

BlacksheepStrategy

CleanFARMS Manitoba Farmer Survey

Final Report
January 26, 2011

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BlacksheepStrategy

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CleanFARMS Manitoba Farmer Survey

Executive Summary

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Executive Summary

This document presents the results of a survey of Manitoba farmers, conducted in November 2010. The overall purpose of the research was to gain insight into farmers' behaviours and attitudes related to agricultural waste and recycling, in order to build a base of knowledge to help meet CleanFARMS' objectives.

A quantitative telephone survey was undertaken, targeting 300 farmers in Manitoba. The survey was conducted in November 2010. A sample of this size provides a margin of error of +/- 5.6% at the 95% confidence level. This means that for a given result, we can be 95% confident that the survey result is within 5.6% of the "true" result if we had done a census of the entire population. The margin of error is at its widest for a result of 50%, and is narrower for percentages above or below 50%.

The sample included about 49% of growers with primarily crop operations, 39% with mixed crops and livestock, and 12% with primarily livestock. Average acreage within the sample was 1,420.

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Executive Summary

Waste generation

The most common types of waste materials generated on farm include:

- Waste oil and filters (95% of respondents generate in a typical year or have on farm)
- Plastic oil or antifreeze containers (89%)
- Unwanted tires (83%)
- 10L size-range (under 23L) pesticide containers (77%)
- Empty seed bags (71%)
- Cardboard packaging from pesticides (69%)
- Just over 60% of farmers also generate or have plastic or cardboard packaging from agricultural products.

The least common waste materials include: used grain bags (11%), used plastic bale or silage wrap (16%), and empty containers from livestock cleaning products (19%)

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Executive Summary

There are some differences in the portion of farmers who have each type of waste material, primarily based on acreage, with farmers with 5000 or more acres more likely to have waste oil and filters and unwanted tires, and those with 2500 or more acres more likely to have 10 L pesticide containers and their cardboard packaging, empty feedbags, unwanted pesticides and large containers (totes, drums).

Respondents were asked how they dispose of each of the waste materials they have on their farm.

Following are the ways that the most predominant materials are disposed of:

- Waste oil and filters - Collection site (33%), town recycling (12%), private waste removal (12%), town landfill (9%), burn (8%)
- Plastic oil or antifreeze containers - Town landfill (24%), collection site (23%), burn (17%), town recycling (15%)
- Unwanted tires - Town landfill (25%), collection site (24%), town recycling (15%), store to deal with later (15%)
- 10 L size-range containers - Return to a collection site (89%)

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Executive Summary

A high portion of farmers are burning seed bags, plastic wrap, cardboard packaging, twine or net wrap, feed bags, plastic silage and bale wrap, Styrofoam packaging.

A high portion of farmers are storing the following on their farm: sharps and needles, antifreeze, pesticides, paints and solvents, unwanted tires.

A portion of farmers are putting the following in municipal landfill: plastic oil or antifreeze containers, tires, plastic wrap and packaging, paints and solvents, sharps or needles, Styrofoam packaging, animal health products, livestock disinfectant containers.

There are some interesting regional differences in how farmers are disposing of their waste, with those in the Winnipeg North / Interlake region being less likely to burn, and more likely to use recycling or collection sites.

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Executive Summary

Attitudes towards waste disposal

Farmers consider responsible disposal of waste to be a highly important issue, with 98% agreeing that responsible disposal of agricultural waste is very important (79% strongly agreeing).

While a high portion generally agree that the agricultural industry is doing enough to ensure that there are responsible ways to dispose of their products, agreement is “moderate” with 42% strongly agreeing and 42% somewhat agreeing. Further, 15% disagree (5% strongly and 10% somewhat) that the industry is doing enough.

One in five farmers have waste materials on their farm of which they are unsure of how to safely dispose.

About six in ten farmers say they are not comfortable burning or putting certain wastes in the landfill, but don't see an alternative. This seems to indicate a significant level of engagement and concern about this issue.

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Executive Summary

Container recycling – awareness of collection program and disposal methods

Among those farmers who generate 10L size-range containers, 94% are aware that there is a collection and recycling program for these containers.

Concerning how they dispose of their empty 10L containers, 92% take at least some of their containers to a collection site.

About two in ten (17%) reuse some of their containers. Another 13% burn some of their containers (although a very small portion say this is the primary way they dispose of their containers).

Over two-thirds (67%) percent of Manitoba farmers return 100% of their jugs. However, one-third return less than 100%. Only 7% don't return any, and this number may be even lower, based on some of these farmers indicate that they do take their jugs to their retailer (apparently not considering this to be "recycling."

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Executive Summary

Including all farmers who generate these jugs and considering those who don't return any as well as those who return some or all, survey results indicate that on average, 89% of jugs are returned.

Those whose operations are "primarily livestock" but who do generate 10L containers on their operation, are less likely to return empty containers. We would expect, however that these type of operations might typically produce fewer containers.

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Executive Summary

Container recycling – what motivates farmers to return their containers?

Just over a third of farmers who return their containers are primarily motivated by a desire to be environmentally responsible – they feel that returning containers is just “the right thing to do.” Another 8% cite a related reason of liking the idea of recycling and making something new out of the used materials.

Just over a quarter return their containers because it is simple for them to do so. Basically, it is more convenient to return the containers than to do anything else with them.

About one in five return their containers because it cleans up the farm and frees up space. Further, a very high portion agree that the greatest benefit of recycling is a clean yard and farm.

About one in ten want the containers off their farm due to safety concerns.

There is a group who say they return their containers because they don’t like the alternative of burning (10%) or putting them in the landfill (4%). Only a small portion of farmers are motivated to return their containers out of a feeling of compulsion or fear of breaking the law (3%).

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Executive Summary

Those who do not return 100% of their containers were asked why. Many of these indicate that they reuse some of their containers. Many of these are reusing some containers for holding oil, fuel or water, or storing other materials. Another smaller segment said they didn’t return some containers because it is easier to burn them, or there are too many containers to return them all, or they couldn’t get them clean.

Only 7% of farmers who generate 10 litre containers do not return any containers. Of this small number, the largest portion say that it is not convenient for them to return containers or that their collection site is too far away. Some of these actually do return their containers to a retailer (although they said they don’t return containers to a recycling or safe disposal location). Therefore, it is possible that the 7% figure is overstated and there are very few that don’t return any of their containers.

When asked what would encourage them to return more containers, the largest portion of respondents mentioned having closer or more convenient sites.

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Executive Summary

Analysis shows a strong correlation between distance to site and portion of containers returned: the closer the site, the higher the portion returned. Among those whose site is 10 km away or closer (and who know where the site is), 93% of containers are returned.

A number of agree-disagree statements were read to respondents to measure attitudes related to container recycling. The statements with the highest level of agreement included:

- The greatest benefit of returning containers is a clean yard and a clean farm
- Returning and recycling containers demonstrates that you have good stewardship practices
- I have a pretty good system for collecting up my containers and returning them

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Executive Summary

Unwanted or obsolete pesticides

About 31% of respondents generate unwanted pesticides in a typical year or have unwanted pesticides on their operation. About half of farmers with unwanted pesticides say these pesticides are 3 years old or less.

The vast majority of farmers who have unwanted pesticides are aware of the pesticide collection program. Only 6% of all respondents have unwanted pesticides but are not aware of the program.

When asked how often they would accumulate enough unwanted pesticides that they would want to dispose of them, about one-third indicated that they would want to dispose of unwanted pesticides every 2 to 3 years, while another third said every 4 to 5 years, and only 9% said every year.

We estimate Manitoba farmers have approximately 277,000 litres plus 900 kg of unwanted pesticide on farm. This is a midpoint of a range, and when we apply the margin of error to these numbers, we obtain a range of between 194,000 and 360,000 litres and 100 and 1,700 kg.

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Executive Summary

Communications

When asked where they are most likely to find out about recycling or safe disposal programs, the most common responses were: farm newspapers, radio, and brochures / flyers.

When asked to rate the usefulness of a list of information sources, farm newspapers and magazines were most highly rated, followed by crop input retailers. Other farmers are also seen to be a useful source of information.

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CleanFARMS
Manitoba Farmer
Survey

Discussion and
Implications

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Discussion and Implications

Which waste materials are best candidates for increased disposal alternatives?

This survey did not address volume, so there may be some materials that are a problem, even though a comparatively low portion of farmers have them. The survey did not take into account the toxicity or harmfulness of particular materials ending up in landfill or being burned, so again, even if there is a low portion of farmers with certain materials, there may be other reasons to consider a particular material a priority.

Based on the more prevalent waste materials, combined with looking at how these items are disposed of, it appears that a disposal program is more urgently needed for:

- Plastic oil and antifreeze containers - a high portion has them, and over 40% get burned or put in landfill
- Empty seed bags - a high portion has, and a high portion gets burned or put in landfill
- Plastic wrap or packaging - a high portion has, and most gets put in landfill or burned

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Discussion and Implications

- Cardboard packaging from pesticides and other products - a high portion has, and a high portion gets burned
- Twine or net wrap - a high portion gets burned or put in landfill
- Sharps or needles – a lower portion has, but a high portion gets put in the landfill
- Styrofoam packaging – over three-quarters ends up in landfill or being burned
- Empty feedbags – a lower portion has, but a high portion gets burned or put in the landfill
- Plastic wrap from hay or silage bags – a lower portion has, but two-thirds of farmers burn it
- Empty plastic livestock disinfectant containers and unwanted animal pharmaceuticals – over 40% is burned or put in landfill

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Discussion and Implications

Farmers specifically mention being concerned about disposing of plastic wraps and twine, two of the materials identified above. Canola seed, treated seed, and fertilizer were also mentioned by a small portion as materials they are unsure how to safely dispose of.

Those with livestock operations have specialized needs, including the need to responsibly dispose of plastic bale and silage wrap, plastic disinfectant and cleaning containers, sharps and needles and pharmaceuticals. They are also more likely to have pesticide containers stored on their operation (i.e., they are less likely to return all their pesticide containers. Therefore this might be a particular segment that could be targeted through specific communications or programs.

Farmers have a high level of concern for responsible disposal of waste agricultural products, and it appears they would be open to disposal programs that are convenient and accessible.

