

Ventura County Agricultural Plastics

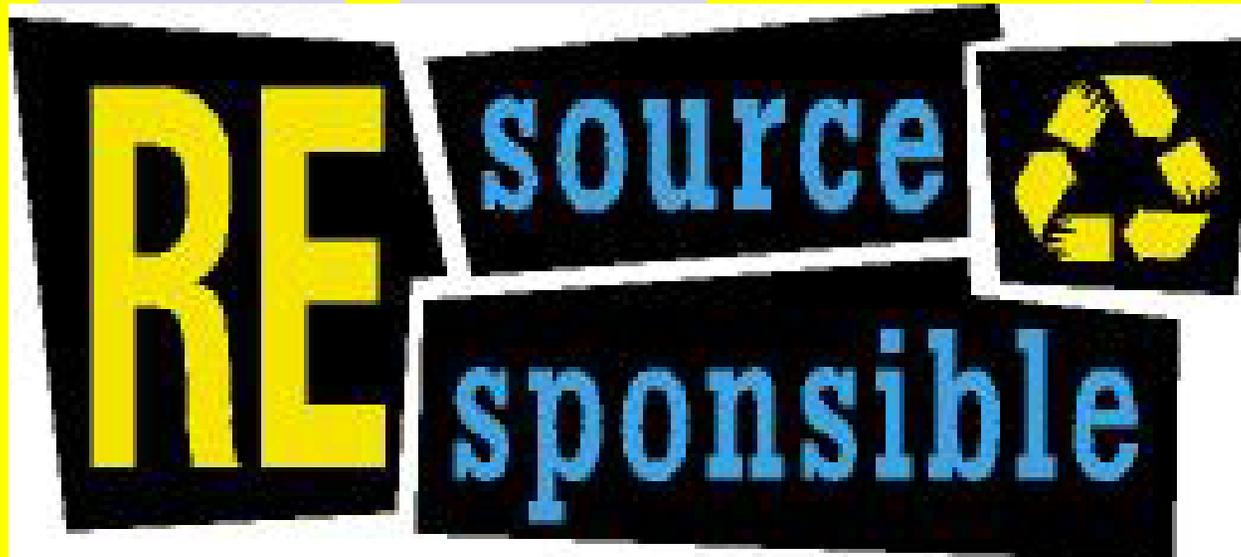
CIWMB Film Plastic Workshop

October 11, 2005

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Summary

Assessment of the Target: **Ready**

- Why target Agricultural Film Plastics?
- Calculating Generation: An Electronic Tool
- Trends in Ag Film Plastic Generation

Toward Diversion: **Aim**

- Current Situation
- Markets for the Material
- Identifying Obstacles



Recruitment & Site Selection: **Fire**

- Contacts with Companies: ENO Commits
- Site Selection
- Alternative Targets: Export and Biofilm

Why target Agricultural Film?

Most plastics are mixed with other waste, are dispersed, and are generated in smaller amounts at any one time:

- Irrigation Tape
- Pesticide Containers
- Nursery Pots, Trays

Film Plastics form big homogenous loads

- Greenhouse Covers
- Fumigation Film
- Row Covers
- Mulch Film
- Silage Bags and wraps

Table 1 Agricultural Plastics in the USA

(Source: American Plastic Council, 1994)

Plastic Resin Type & Product	Quantity (Million lbs)
#2 HDPE (High Density Polyethylene)	
Nursery pots	150-180
Pesticide containers	40
#3 LDPE (Low Density Polyethylene)	
Greenhouse film	16-30
Mulch film	40-140
Forage and grain structures	12
#5 PP (Polypropylene)	
Nursery pots	70-80
Row covers	N/A
#6 PS (polystyrene)	
Nursery trays, packs & flats	50-60
Total	378-542

How much Ag film plastic?

3,326 tons in V.C.

(Interactive electronic spreadsheet available by request)

Mulch Film and Fumigation Film Used in Ventura County in 2004

Crop	Mulch Film Per Year				Fumigation Film Per Year				TOTAL FILM*
	Acres	Rolls/ Acre	Weight/ Roll	Subtotal	Acres	Rolls/ Acre	Weight/ Roll	Subtotal	
Raspberries	0	0	0	0	1,477	1	443	654,311	654,311
Strawberries	10,349	3.6	90	3,353,076	5,175	1	250	1,293,625	4,646,701
Tomatoes	966	4	105	405,720	966	1	250	241,500	647,220
Peppers	3,155	1.2	120	454,320	1,000	1	250	250,000	704,320
			Mulch Subtotal	4,213,116			Fumigation Subtotal	2,439,436	
								Grand Total (lbs.)	6,652,552
								Grand Total (tons)	3,326

* Notes: Soil & Moisture would boost mulch film weight 50% & fumigation film 30%.

