dirty • Dispersed across rural landscape
Bulky • Mix of resins • Many types
Possible or perceived pesticide residue
Ag plastics aren’t necessarily dirty…
Best Management Practices aid farmers in keeping it clean
What RAPP Does – *Life Cycle*

- On-farm education: preparing plastic for recycling, incorporating recycling into farm routine, operating compaction equipment
- Extended producer responsibility among agricultural plastic manufacturers & distributors
- Encourage behavior change: STOP on-farm disposal. START recycling
- Develop infrastructure. Streamline logistics of moving from farms to new end products.
- Cultivate market options appropriate for agricultural plastics feedstock.
On-farm education:
- preparing plastic for recycling
- incorporating recycling into farm routine

What RAPP Does: Work with Farmers: BMPs

Often with Cooperative Extension Educators
BMPs: teaching methods of collection and storage

Keeping it “clean”

Plastic from:
- Bunker silos
- Silage stacks
- Silage bags

Plastic from:
- Bale wrap
History: RAPP “does it all”
Expensive, unsustainable, impossible

Spot help from SWR
(Malone Transfer Station)
What RAPP Does: markets

Extended producer responsibility among agricultural plastic manufacturers & distributors

Cultivate market options appropriate for agricultural plastics feedstock.

Develop infrastructure. Streamline logistics of moving from farms to new end products.
What RAPP Does – Market Development - Create Pull Through

“NY” Recycled Ag Plastics

Garbage Bags
Brooklyn, NY
Dishashish Exim Pvt. LLC
Various PE films

Recycled Plastic Pellets
TAP Industries
Malone, NY
Many materials
Plant in development

Plastic Sidewalk Pavers
Terrecon, Inc
Fountain Valley, CA
NY Bale Wrap

Plastic to Fuel Processing
Agricultural and Renewable Energy
Business Park
Madison County Dep. of Solid Waste
Proposed Plant

Plastic “Plywood”
NBF Plastics, LLC
Auburn, NY
Many materials
In development

Many Brokers
Boat Wrap: There are markets available
What RAPP Needs to Do

Streamline logistics of moving materials from farm to market
Methods for easy on-farm handling
Bulk Bags (*Super Sacks*)
Bulk Bags:

Easy transport to central receiving
Integrate with Solid Waste & Recycling for Sustainability of Ag Plastics Recycling
A Success Story

Wyoming County

> 40% of dairy industry

is recycling ag plastics

Producers are interested!
Models: SWR based

Delaware County Solid Waste Management

Madison County Solid Waste & Recycling Center *

- Plastics to oil proposed

Private Companies – discussion stage currently

Cornell Cooperative Extension outreach support through RAPP
Many agricultural plastics are recyclable

**Help Wanted Building Infrastructure!**

RAPP funding has come from New York Farm Viability Institute (NYFVI), NYS Department of Environmental Conservation (NYS DEC), USDA Rural Development/Northeast Waste Management Officials Association (NEWMOA), USDA Smith-Lever/Hatch, US EPA Region 2 Pollution Prevention, NY Empire State Development’s Environmental Compliance Unit.

Current funding for NYS program implementation and equipment is primarily from the NYS Environmental Protection Fund, administered by NYS DEC.

**Recycling Agricultural Plastics Program**

**Life Cycle Stewardship - a Cornell University Collaboration**

- Soil and Water Conservation Districts
- Cornell Cooperative Extension Associations
- County Recycling Centers
- County Highway Departments
- Private Solid Waste Companies
- Recycling Companies
- Many Others