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Discussion and Implications

Container recycling

The survey results suggest that 89% of jugs are returned. For those farmers who return some but not all containers, it appears that many are using the empty containers for other purposes. To get these last few jugs returned, communications around the theme of “every last bit is important” may be effective.

For farmers who don’t return jugs, distance from collection point appears to be the main issue. It is significant that the closer the collection point, the higher the portion of jugs returned, so in areas where distance is an issue, consideration should be given to setting up alternative collection points. Possibly, a periodic mobile collection option could also be considered.

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Discussion and Implications

There are some strong intangible motivators for returning containers – including the motivation to “do the right thing” and take care of the environment. Combined with this is the preference for making something new out of waste items, not wanting to burn or increase the landfill, and safety concerns. As far as rational motivators, the practical aspect of cleaning up the farm and getting the containers out of the way is the third most commonly mentioned reason for recycling, so is a relatively important tangible driver.

Awareness of the container recycling program does not appear to be an issue, as the vast majority are aware of the program and of the location of collection sites near them.

Aside from ensuring that there is a convenient collection point close to all farmers, there were only a few other suggestions as to how to increase participation – including allowing farmers to return containers “as is” or having some kind of deposit or incentive. A very low portion suggested these ideas.

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Discussion and Implications

For a few, there is an issue of not being able to get the container clean, with some saying that they would be more likely to return containers if CleanFARMS would take the containers as is. Perhaps there really are certain pesticides that are extremely difficult to rinse completely out of containers – perhaps the program could be modified to accept the containers in some cases.

It appears that there is sufficient communication about the container recycling program, and this was not cited as a reason for not returning containers.

As the issue of stewardship comes more and more into the public eye, with attention to EPA, it is likely that farmers will feel greater responsibility to recycle as many jugs as possible.

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Discussion and Implications

Pesticide Collection

About 31% currently have unwanted pesticides on their farm, and about half of of these are under three years old, while half are older. This may warrant another collection program within the next year or two. Most farmers thought a program should be held every 2 – 3 years or every 4 – 5 years.

The results show that most growers who generate unwanted pesticides know about the pesticide collection program. It appears that most are willing to use the program, and the primary reason that they don't return the pesticides is that they think they might eventually use the pesticides.

CleanFARMS could also develop an ongoing process to track need – perhaps a “registry” where farmers could go to indicate that they have unwanted pesticide (perhaps this is already done). Farmers could update their entries from year to year, if they end up using the pesticide. In this way, CleanFARMS would have an ongoing “inventory” of unwanted pesticide and a way of gauging when it is time to run the program again.

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Discussion and Implications

Communications

For future communications about recycling and safe disposal programs, farm publications would be most effective. Ensuring that retailers know all the disposal options is also key, as they are considered to be among the most useful sources.

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CleanFARMS Manitoba Farmer Survey

Introduction

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Introduction and Objectives

This document presents the results of a survey of Manitoba farmers, conducted in November 2010. The overall purpose of the research was to gain insight into farmers' behaviours and attitudes related to agricultural waste and recycling, in order to build a base of knowledge to help meet CleanFARMS' objectives. More specifically, this research set out to:

- Understand what agricultural wastes need to be managed, and how farmers currently dispose of / recycle specific waste products
- Determine farmer's awareness and attitudes towards pesticide container recycling program, to provide input into what action is required to achieve 80 per cent container return rate
- Examine the need for another wave of the obsolete collection program
- Explore information sources and preferences

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Introduction and Objectives

To address these research objectives, a quantitative telephone survey was undertaken, targeting 300 farmers in Manitoba. The survey was conducted in November 2010.

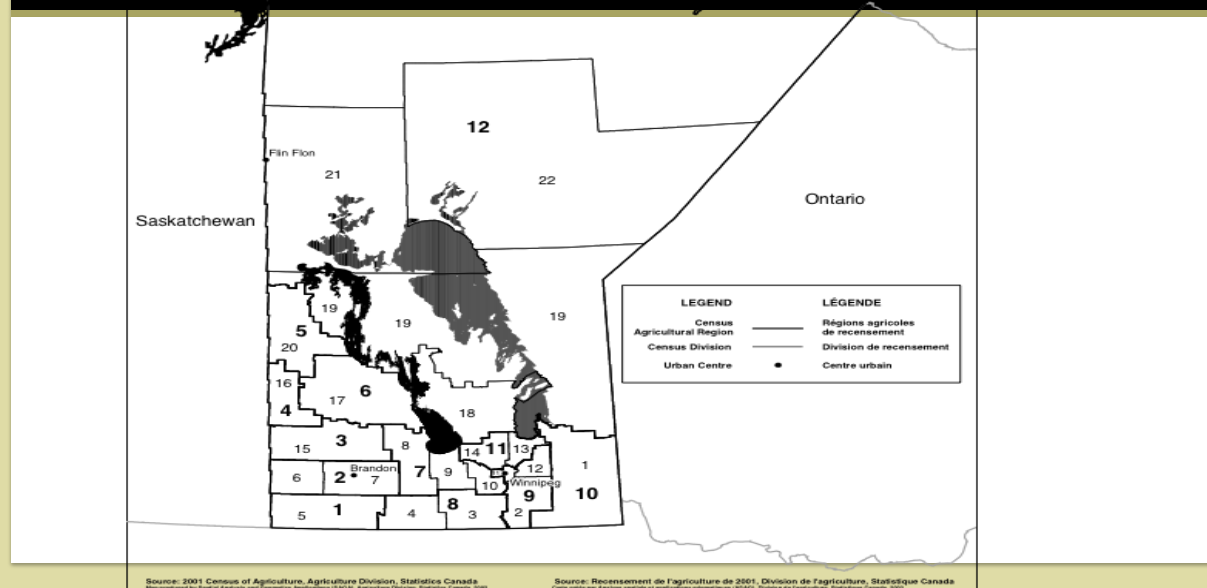
The survey targeted a representative distribution of farmers from all growing areas in Manitoba. We weighted the final data to ensure that the results are truly representative based on 2006 Census data. Following are both the weighted and un-weighted distribution by census agricultural region.

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Regional distribution

N=300	Weighted	Un-weighted
Southwest (CAR 1, 2)*	17%	22%
Northwest (CAR 3 – 6)	26%	32%
South Central (CAR 7, 8)	26%	25%
Southeast (CAR 9, 10)	16%	11%
Winnipeg north and Interlake (CAR 11, 12)	16%	10%

* See Census Ag Region reference map on the following slide



Accuracy of this research

A total sample of 300 out of a population of 15,628 Manitoba farms (2006 Census) provides an overall level of accuracy of +/- 5.6% at the 95% confidence level. This means that for a given result, we can be 95% confident that the survey result is within 5.6% of the "true" result if we had done a census of the entire population. The margin of error is at its widest for a result of 50%, and is narrower for percentages above or below 50%.

On a regional level and based on farm type, the accuracy ranges from +/- 9% to +/- 12% at the 95% level. Differences between regions, farm type and farm size were analyzed, and where these differences are statistically significant and notable, they are described in this report.

Comparisons to previous research

Some of the survey results are compared to a similar survey that was conducted in the spring of 2009. This was a survey of prairie farmers, with a relatively small sample in Manitoba. Where appropriate, we draw some comparisons between the two measures. For the most part, the 2009 and 2010 measures were very similar.

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Respondent Profile

As seen on the following slide, about half of respondents had crop only operations, while 40% had mixed operations, and just over 10% had primarily livestock operations.

Acreage ranges from 15 to 10,000, with average acreage being 1,420.

Just over half had livestock. Among those with livestock:

- 83% have cow/calf (average 160 head)
- 5% have dairy (average 161 head)
- 7% have hogs (average 980)
- 5% have poultry (average 11,600)

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Respondent Profile

Farm type	
Crops only	49%
Mixed crops and livestock	39%
Primarily livestock	12%
Farm size	
<1000 acres	51%
1000 – 2499	34%
2500 – 4999	12%
5000+	3%

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Survey

Agricultural Waste

Types of agricultural waste on farms

A list of various types of agricultural waste was read to respondents, and they were asked whether they typically generate each type of waste in an average year, and / or currently have that type of waste on their farm.

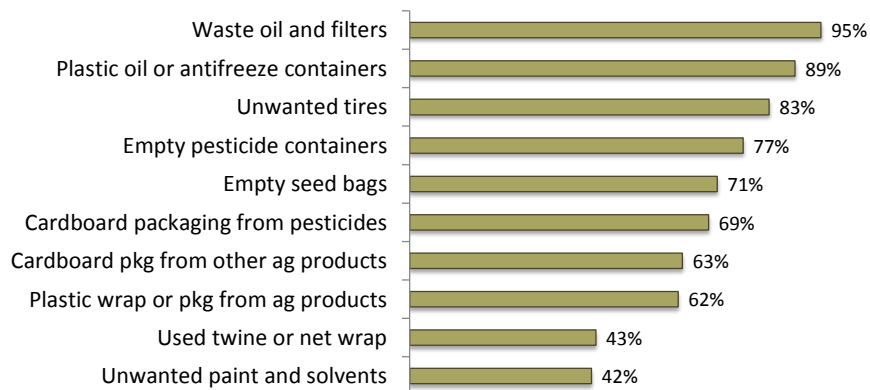
Respondents were asked to consider only agricultural waste, as opposed to household waste.

The following slides show the portion of farmers who generate or have each type of waste. We see that waste oil and filters, and plastic oil or antifreeze containers are the most common types of waste generated, followed by unwanted tires, 10L size-range (under 23L) pesticide containers, and empty seed bags.

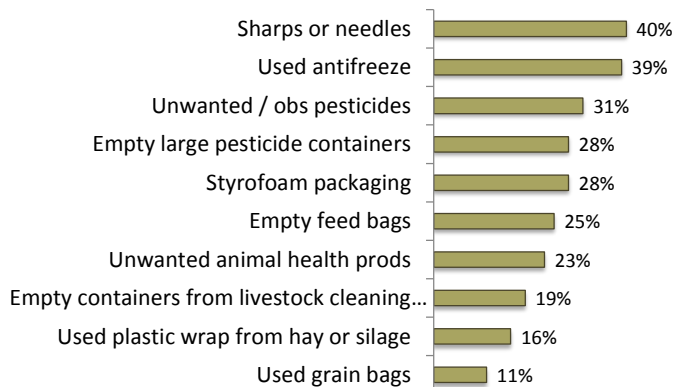
The 2009 study addressed the extent to which farmers use large drums and totes. In that study, 21% of Manitoba farms used these large containers. In 2010, the current study found that 28% use drums and totes.