Above does not include flowers.

Trending Up or Down?



- ↑ Row crops increasing due to foreign competition in tree crops
2003: Strawberries 8,794 acres; raspberries 372 acres
2004: Strawberries 10,349 acres; raspberries 1,477 acres
- ↑ VC crops received “Critical Use Exemption” to Methyl Bromide ban
- ↓ "Chemigation" (irrigation with herbicides and pesticides mixed into the water)
- ↓ "Shanking In" fumigant (using an implement to stake in chisels that provide chemical treatment).
- ↓ Tightening of Methyl Bromide Ban

The Current Situation

- Most Hauled to landfill

Gold Coast: \$39.25/ton

Del Norte: \$42/ton

SVLRC: \$42.25/ton

Toland: \$100/ton*

- Current Pilot Export

- <500 tons/year so far

- Export Challenges:

- Transport Costs

- Market Stability

- Import Restrictions & Load Rejections:
Gold Coast & America Haulong

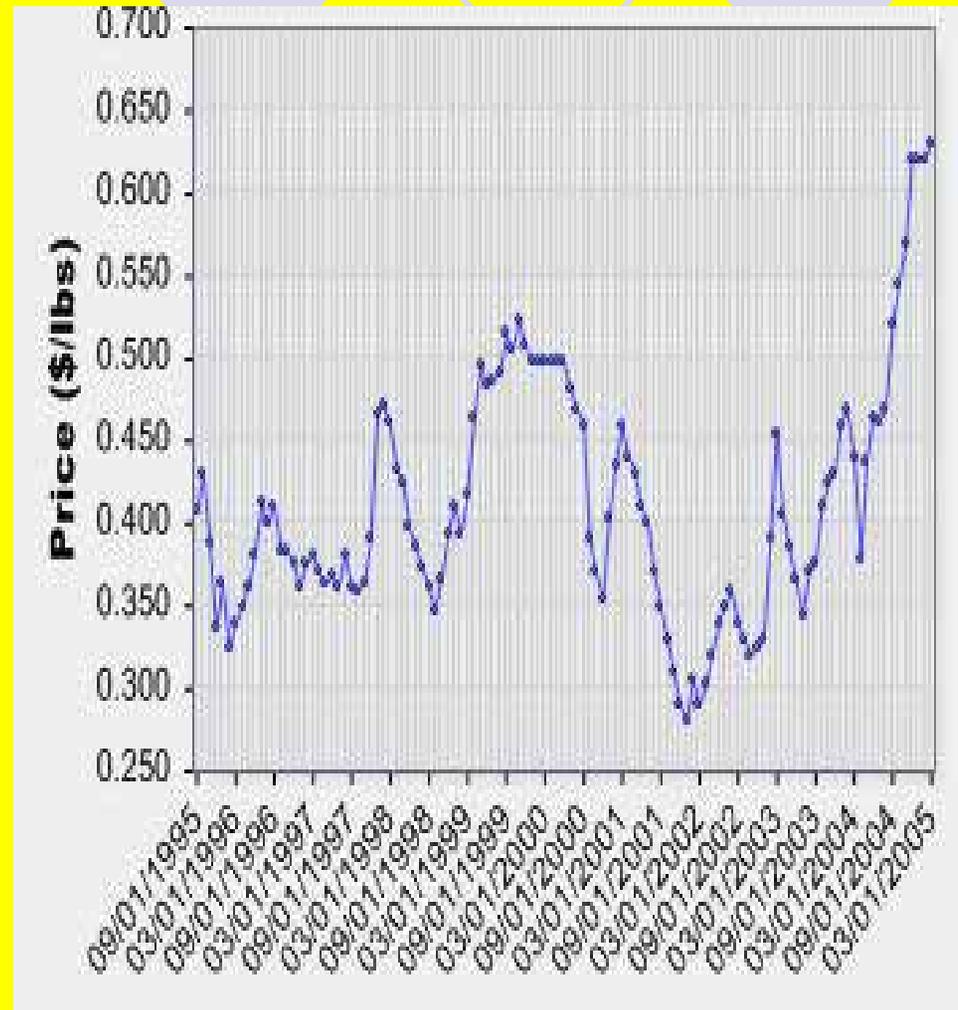


Photo: Ag Plastic bales opened for recycling after export to China (ENO Plastics)

