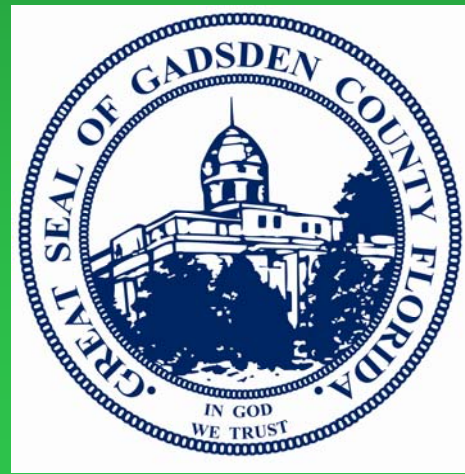


Collection and Processing of Waste Agricultural Film Mulch: A Case Study of a Pilot Program in Florida

Pesticide & Ag Plastics Stewardship
10th Annual Conference
February 21-23, 2010



State of Florida
Grant Assistance
Pursuant to Line Item 1819 of the 2008-2009 General
Appropriations Act
Agreement No S0427



Project Background

- Agricultural film (plastic) mulch is estimated to generate 80 million pounds or 40,000 tons per year of waste in Florida.
- Presently, this waste stream is either buried in Class 1 or 3 landfills or burned on-site in small piles within agricultural fields.
- While agricultural film plastic waste does not represent a large fraction of total solid wastes landfilled in the State of Florida, it is a problematic and voluminous waste stream in various counties within the State that generate large quantities of this plastic agricultural mulch.
- It is also a waste stream that is continuously produced or generated annually for crop production and can represent a significant portion of hurricane related debris in counties that are impacted by such storms.
- Lastly, burning of this waste stream in fields could present nuisance problems for residents/businesses that are located downwind from burning locations.

Florida Statutes 403.707 Permits.—

2) Except as provided in s. 403.722(6), a permit under this section is not required for the following, if the activity does not create a public nuisance or any condition adversely affecting the environment or public health and does not violate other state or local laws, ordinances, rules, regulations, or orders:

- (e) Disposal of solid waste resulting from normal farming operations as defined by department rule. Polyethylene agricultural plastic, damaged, nonsalvageable, untreated wood pallets, and packing material that cannot be feasibly recycled, which are used in connection with agricultural operations related to the growing, harvesting, or maintenance of crops, may be disposed of by open burning if a public nuisance or any condition adversely affecting the environment or the public health is not created by the open burning and state or federal ambient air quality standards are not violated.



Project Background (Continued)

- This project is presented as a pilot project to determine the economic and technical feasibility of collecting the plastic film (used as crop mulch) in the fields, processing it to meet end use market specifications and acceptability, and recycling the material into new products and/or back into plastic mulch.
- A key component of the proposed pilot project is to store the agricultural plastic film in several locations to “centralize” the transportation and transfer of this waste to end use markets.

Project Objective

- Examine the cost and benefits of collecting and processing waste agriculture film for recycling purposes.

Project Description

Task 1: Development of Project Timeline

Develop a project plan for the collection and processing of waste ag film. The completed document will identify the projects goals and objectives/tasks along with measurable time frames for completion of each. This will be completed through project coordinating meetings between project partners.

Task 2: Identification of Collection Equipment

Research and design waste ag film collection equipment and requirements. Research waste ag film collection partners and set locations and dates for collection events. Equipment used as part of this project will be leased and not purchased.

Task 3: Implementation of Pilot Program

Begin collection events and maintain records on the ag film collected and processed. Develop marketing plan for promotion of events.

Project Description

Task 4: Data Collection, Preparation and Auditing

Coordinate the collection of data for the project. Data collection will include collecting data from project participants and analyzing the data to prepare a cost-benefit analysis of collecting and processing waste agriculture film for recycling. Data analysis will be shared and reviewed with grant participants and appropriate agencies. Coordinate and oversee all project tasks and ensure compliance with FDEP agreement and prepare and deliver quarterly and final reports as specified in the terms of the contract.

Quarterly reports will summarize the project activities, planned activities for the next quarter, problems that occurred, how those problems were or will be handled. The quarterly reimbursement reports will accompany the quarterly progress reports. The contents of the quarterly progress reports will contain some of the same information as the final report but the final report may contain additional or different amended information to support the activities of the project. The final report will include a cost-benefit analysis of collecting and processing waste agriculture film for recycling.