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Types of farm waste generated



Types of farm waste generated (cont.)



Types of agricultural waste on farms – segment differences

As seen on the following slides, there are some differences in the portion of farmers who have each type of waste material. The most notable differences are based on acreage, with farmers with 5000 or more acres more likely to have waste oil and filters and unwanted tires, and those with 2500 or more acres more likely to have 10 L pesticide containers and their cardboard packaging, empty feedbags, unwanted pesticides and large containers (totes, drums).

This information would be important in determining where certain types of waste material are more prevalent and in which sectors, to aid in setting priorities and developing processes for waste collection.

Segments more and less likely to generate each type of waste

N=300	Percent who have	Who is more likely to generate or have on farm?	Who is least likely to generate or have on farm?
Waste oil and filters	95%	5000+ acres	No significant differences
Plastic oil or antifreeze containers	89%	No significant differences	No significant differences
Unwanted tires	83%	5000+ acres	No significant differences
10 litre size range containers	77%	1000+ acres and especially those with 2500+ acres	Livestock only
Empty seed bags	71%	2500+ acres	Livestock only
Cardboard packaging from pesticides	69%	South-Central MB, 2500+ acres, primarily crops	WPG North and Interlake, livestock only

Continued...

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Segments more and less likely to generate each type of waste

N=300	Percent who have	Who is more likely to generate or have on farm?	Who is least likely to generate or have on farm?
Cardboard packaging from other ag products	63%	No significant differences	No significant differences
Plastic wrap or packaging from ag products	62%	Mixed crops and livestock	Livestock
Used twine or net wrap	43%	SW MB	SE MB
Paint and solvents	42%	No significant differences	No significant differences
Sharps or needles	40%	No significant differences	No significant differences
Used antifreeze	39%	No significant differences	No significant differences
Unwanted pesticides	31%	2500+ acres	Livestock only

Continued...

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Segments more and less likely to generate each type of waste

N=300	Percent who have	Who is more likely to generate or have on farm?	Who is least likely to generate or have on farm?
Drums, totes, shuttles	28%	2500+ acres,	< 1000 acres, livestock
Styrofoam	28%	No significant differences	No significant differences
Empty feed bags	25%	No significant differences	No significant differences
Animal health products	23%	No significant differences	No significant differences
Empty containers from livestock cleaning products	19%	No significant differences	No significant differences
Used plastic wrap from silage or hay bales	16%	SW MB	SE MB
Used grain bags	11%	No significant differences	No significant differences

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How do farmers dispose of their agricultural waste?

The following series of slides show how farmers dispose of their agricultural waste, through a pie chart showing the portion who dispose of their waste in each way.

The pie slices are colour-coded, so that the same colour always shows the same method of disposal, for easier comparison between types of waste.

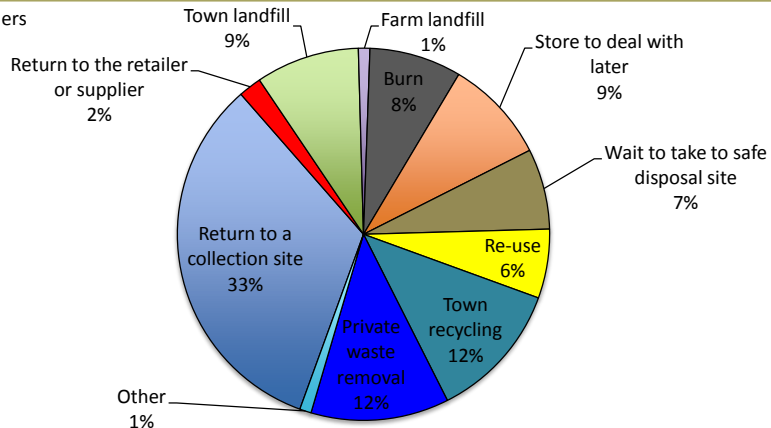
Farmers were asked how they dispose of each type of agricultural waste that they have on their farm and were also read a list of possible ways they might dispose of the waste. The order of the options was randomized for each respondent. The question was as follows:

I would like to ask you what you do with each of these waste materials that you have on your farm. For example, this could include (read and randomize): Return to a collection site for recycling or safe disposal, Return to the retailer or supplier, Take to the municipal or town landfill, Bury on farm, Burn on farm, Store or save to deal with later, Wait to take to a safe disposal site when one comes into your region, Re-use, Put into municipal or town recycling, or other.

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What is done with waste oil and filters?

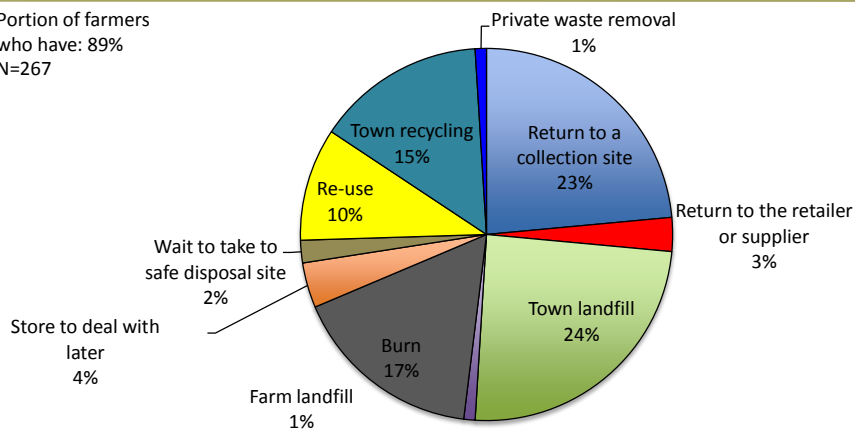
Portion of farmers
who have: 95%
N=285



43

What is done with plastic oil or antifreeze containers?

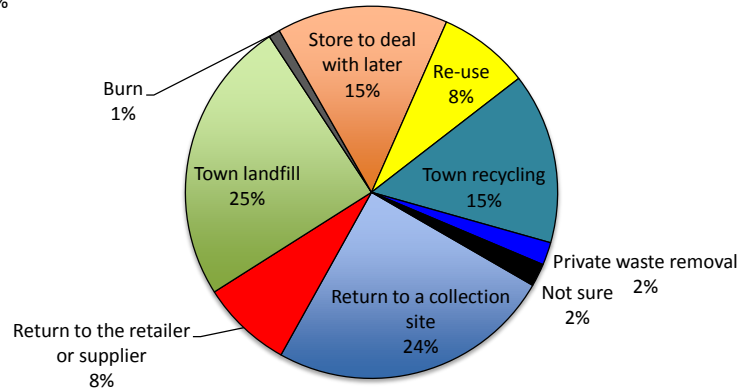
Portion of farmers
who have: 89%
N=267



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What is done with unwanted tires?

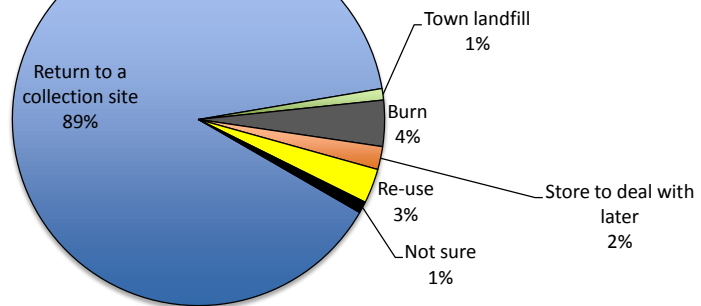
Portion of farmers
who have: 83%
N=249



45

What is done with empty 10L size-range containers?

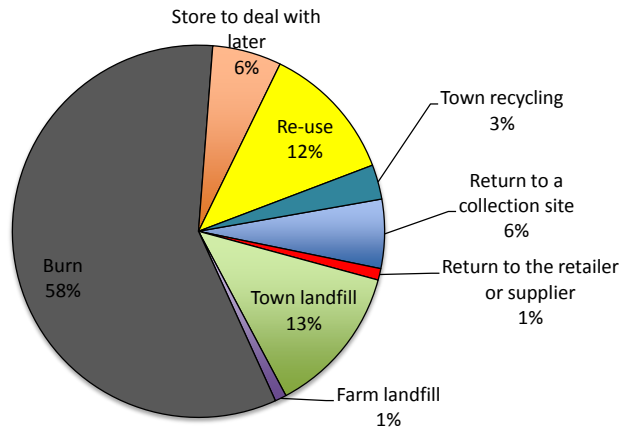
Portion of farmers
who have: 77%
N=231



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What is done with empty seed bags?

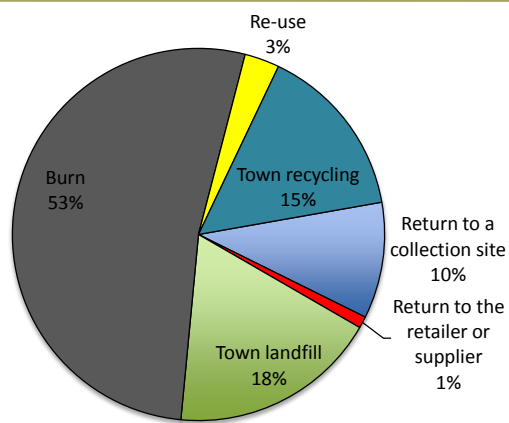
Portion of farmers
who have: 71%
N=213



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What is done with cardboard packaging from pesticides?

