

# Agricultural Plastic/Film Use and Recycling in California

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# Agenda

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- Purpose of the Study
- Data Collection
- Major Results
- General Impressions from Results

# Purpose of the Study

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- The purposes of this study were:
  - To develop a detailed examination of plastic usage in California agriculture
  - To develop a recycling strategy for agricultural plastic in the state.
  - This project was funded by the California Integrated Waste Management Board and the California Institute for the Study of Specialty Crops.

# Data Collection

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- 3,000 surveys sent to producers in the state.
- 2,206 producers sent back the survey by mail, completed the survey by phone, or verbally declined over the phone to participate in the survey
- 895 producers responded to at least a portion of the survey
- 389 respondents indicated that they use agricultural plastic
  - This equates to 43% of the respondents indicated they used some form of agricultural plastic.

# Data Collection Cont.

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- Participants included producers from:
  - berries other than strawberries,
  - strawberries,
  - peppers,
  - melons,
  - tomatoes,
  - nursery,
  - greenhouse and horticulture,
  - dairy,
  - hay,
  - grapes,
  - and stone fruit and tree nuts.
  - Information was also collected regarding plastic usage by producer who produce other types of vegetables other than the ones listed.

# Data Collection Cont.

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- Section 1 of the survey collected information regarding general demographic information.
- Sections 2 through 4 gathered specific information by type of plastic regarding producers' usage and disposal of agricultural plastic.
- Section 5 of the survey explored general information regarding producers' disposal and recycling of agricultural plastic.



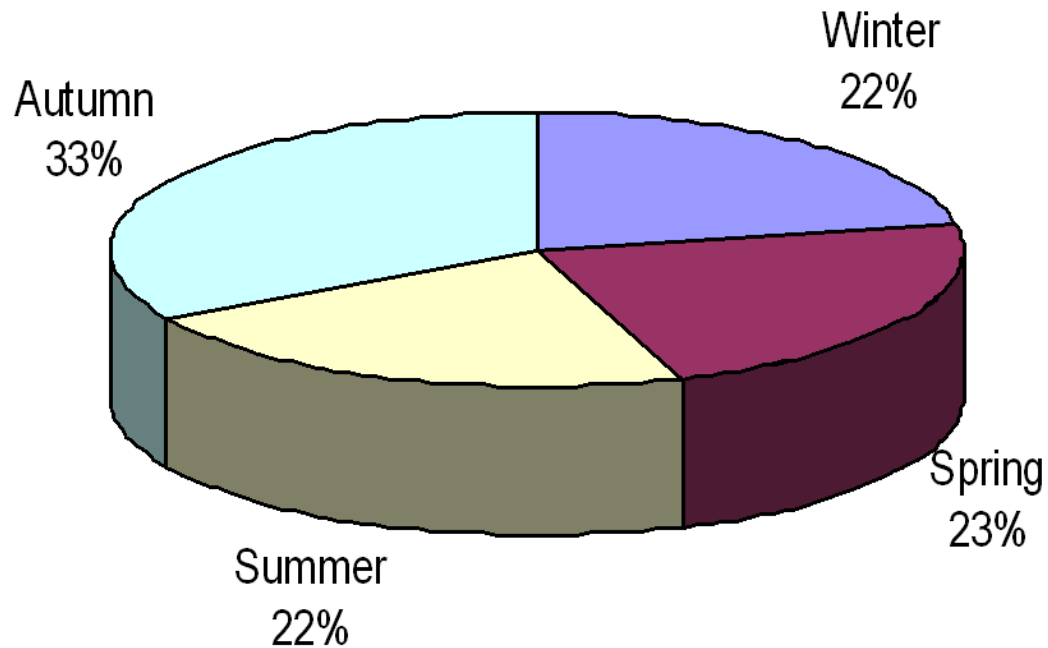
# Major Results



# Percentage of Survey Respondents Using Agricultural Plastic by Industry

Industry	Number of Survey Respondents	Number Indicating Plastic Usage	Percentage Using Agricultural Plastic
Berries other than strawberries	36	16	44.44%
Strawberries	64	60	93.75%
Grapes	140	33	23.57%
Melon	38	24	63.16%
Stone Fruit and Tree Nut	281	63	22.42%
Pepper	52	38	73.08%
Tomatoes	102	37	36.27%
Vegetables	128	67	52.34%
Dairy	65	39	60.00%
Hay	168	67	39.88%
Greenhouse	94	71	75.53%
Nursery	156	107	68.59%