Project Description

Task 5: Technology Transfer

In an effort to promote the transferability and usefulness of the project, team members will develop a presentation designed in Power Point. This presentation can be used to promote the projects mission and success around the state in an effort to encourage county's, municipalities and local governments to support transferability of such a program in their community. Presentations can also be scheduled with the Recycle Florida Today members and other outlets such as economic development authorities when and where appropriate. Project team members will commit to one presentation and one article on the project for technology transfer purposes, but may conduct other presentations in the future as in-kind services.

Summary of Harvested Acres of Tomatoes in Florida by County and Corresponding Ag Film Production Potential

County	Harvested Acres*	Potential Quantity of Ag Film Production per year (in Pounds)**	% by Weight
Manatee	16,576	33,152,000	40.99%
Collier	5,913	11,826,000	14.62%
Hillsborough	5,522	11,044,000	13.66%
Miami-Dade	3,667	7,334,000	9.07%
Palm Beach	2,684	5,368,000	6.64%
Hendry	1,827	3,654,000	4.52%
Gadsden	919	1,838,000	2.27%
Hardee	202	404,000	0.50%
Jackson	142	284,000	0.35%
Total of all other Counties under 100 acres each of harvested tomatoes	2,985	5,970,000	7.38%
Totals	40,437	80,874,000	100.00%

* Source of Harvested Acres: Florida Department of Agriculture & Consumer Services

** Based on two plantings of tomato crops per year

Environmental Sampling

1. Developed Sampling Protocol
 - Agricultural (AG) Film Sampling Protocol
 - Pre-determined grid, 12 inches by 12 inches
 - Agricultural (AG) Drip Tube Sampling Protocol
 - A random sample of AG Drip Tube of 12 inches in length.
2. Ag Film Tested Under - Synthetic Precipitation Leaching Procedure (SPLP)

EPA Method 8270C

Semivolatile Compounds

by GC/MS

EPA Method 8141A

Organophosphorous Pesticides

EPA Method 8151A

Herbicides

AgFilm Data Summary - SPLP Samples

Analysis Category	Sample ID	Date	Analyte	Reported Concentration	Units	Reporting Limit	Sample Qualifier
<i>Method 8270C</i>	Grey Film		<i>Semivolatile Compounds by GC/MS</i>				
			Diethyl phthalate	14	ug/L	9.5	Not Given
			4-chloro-3-methylphenol	9.1?	ug/L	9.5	I, J3
	Pentachlorophenol		28	ug/L	14	V, J3	
	Black Film		Pentachlorophenol	4?	ug/L	16	I, V, J3
<i>Method 8141A</i>	Grey Film		<i>Organophosphorous Pesticides</i>				
	Black Film		All results were Below Reporting Limits (U)				
<i>Method 8151A</i>	Grey Film		<i>Herbicides</i>				
	Black Film		All results were Below Reporting Limits (U)				

Notes

J3 = Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

V = Indicates the analyte was detected in both the sample and the associated method blank.

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.



























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What's Needed?

Market Development:

- Recycling Markets

- Fuel Markets – Cement Kiln Industry

- Waste Plastics-to-Fuel

Processing Equipment Research

Wash Line Research

AG FILM RECYCLERS WANTED!



Florida tomato farmers produce and ship 1.1 billion pounds of tomatoes every year. To do so they use 80,000 tons of plastic agricultural film every year. The bulk of this film is currently being burned in the field or landfilled. We are looking for a plastic broker and/or recyclers that have an interest in this material. If you have an interest in recycling this waste stream please contact us.

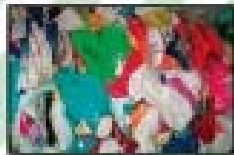
Contact: Gene Jones
Southern Waste Information eXchange, Inc.





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April 18-20, 2010

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Conference & Trade Show**



The 3rd Annual Waste-to-Fuels Conference & Trade Show
will be conducted at the Hyatt Regency Jacksonville Riverfront
in Jacksonville, Florida on April 18-20, 2010.

www.Waste-to-Fuels.org

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