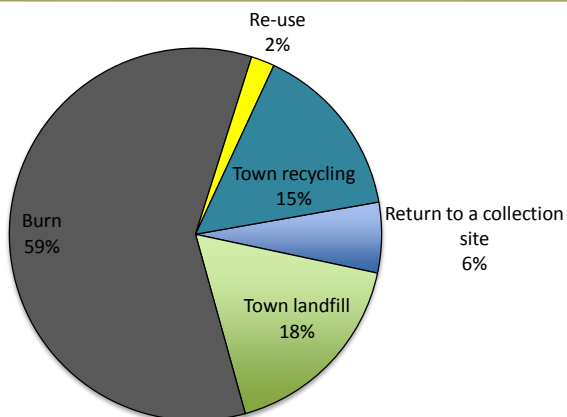
Portion of farmers
who have: 69%
N=207



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What is done with cardboard packaging from other ag products (not pesticides)?

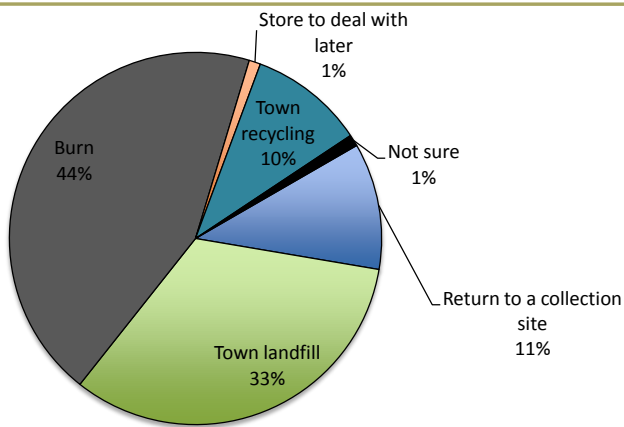
Portion of farmers
who have: 63%
N=189



49

What is done with plastic wrap or packaging from ag products?

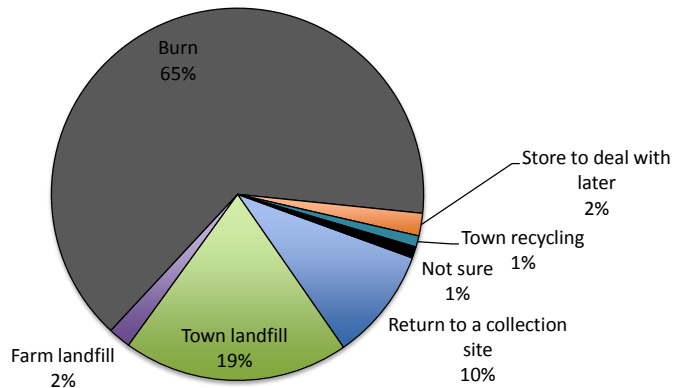
Portion of farmers
who have: 62%
N=186



50

What is done with used twine or net wrap?

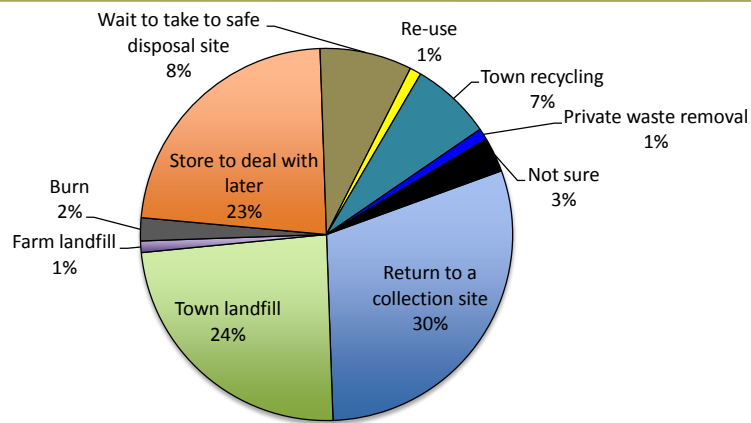
Portion of farmers
who have: 43%
N=129



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What is done with unwanted paint and solvents?

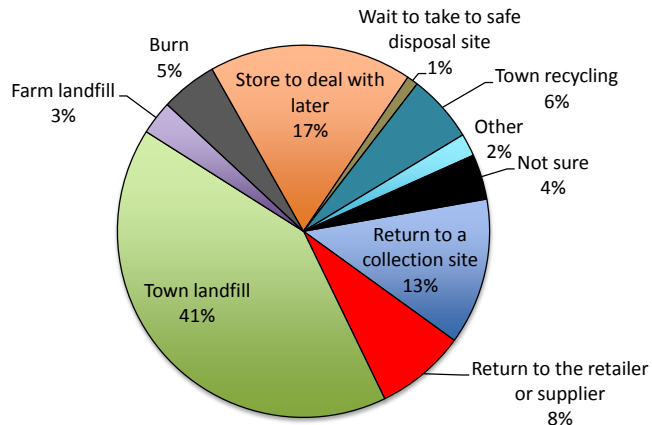
Portion of farmers
who have: 42%
N=126



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What is done with sharps or needles from livestock?

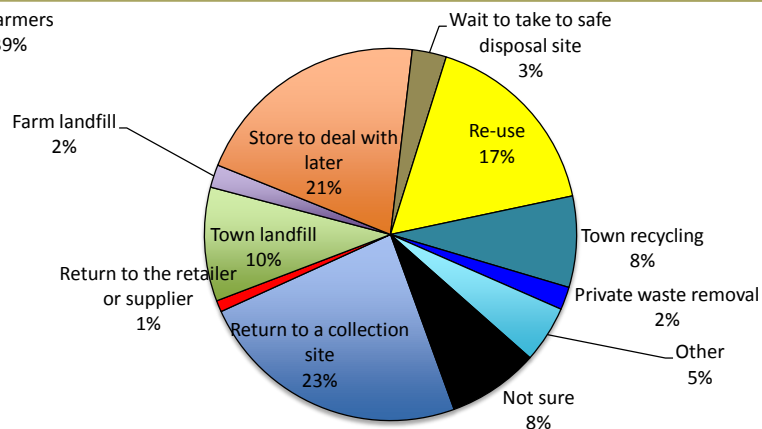
Portion of farmers
who have: 40%
N=120



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What is done with used antifreeze?

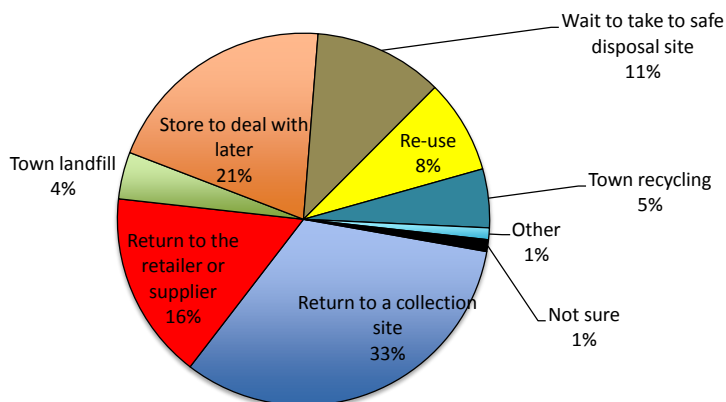
Portion of farmers
who have: 39%
N=117



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What is done with unwanted, old or obsolete pesticides?

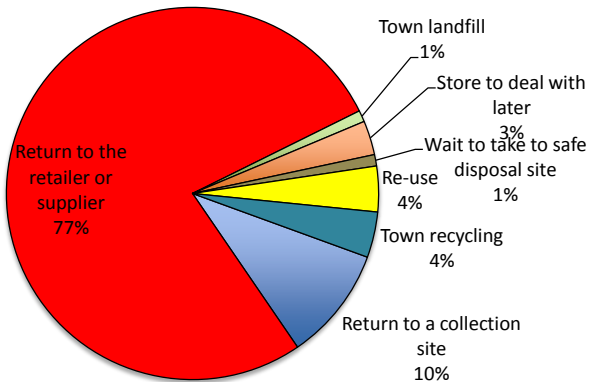
Portion of farmers
who have: 31%
N=93



55

What is done with empty large containers (totes, drums)?

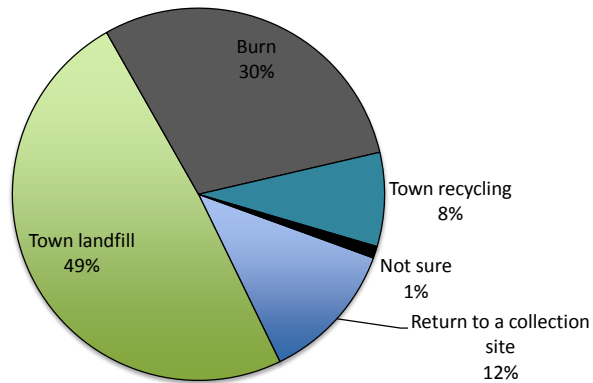
Portion of farmers
who have: 28%
N=84



56

What is done with Styrofoam packaging from ag products?

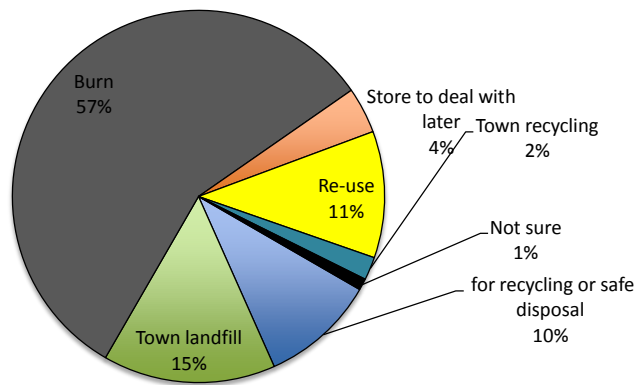
Portion of farmers
who have: 28%
N=84



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What is done with empty feed bags?