Market for the Material

(Source: The Plastic Exchange, LLC 2005)

- Plastic price doubled
- Chinese Markets
- Trend in plastic recycling



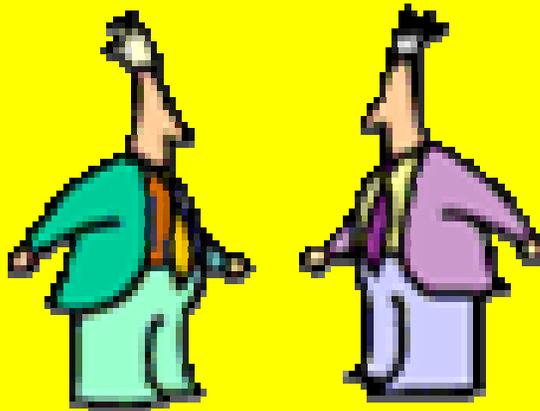
If Available and Valuable, Why Not More Recycled Now?

- Comes off fields 30% to 50% Dirt
- Generated seasonally, but facilities need year-round
- Fumigation Film Contaminated with Glue
- Hard to handle
- Haulers linked to transfer linked to disposal

- Industrial Land Too Expensive, OS Difficult to Site
- Existing Disposal Options Offer Low Transport Costs
- Existing Recycling Options are Distant

Recruitment for a Local Recycler

- Information for Trex and A&M Plastics
- Samples sent to AgriPlas
- Yours Sunflower met with Hauler
- Feedstock assessment, Site selection, Permitting, & Financing (RMDZ) for ENO Plastics. ENO commits to site in V.C.



Local Facility: Challenges & Strategies

Challenge:

Need Industrial Land, Easy access to Ag Generators

Strategy:

Site searches by Oxnard Econ. Development Corp. & Camarillo Econ. Dev. Dept.

Challenge:

No outdoor storage allowed in light manufacturing zone.

Strategy:

Farmers not required to remove from field until new crop goes in.

Choose sites with more interior space for product storage & effluent treatment.

Make bales.



Local Facility: Challenges & Strategies

Challenge:

Outdoor storage in Heavy Industrial limited by screening & parking requirements.

Strategy:

Find sites with excess parking; 2 Parking Spaces Required per 1,000 Square Feet.
Build 12' enclosures landscaped and matching architectural style of building.

Challenge:

Air and water discharge permits.

Strategy:

Early and often meetings and consultations with regulators.
Approval of "Authority to Construct" before purchase of equipment w/ BACT



Back-Up Strategy: Improve Export

- Obtained “commitment” from one MRF
- Planned outreach
- Considering adding to “Director’s List” of mandatory recyclables
- Results in pressure on other MRF to follow



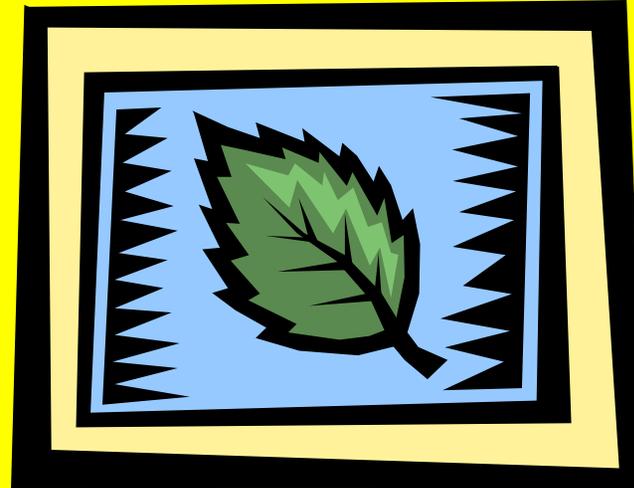
Gold Coast
Ventura



Del Norte
Oxnard

Alternative Strategy: Bio-Film

- If can be tilled into soil, adds nutrients & avoids collection costs
- Currently undergoing EPA funded testing for stability at Washington State University
- Bio-products use less energy & resources than manufacturing plastic and are non-petroleum
- Could eliminate plastic market uncertainties
- Proposed pilot project with UCCE in VC



Diversion Estimates for Options

- **Export:** 2,000 tons*
- **Local Facility:** 4,500 tons*
- **Bio-Film Pilot:** ~ .5 ton per acre



*Includes dirt & moisture not included on previous table; boosting mulch film 50% & fumigation film 30%.