# Primary Season Producers Dispose of Their Agricultural Plastic



# Estimated Tonnage of Agricultural Plastic Disposed of on a Yearly Basis by Industry

Industry	Tons of Agricultural Plastic Disposed of Annually	
	Estimate Based on Average Producer	Estimate Based on Median Producer
Other Vegetables	12,194.29	4,101.06
Greenhouse and Nursery	11,799.81	927.21
Strawberries with Fumigation Plastic	10,484.31	9,555.00
Dairy	7,902.53	1,185.21
Stone Fruit and Tree Nut	4,544.79	51.55
Tomatoes	4,196.70	2,653.45
Hay	2,187.14	765.44
Peppers	1,536.94	1,433.32
Grapes	340.04	273.29
Melons	193.29	5.65
Berries other than Strawberries	126.84	63.88
<b>Total</b>	<b>55,506.70</b>	<b>21,015.05</b>

# Upper Estimate of the Amount of Plastic Disposal for CA Agriculture

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- If there were 100% participation in usage by producers in each industry and the current level of usage by the average producer is maintained, it is estimated that there would be 107,794.3 tons of agricultural plastic disposed of per year.

# Pounds of Agricultural Plastic Disposed of Annually By Income Level for Producers in the Survey

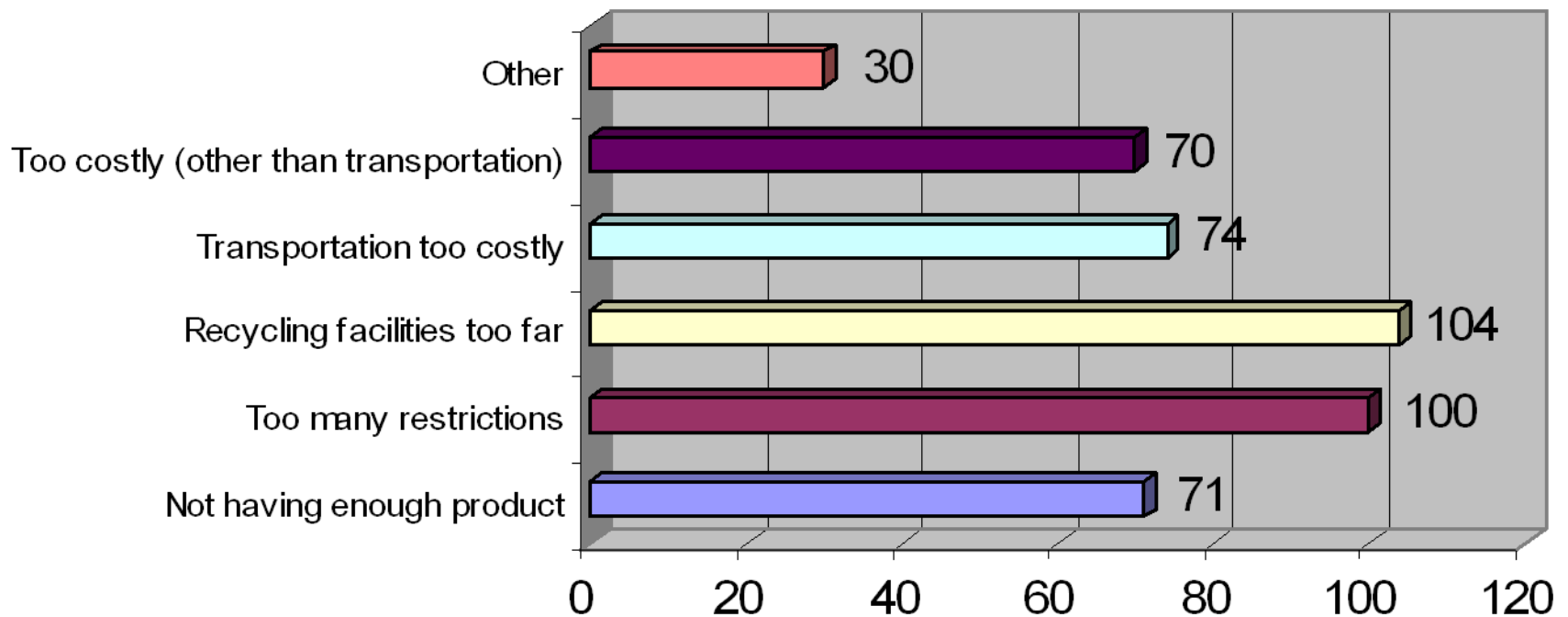
Income	Total	Average	Total Reporting
Under \$100,000	9,280	320	29
\$100,000 - \$249,999	95,884	3,306	29
\$250,000 - \$499,999	50,630	1,808	28
\$500,000 - \$1,000,000	109,962	2,820	39
Over \$1,000,000	<b>2,305,224</b>	25,614	90
Total	<b>2,570,980</b>		215