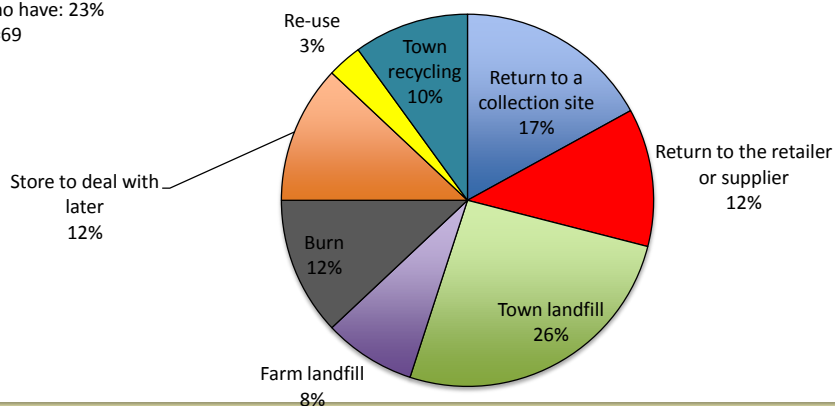
Portion of farmers
who have: 25%
N=75



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What is done with unwanted animal health products or pharmaceuticals?

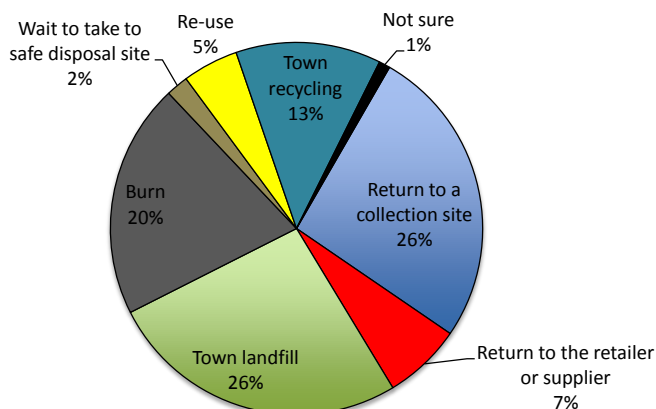
Portion of farmers
who have: 23%
N=69



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What is done with empty plastic livestock disinfectant product containers?

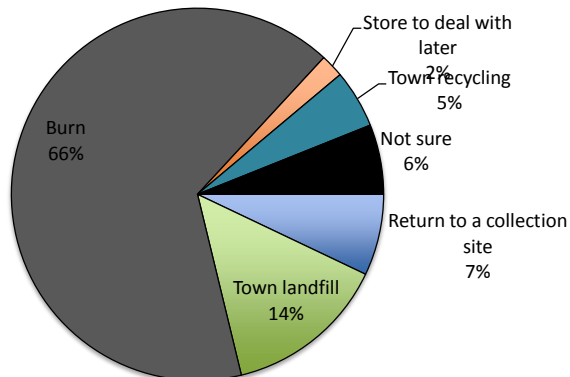
Portion of farmers
who have: 19%
N=57



60

What is done with plastic wrap from silage or hay bales?

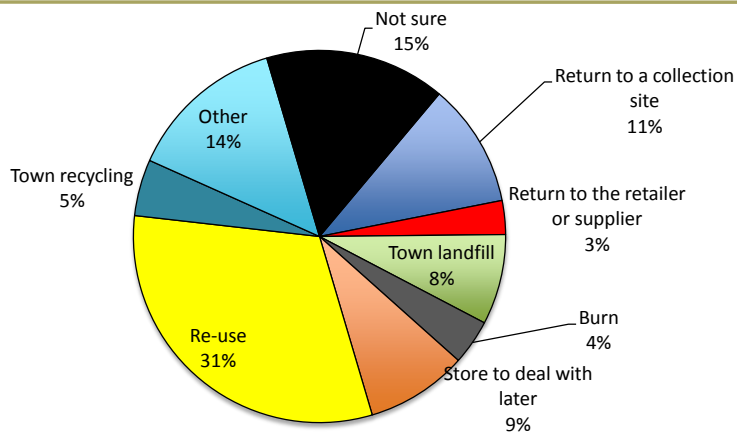
Portion of farmers
who have: 16%
N=48



61

What is done with used grain bags

Portion of farmers
who have: 11%
N=33



62

Summary – main ways farmers dispose of each waste material

N=300	Percent who have	Main ways they dispose of this material (Percent of farmers who mention first)
Waste oil and filters	95%	Collection site (33%), town recycling (12%), private waste removal (12%), town landfill (9%), burn (8%)
Plastic oil or antifreeze containers	89%	Town landfill (24%), collection site (23%), burn (17%), town recycling (15%)
Unwanted tires	83%	Town landfill (25%), collection site (24%), town recycling (15%), store to deal with later (15%)
10 litre size range containers	77%	Return to a collection site (89%)
Empty seed bags	71%	Burn (58%), town landfill (13%)
Cardboard packaging from pesticides	69%	Burn (53%), town landfill (18%), town recycling (15%)

Continued...

63

Summary – main ways farmers dispose of each waste material

N=300	Percent who have	Main ways they dispose of this material (Percent of farmers who mention first)
Cardboard packaging from other ag products	63%	Burn (59%), town landfill (18%), town recycling (15%)
Plastic wrap or packaging from ag products	62%	Burn (44%), town landfill (33%), collection site (11%)
Used twine or net wrap	43%	Burn (65%), town landfill (19%)
Paint and solvents	42%	Collection site (30%), town landfill (24%), store to deal with later (23%)
Sharps or needles	40%	Town landfill (41%), store to deal with later (17%), collection site (13%)
Used antifreeze	39%	Collection site (23%), store to deal with later (21%), reuse (17%)

Continued...

64

Summary – main ways farmers dispose of each waste material

N=300	Percent who have	Main ways they dispose of this material (Percent of farmers who mention first)
Unwanted pesticides	31%	Collection site (33%), store to deal with later (21%), return to supplier (16%), wait to take to collection site (11%)
Drums, totes, shuttles	28%	Return to retailer (77%)
Styrofoam	28%	Town landfill (49%), burn (30%)
Empty feed bags	25%	Burn (57%), town landfill (15%)
Animal health products	23%	Town landfill (26%), Collection site (17%), return to supplier (12%), burn (12%), store to deal with later (12%)

Continued...

65

Summary – main ways farmers dispose of each waste material

N=300	Percent who have	Main ways they dispose of this material (Percent of farmers who mention first)
Empty containers from livestock cleaning products	19%	Town landfill (26%), collection site (26%), burn (20%)
Used plastic wrap from silage or hay bales	16%	Burn (66%) Town landfill (14%)
Used grain bags	11%	Reuse (31%), not sure (15%), collection site (11%), store to deal with later (9%)

66

Summary of possibly detrimental methods of disposal

Following are the waste materials that may be being stored or disposed of in less than ideal and potentially hazardous ways:

- Storing on farm – having some products stored on farm may create hazards such as fire, leakage, etc. The materials with the highest portion storing them on farm include: sharps and needles, antifreeze, pesticides, paints and solvents, unwanted tires
- Burning – The materials with the highest portion burning them include: seed bags, plastic wrap, cardboard packaging, twine or net wrap, feed bags, plastic silage and bale wrap, Styrofoam packaging
- Farm or town landfill – plastic oil or antifreeze containers, tires, plastic wrap and packaging, paints and solvents, sharps or needles, Styrofoam packaging, animal health products, livestock disinfectant containers

67

Differences between segments in how they dispose of waste

The following differences are seen in responses between the various regions or farm types:

- 100% of respondents in Winnipeg North and Interlake return their empty large totes and drums to the supplier or retailer.
- Farmers in NW Manitoba are more likely to take their cardboard pesticide containers to the landfill, whereas those in South Central and SE Manitoba are more likely to burn them.
- Those in Winnipeg North and Interlake are less likely to burn cardboard containers (for pesticides or other ag products) and more likely to put them into town recycling. They are also less likely to burn Styrofoam and more likely to put it in the town landfill. They are less likely to burn empty feedbags and used twine or net wrap. They are also more likely to return used antifreeze and waste oil and filters to a collection site.

Continued...

68

Differences between segments in how they dispose of waste

- Farmers in South Central Manitoba are more likely to burn their cardboard containers from pesticides and other ag products.
- Those in SW Manitoba are more likely to burn plastic wrap from ag products.
- Those in Western Manitoba (SW and NW) are more likely to take unwanted tires to the town landfill.
- Farmers in South Central Manitoba and those with over 5000 acres are more likely to have a private waste removal service take their waste oil and filters.

The regional differences may reflect differing levels of public pressure or municipal regulations regarding burning. They may also reflect differing access to municipal facilities.

69

Attitudes towards responsible disposal of agricultural waste

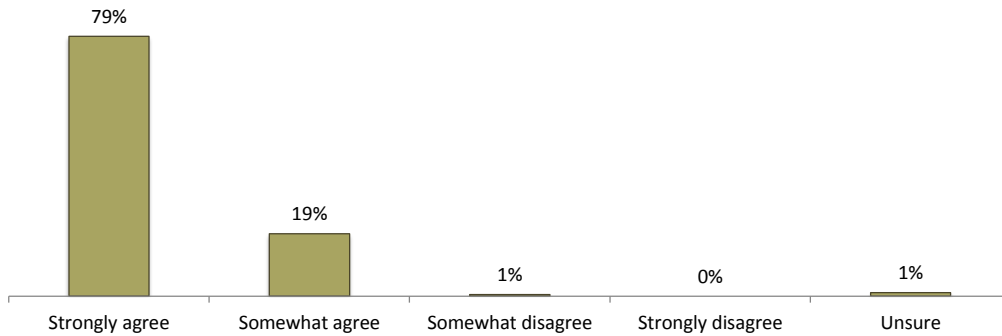
Respondents were asked a series of agree-disagree questions to explore their attitudes about disposal of agricultural waste. As seen on the next two slides:

- Farmers consider this to be a highly important issue, with 98% agreeing that responsible disposal of agricultural waste is very important, and 79% strongly agreeing.
- While a high portion generally agree that the agricultural industry is doing enough to ensure that there are responsible ways to dispose of their products, agreement is “moderate” with 42% strongly agreeing and 42% somewhat agreeing. Further, 15% disagree (5% strongly and 10% somewhat) that the industry is doing enough.
- One in five farmers have waste materials on their farm of which they are unsure of how to safely dispose.
- About six in ten farmers say they are not comfortable burning or putting certain wastes in the landfill, but don’t see an alternative. This seems to indicate a significant level of engagement and concern about this issue.
- We do not see any differences in these attitudes, based on region, farm size or type of farm.

70

Attitudes towards responsible disposal of agricultural waste

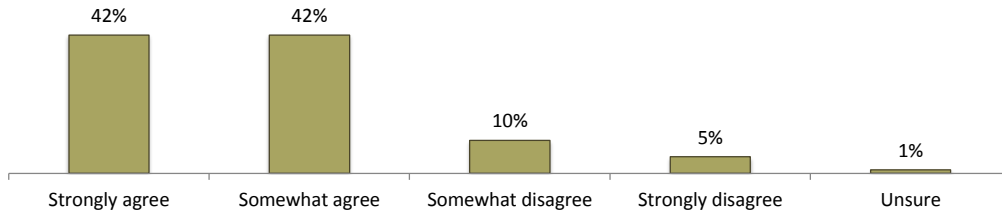
Responsible disposal of agricultural waste is very important to me (N=300)



71

Do farmers think industry is doing enough?

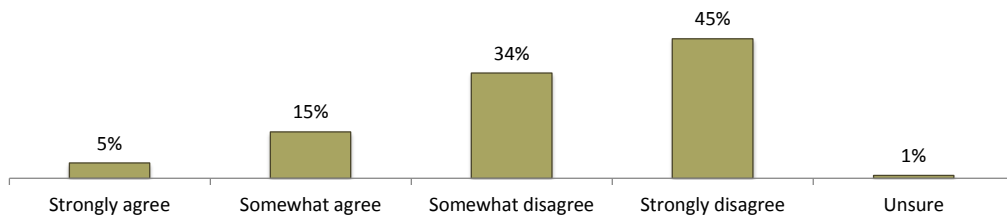
The agricultural industry is doing enough to ensure there are responsible ways to dispose of the waste from their products (N=300)



72

Do farmers have waste that they don't know how to dispose of safely?

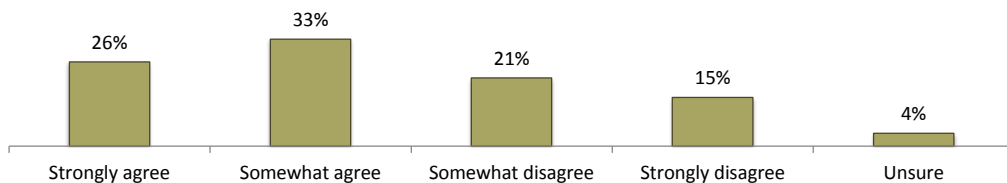
I have a lot of waste materials around my farm that I am unsure of how or where to safely dispose of (N=300)



73

Do farmers see alternatives to landfill or burning?

I am uncomfortable burning or putting certain products in my own or other landfills, but don't see any alternative (N=300)



74

Do farmers have materials they don't know how to dispose of?

About a quarter (24%) of farmers mentioned specific waste materials that they are not sure how to safely dispose of. Respondents mentioned a variety of materials that they are concerned about, with 3% - 4% mentioning each of

- Plastic wrap
- Twine
- Treated seed / fertilizer / canola seed
- Pesticides
- Antifreeze
- Paint and solvents

75

Do farmers have materials they don't know how to dispose of?

Do you have any material on your farm that you are concerned about recycling or safely disposing of, or that you are unsure of how to dispose of? (N=300) *

Plastic wrap and film, silage wrap, bale wrap	4%
Twine	4%
Canola seed, fertilizer, treated seed	4%
Chemicals, pesticides	3%
Antifreeze	3%
Paint and solvents	3%
Oil	2%
Tires	2%
Containers	2%
Animal health items	1%
Oil filters	1%
Other	2%
Nothing, no concerns, don't know	76%

* Percentages add to more than 100, as respondents could give more than one response

76

CleanFARMS Manitoba Farmer Survey

Container Recycling

77

Awareness of Container Recycling Program

Among those farmers who generate 10L size-range containers, 94% are aware that there is a collection and recycling program for these containers. This is up slightly from a 2009 survey that showed that 88% of Manitoba respondents were aware of the program.

Of these, 95% know where they can take their containers (similar to the portion in 2009).

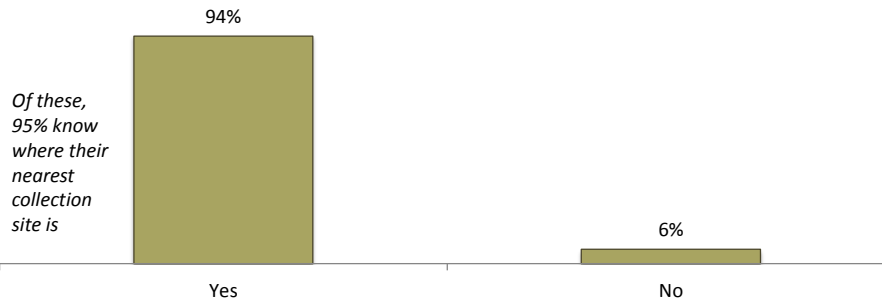
Most (93%) have 25 km or less to drive to get to their collection site, while another 7% have to drive 26 – 50 km. The vast majority (93%) feel that their collection site is a reasonable distance away.

- There are no statistical significant regional differences in how far there is to drive to the container recycling depot.

78

Awareness of container recycling program

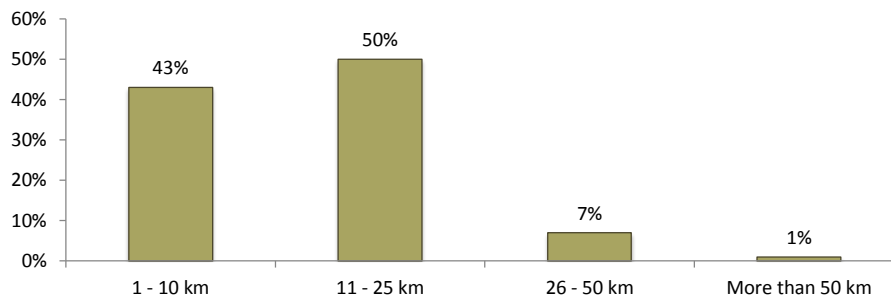
Before now, were you aware that there is a collection and recycling program for these containers? (N=230, those who generate containers)



79

Distance to drive to return containers

About how far would you have to drive to return containers? (N=202, those who have containers and know where their collection site is)



80

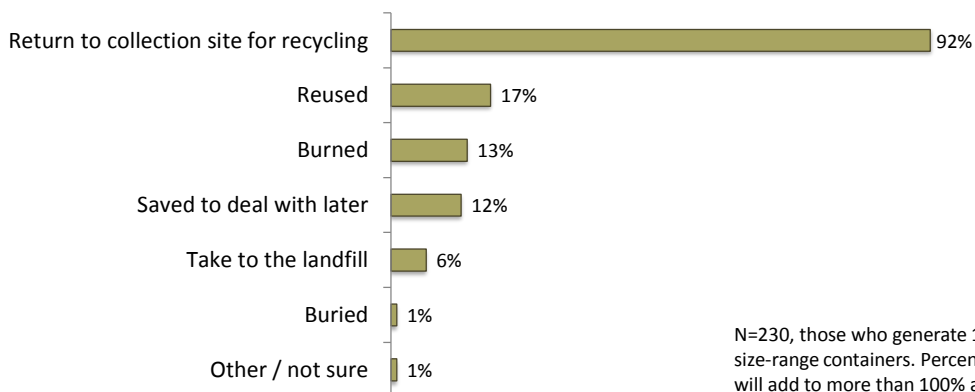
How are 10 litre containers disposed of?

As seen on the following two slides:

- 92% of farmers return at least some containers to a collection site. This does not differ from the results of the 2009 survey.
- About 12% of farmers save up some of their containers to deal with later.
- Seventeen percent (17%) of farmers reuse some of their containers, up from 7% in 2009.
- About 13% burn some of their containers. This is similar to the portion in the 2009 study.
- Some containers also get taken to the landfill, with about 6% of farmers saying they do this with some containers.
- The PRIMARY way that farmers deal with their containers, or the way they mention first, is to take them to a collection site, with 89% saying this is the main way (this is identical to the 2009 result). Only small portions say the primary way the deal with their containers is to bury or burn them, and this has not changed since 2009.

81

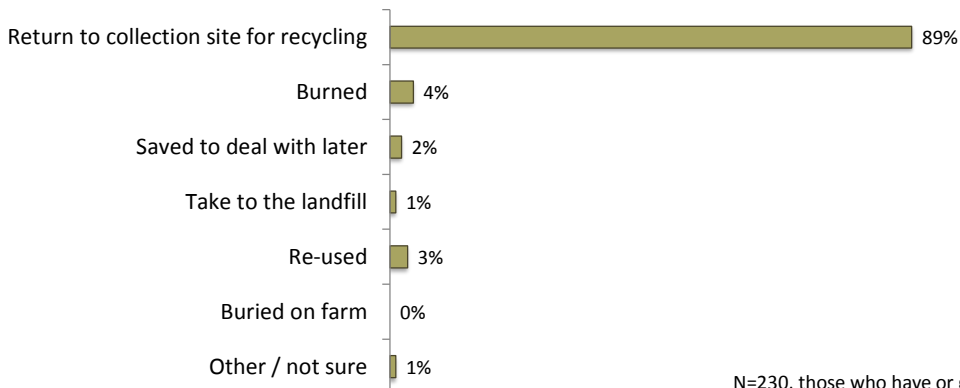
Various ways that farmers dealt with their containers over the past year (total mentions)



N=230, those who generate 10L size-range containers. Percentages will add to more than 100% as multiple responses were allowed

82

Main way that farmers dealt with their containers over the past year (first mention)



N=230, those who have or generate 10L size-range containers

83

What motivates farmers to take their containers to be recycled?

The following slide shows that over a third (35%) of farmers who return their containers are primarily motivated by a desire to be environmentally responsible – they feel that returning containers is just “the right thing to do.” Another 8% cite a related reason of liking the idea of recycling and making something new out of the used materials.

About a quarter (26%) return their containers because it is simple for them to do so. Basically, it is more convenient to return the containers than to do anything else with them.

About one in five return their containers because it cleans up the farm and frees up space.

About one in ten want the containers off their farm due to safety concerns.

There is a group who say they return their containers because they don’t like the alternative of burning (10%) or putting them in the landfill (4%).