≈90%

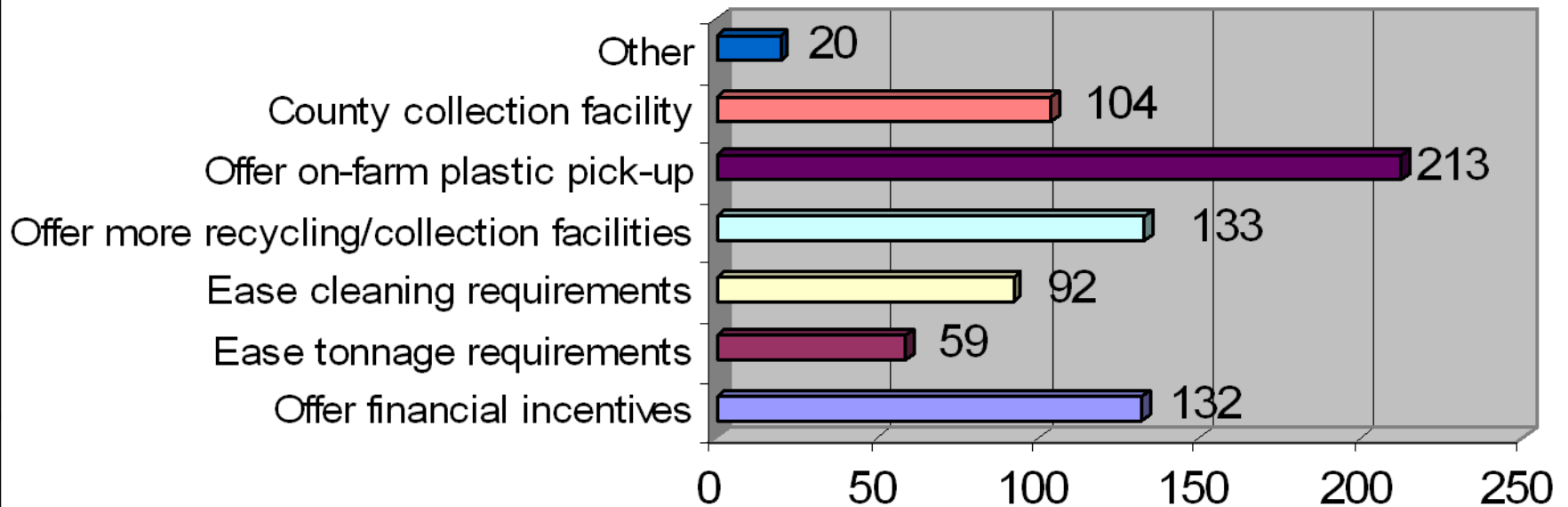
# Percentage of Survey Respondents Who Recycle Agricultural Plastic by Industry

Industry	# of Producers Who Reported Recycling	# of Producers Who Do Not Recycle	% of Producers Recycling Agricultural Plastic
Berries other than strawberries	4	12	25.00%
Strawberries	18	40	31.03%
Grapes	14	18	43.75%
Melon	3	20	<b>13.04%</b>
Stone Fruit and Tree Nut	24	39	38.10%
Pepper	10	28	26.32%
Tomatoes	9	27	25.00%
Vegetables	20	46	30.30%
Dairy	11	28	28.21%
Hay	15	51	22.73%
Greenhouse	29	41	41.43%
Nursery	49	57	<b>46.23%</b>

# Expected and Experienced Difficulties with Recycling Agricultural Plastic



# Options that Would Encourage Producers to Recycle Agricultural Plastic



# General Impressions from the Data

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- There is a group of producers who are currently recycling their agricultural plastic.
- There is a group of producers who would be encouraged to recycle if a pick-up service existed.
- Distance from recycling facilities seems to be the biggest hindrance for producers to recycle.
- A recycling strategy should initially start with large producers and geographically concentrated industries.



Thank you for your time  
and interest.

Questions?