Only a small portion of farmers are motivated to return their containers out of a feeling of compulsion or fear of breaking the law (3%).

84

What motivates farmers to take their containers to be recycled?



N=211, those who have returned containers for recycling

85

Sample comments – reasons why farmers recycle containers

Environmentally responsible

"Clean up the earth and its a good thing to do."

"I feel responsible for it."

"Makes good sense for environment."

Easy, close, available

"I know they take them, it's right there in town."

"Just as easy to take them there as to deal with them yourself."

"There is a recycling site nearby, this seems the most logical way to dispose of them"

86

Sample comments – reasons why farmers recycle containers

Free up space, clean up the farm

“We like a clean yard.”

“Don't like to see them lying around - makes sense.”

“Don't like a big mess in the yard, so we get rid of them the right way.”

Not safe, hazardous, toxic

“It's the proper thing to do, they can be poisonous.”

“I just don't want them around my kids.”

“I don't want to pollute the land or bush.”

87

Sample comments – reasons why farmers recycle containers

Better than burning

“Better than burning no toxic fumes in the air.”

“Just don't like the idea of putting them up in smoke and don't want it going up in the air.”

“It is a hassle to burn them...more simple to throw them in the truck and take them over there.”

Like the idea of re-using, recycling

“So they can be recycled and used for something good.”

“Be reused to make something new rather than just take up space.”

“It's the clean way of doing it. They will get reused for something.”

88

Portion of containers recycled

As seen previously, three-quarters of farmers in Manitoba generate 10L size-range plastic pesticide containers on their farms.

- Of these farmers, we saw that 92% return at least some jugs for recycling.

We asked farmers about what portion of their jugs they return for recycling.

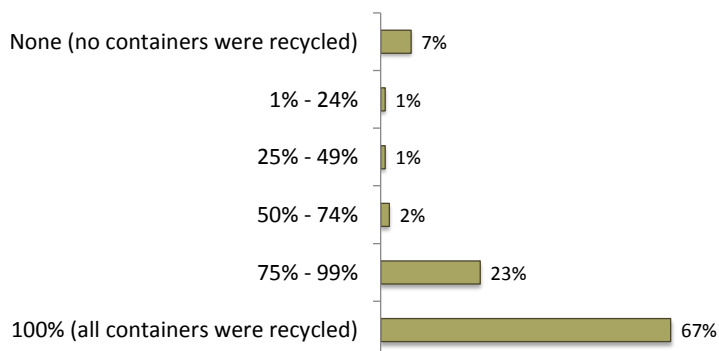
Including all farmers who generate these jugs and considering those who don't return any as well as those who return some or all, on average 89% of jugs are returned.

As seen on the following slide, just over two-thirds (67%) of Manitoba farmers return 100% of their jugs. However, about a third return less than 100%, and 7% don't return any.

These results do not differ significantly from 2009 prairie-wide results, in which it was estimated that 86% of containers were returned (across the prairies), 60% returned all of their containers, and 4% didn't return any.

89

Portion of containers recycled



N=228, those who generate 10L size-range containers

90

Which segments are more or less likely to return containers?

Those whose operations are “primarily livestock,” but who do generate 10L containers on their operation, are less likely to return empty containers. About 44% return 100% of their containers (compared to the 67% average). We would expect, however that these type of operations might typically produce fewer containers.

There are no other significant differences based on region, age or farm size.

91

Why do farmers who return some containers not return 100% of their containers?

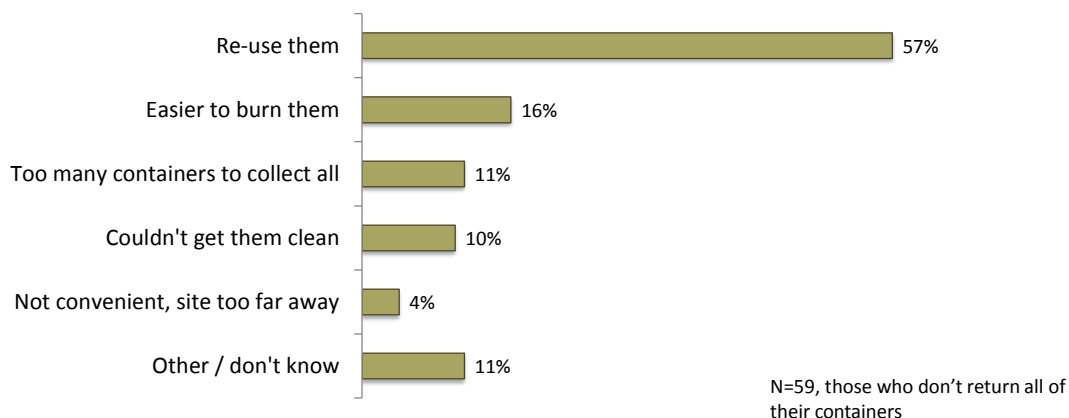
Those who do not return 100% of their containers were asked why. About six in ten who don't return all their containers (57%) say that they reuse some of their containers.

Another 16% said they didn't return some containers because it was easier to burn the containers than return them, while 11% said there were too many containers to return them all.

A small number gave other responses, with several of these saying that some of the containers still have pesticide in them that might be used in the future.

92

Why do farmers who return some containers not return 100% of their containers?



93

What are containers re-used for?

With "reuse" being the main reason that not 100% of containers are returned, we looked into the responses as to what they are being used for. Following are some of the responses:

- Holding oil or fuel
- Still have pesticide in them / store other pesticides in them
- Use for other things
 - "Every once in a while we use as weights to hold tarps."
- Re-use, use for storage
- Holding water

94

Why do some farmers not return any containers?

Only 7% of those who generate 10 litre containers do not return any containers (a small sample size of 19 farmers).

Of this small number, the largest portion say that it is not convenient for them to return containers or that their collection site is too far away.

Some of these actually do return their containers to a retailer (although they said they don't return containers to a recycling or safe disposal location). Therefore, it is possible that the 7% figure is overstated and there are very few that don't return any of their containers.

95

What would encourage farmers to return more containers?

When those who return some containers but not all were asked what would encourage them to return more containers, the largest portion of respondents were uncertain what would motivate them to return more containers (recall that many of these are reusing the containers that they don't return).

Of those who do have a suggestion, the largest group (10%) mention having closer sites. This is echoed by those who don't return any containers – about 40% of those who don't return any containers mention that closer and more convenient sites would help them to return more containers.

Other suggestions, given by small portions of respondents, were to let farmers return the containers "as is," and a few others suggested on-farm pick-up or having an incentive to return containers, or taking the cardboard packaging along with the containers.

96

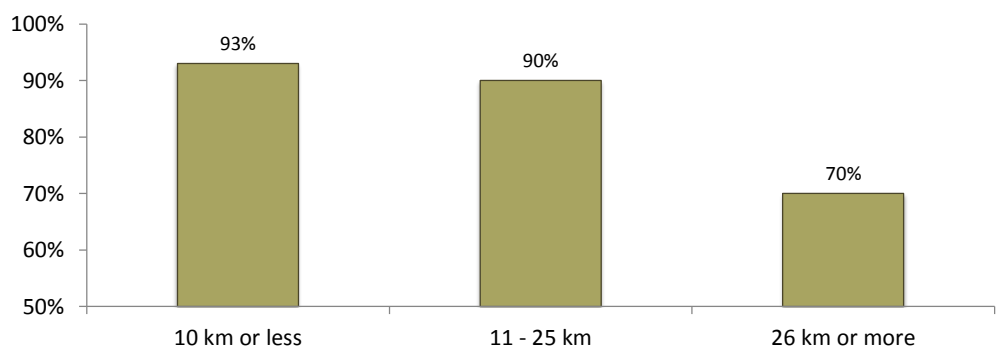
What would encourage farmers to return more containers?

The largest portion of suggestions relate to having closer or more convenient sites.

- This is supported by analysis showing a strong correlation between distance to site and portion of containers returned:
 - Of those who know where their collection site is and the collection site is 10 km or less away, 93% of their containers are returned.
 - For those whose site is 10 – 25 km away, 90% of containers are returned.
 - For those whose site is 26 km or more away, 70% of containers are returned.
 - Correspondingly, the closer the site, the more likely the farmer is to return 100% of his containers.

97

Portion of containers returned by distance to collection point



N=202, those farmers who are aware of program and know where their recycling point is

98

Attitudinal factors that affect the return of containers

A number of agree-disagree statements were read to respondents to measure attitudes related to container recycling.

The statements with the highest level of agreement included:

- The greatest benefit of returning containers is a clean yard and a clean farm
- Returning and recycling containers demonstrates that you have good stewardship practices
- I have a pretty good system for collecting up my containers and returning them

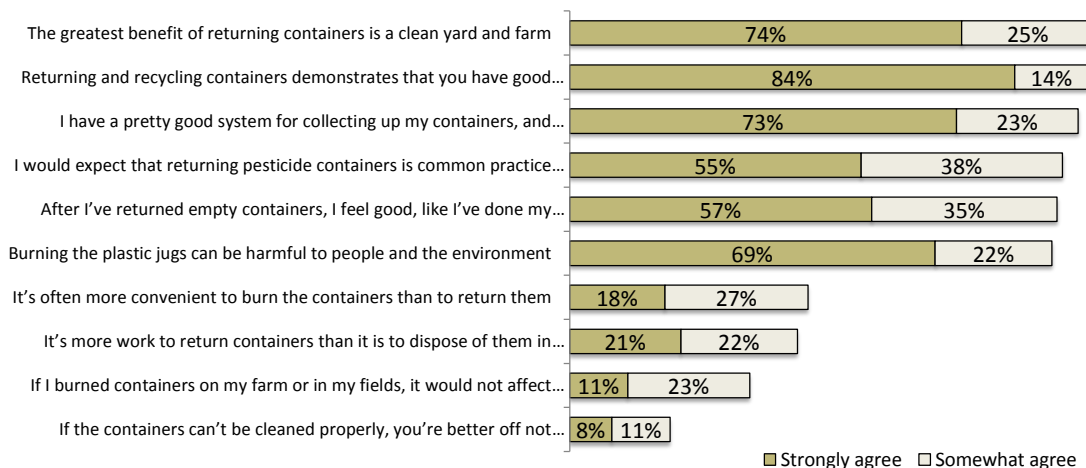
There is low agreement with:

- If containers can't be cleaned properly, you're better off not to return them (only 19% agree)
- If I burned containers on my farm, it would not affect my neighbours (about a third agree)

All of the positive statements (see next slide) correlate with whether or not farmers are returning their jugs.

99

Attitudinal factors that affect the return of containers



Strongly agree Somewhat agree

100

Differences in attitudes between segments

There are few statistically significant differences in attitudes between segments. However, we do see the following:

- Those in Southeast Manitoba are more likely to have a good system for collecting and returning their containers, as are those with higher acreage.
- Those with livestock are more likely to strongly agree that the greatest benefit of returning containers is a clean yard and farm.

101

CleanFARMS
Manitoba Farmer
Survey

Unwanted
Pesticides

102

Unwanted pesticides currently on farm

	Portion who have (N=300)	Average number
Containers	9%	14
Litres	15%	31
Kilograms	1%	6
Gallons	1%	13

- As previously noted, about 31% of respondents generate unwanted pesticides in a typical year or have unwanted pesticides on their operation. Respondents estimate that about 93% of the unwanted pesticide is liquid, and 7% is dry.
- As seen above, much of this is in containers or liquid form. Extrapolating these numbers, we estimate Manitoba farmers have approximately 277,000 litres plus 900 kg of unwanted pesticide on farm. This is a midpoint of a range, and when we apply the margin of error to these numbers, we obtain a range of between 194,000 and 360,000 litres and 100 and 1,700 kg.

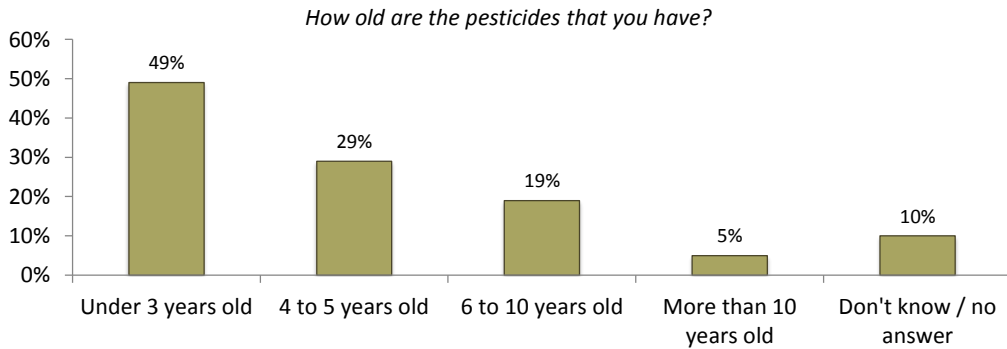
103

How old are the unwanted pesticides?

As seen on the next slide, about half of farmers with unwanted pesticides say these pesticides are 3 years old or less, while about half have pesticides that are more than 3 years old.

104

How old are the unwanted pesticides?



N=83, those with unwanted pesticides. Percentages add to more than 100, as respondents could have pesticides in more than one age category

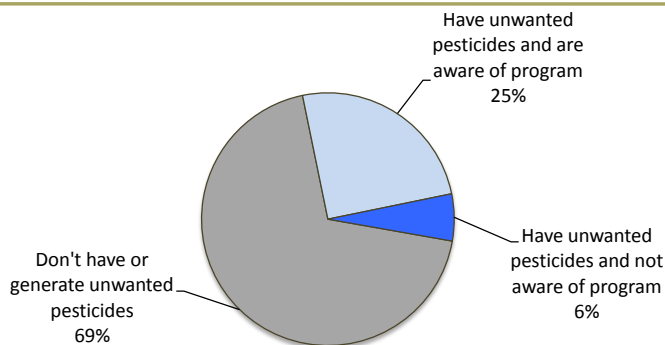
105

Awareness of pesticide collection program

The next slide shows that the vast majority of farmers who have unwanted pesticides are aware of the pesticide collection program. Only 6% of all respondents had unwanted pesticides but were not aware of the program.

106

Summary of portion who have unwanted pesticides and awareness of program



N=328, the entire sample

107

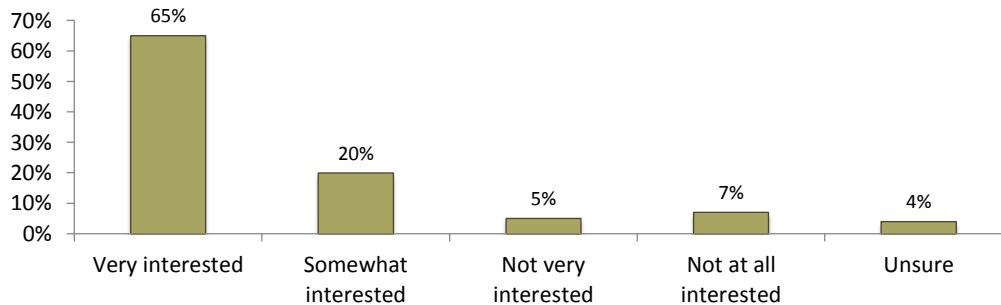
Likelihood of using the pesticide collection program among current non-users

Among those who had unwanted pesticide who did not say they would dispose of it through the program, about two-thirds (65%) said they would be interested in the program and another 20% said they would be somewhat likely to use it. Only 12% said they would not be likely to use it. Of those who said they would not use the program, all said that they would plan to eventually use the pesticide.

108

Likelihood of using the pesticide collection program among current non-users

How interested are you in being able to dispose of obsolete pesticide through this program, if it was in a convenient location?



N=49, those who didn't mention returning their pesticide through the return program

109

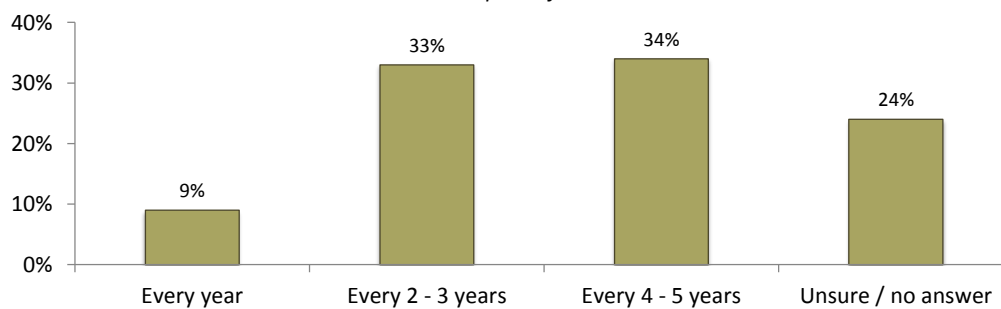
How often should a pesticide collection program be run?

Respondents who typically generate unwanted pesticide, or who have some on their farm currently, were asked how often they would accumulate enough unwanted pesticides that they would want to dispose of them. About a third said that they would want to dispose of unwanted pesticides every 2 to 3 years, while another third said every 4 to 5 years. Only about one in ten (9%) said they would generate enough pesticides that they would want to be able to dispose of them every year.

110

How often should a pesticide collection program be run?

How often would you accumulate enough unwanted pesticide that you would like to dispose of it?



N=93, those who have unwanted pesticide on their farm, or generate it in a typical year

111

CleanFARMS
Manitoba Farmer
Survey

Communications

112

How are farmers most likely to find out about recycling or safe disposal programs?

Farmers were asked an open ended question about where they are most likely to find out about recycling or safe disposal programs. As seen on the following slide, the most common responses were: farm newspapers, radio, and brochures / flyers. There were no statistically significant differences in responses between segments (acreage, region, farm type).

113

How are farmers most likely to find out about recycling or safe disposal programs?

How are you most likely to hear about recycling and waste disposal programs? (Open-ended responses) (N=300)	First mention	Total mentions*
Farm newspapers	38%	54%
Radio	10%	23%
Brochures, flyers	8%	16%
Crop input retailer	6%	12%
Provincial extension, government	6%	10%
TV	3%	10%
Farm magazines	6%	9%
Other farmers	5%	8%
Mailed information	3%	7%
Chemical company reps	3%	4%
On line	1%	2%
Other	5%	8%
Don't know	7%	7%

* Percentages for total mention add to more than 100, as multiple responses were allowed

114

Usefulness of various information sources

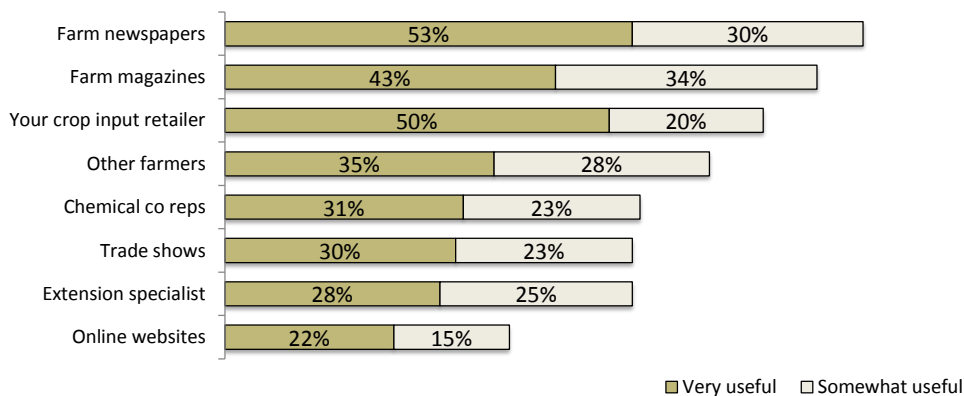
Respondents were read a list of various information sources and asked to rate the usefulness of each. Farm newspapers and magazines are most highly rated, followed by crop input retailers. Other farmers are also seen to be a useful source of information.

There are only a few differences between segments in ratings of the usefulness of the information sources:

- The larger the farm, the higher they rate the usefulness of trade shows.
- Those in the larger acreage categories are more likely to consider online websites to be somewhat or very useful.

115

When you want to learn about issues that can affect your farm, how useful are the following information sources?



116

