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Executive Summary

Saskatchewan Agriculture Stewardship Council engaged CleanFARMS, through support from the Saskatchewan Ministry of Environment, to conduct qualitative research with Saskatchewan farmers. This research will feed into the development of an education and awareness strategy for a stewardship program for grain bags, bale and silage wrap and twine and netting, as well as into the development of the program itself. Blacksheep Strategy, an agricultural market research and brand strategy firm, was engaged to conduct this research.

The research approach included focus groups with farmers in Moose Jaw and Saskatoon who use these materials. As well, the research also entailed two depth interviews with dairy farmers to obtain further input from large users of these materials.

The following slides provide an overview of some of the key themes.

Executive Summary

For grain bags, the most common disposal method over the past few years has been burning. For the Moose Jaw group, recycling has recently become the more common means of disposal. Burning is seen as quick, efficient and convenient, and a way to handle material that is heavy, bulky and hard to handle. However, farmers also realize the downsides of smoke, pollution, and that it "looks bad" to neighbours and the public. Respondents see the use of grain bags likely increasing, driven by farm expansion, the convenience of use of grain bags compared to more permanent bins, and the flexibility that grain bags allow.

Farmers are interested in finding a good alternative for recycling grain bags. They discussed a program that would involve having rollers available for rent or borrowing through the municipalities or through private industry; having recycling sites located at existing municipal landfills or other recycling locations (e.g. oil); and reasonable distances between recycling sites.

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Executive Summary

Distinction was drawn between farmers who would have a large volume of grain bags and might be more likely to participate in a recycling initiative, versus those who only use a few and may not go to the time and effort required (they may continue to burn the bags).

Twine and net wrap pose different challenges. These materials are typically used in small amounts, in pastures or yards during the winter (as well as the summer but in smaller amounts). Snow, ice, dirt and hay are issues. Current disposal is most typically by burning – some will accumulate the materials in totes or bins, and some will pile it on the ground. Some wait until summer when the snow and ice have melted away. Most have an active dislike for used twine and prefer to get rid of it quickly.

Farmers are open to a recycling program for twine and net wrap, possibly through accumulating it in bins (preferred over bags). The recycling location would need to be sufficiently convenient (near main commercial centres), and the cleaning requirements not too stringent.

Executive Summary

Bale and silage wrap is being disposed of primarily by burning or into landfill. The issues here are cleanliness and again the fact that the material is generated over time, mostly in the winter, and can be subject to ice, snow, dirt and hay. Further, pieces are small and vary in size. Suggestions for recycling included possibly a shredder (mobile, which would come to the farm), or bins that would be collected (or compacted on farm before transporting the material).

There were various opinions regarding whether the cost of the program should be buried in the cost of the product, or added on as line item at retail (an eco-fee). There was no consensus but there were stronger and more plentiful arguments in favour of having the cost buried in the price of the product. Further, there were some fairly negative emotional reactions to the idea of an eco-fee which is a visible line item on the receipt, which they have to pay, don't get back, and have no control over.

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Executive Summary

Farmers wondered about the economics of recycling, especially with regard to the perceived high value of the plastic used for grain bags. They feel that if a recycler is making a profit from the plastic, then farmers who make the effort to prepare and deliver the plastic (and purchase it in the first place) should share in the profit (or it should defray the costs of the program). Respondents emphasized the need for transparency, and to understand the logistics and economics of the recycling process.

Farmers also brought up the idea of having a refundable deposit for grain bags.

Farmers are looking for a collaborative effort, with industry, government / tax-payers and farmers all playing a role. They feel that a macro-view is necessary to fully understand and explore the most efficient and cost-effective models for recycling.

Farmers would also like to understand what the requirements are at the processing phase, so that they can possibly adapt their own processes to fit what is needed. There is an inherent willingness to be flexible and adaptive.

Executive Summary

The top drivers that motivate farmers to recycle are to "Do the right thing", take care of (and not harm) the land, air and environment for the sake of family, neighbours, community and future generations. In terms of tangible benefits, farm cleanliness (rodent-free, no trash lying around, running a clean operation) and image of the farm / industry are strong drivers (and this is also an emotional benefit). Related to this is the benefit of pride in running a sound operation with appropriate business and environmental practices and being a partner in an industry that is taking steps to be environmentally responsible.

The top barriers to farmers participating in recycling would relate to the cost to the farmer in terms of time, money, labour and general inconvenience.

It was clear from these farmers that if given a convenient program with a reasonable expectation of their participation in terms of time or resources, they would participate because it is the right thing to do and ultimately reflects care for their family, neighbours, community, and the environment.

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Executive Summary

When given some examples of messages about recycling, the messages that talked about equivalent diesel burned (for example, Burning a grain bag would be equivalent to burning 311 litres of diesel fuel) were most positively received. Farmers found these types of statements interesting and illustrative. Farmers also liked messages about environmental stewardship. Farmers felt that more positive messaging (what will be saved, what are the benefits, building on pride in the industry and their farms) would be more effective.

Some also felt that farmers *want* to recycle, so any communication should focus on conveying information about the program, rather than convincing farmers about the importance of recycling.

Farmers pointed out the importance of industry involvement in making innovations and improvements in equipment, products and packaging that would make the recycling process more efficient.

Comments and Discussion

The research examined current practises versus what farmers would need to do to recycle. Some are already going to the effort that would be required to recycle, but then burning or burying the materials. For example:

- Some farmers are rolling their grain bags before they burn them.
- Some farmers are putting their twine, silage wrap and net wrap into mini-bulk bags to remove it to burn them.
- Some farmers are transporting the waste plastic for current disposal options, i.e. it's on a truck already, it's just being hauled to the burn site versus a recycling site.
- Some farmers are paying to have a Loraas bin hauled to landfill now what would be the incremental cost of having two smaller bins where one is for plastic recycling?

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Comments and Discussion

The program will need to be tailored by material, based on the observed differences in how the materials are generated, the differing attitudes and expectations related to how a program might be structured, and the differing issues with the various materials.

The main barriers to recycling vary by material:

Twine – contamination – dirt and hay. Dirty to collect. A hassle. Small amounts, lack of weight and bulk make it not worthwhile.

Grain bags - bulk and weight, farmers with small amounts of grain bags

Silage and bale wrap – variance in size and cleanliness of material, mostly the waste is in small pieces, mostly used in winter; ice and snow and dirt are issues.

The primary consideration for farmers will be convenience, and that there are reasonable expectations of the effort, time and cost incurred by the farmer.

Comments and Discussion

As far as burying the cost of the program versus having an eco-fee, it appears the stronger sentiment (and more arguments in favour) would be to include the cost of the program within the price of the product (buried). Note however that this is not a quantitative finding.

If a non-refundable eco-fee is the way the program needs to go, some points that might be used in positioning could include:

- A visible indication that farmers and the industry are taking action
- Transparent you see what the program costs, you know what you are paying for
- It demonstrates industry involvement and the part industry is playing and cost it is paying for the program

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Comments and Discussion

As seen at various points during the focus groups, transparency will be important. Be able to explain the economics of the program, where the material goes, what it's made into, who is profiting and where do those profits go.

The point was strongly made in one of the groups about considering "the bigger picture". It is possible that mobile processing/baling plants might be the most efficient solution if all the costs in the system are analyzed and considered. Having farmers prepare and transport the materials may or may not be the optimal solution, and farmers would like this considered.

Comments and Discussion

While farmers are able to see how a grain bag program could be mechanized, they feel that twine and net wrap, bale and silage wrap lend themselves less to mechanization. This was driving suggestions for on-farm processing or pickup – some way of using economies of scale and a macro-approach.

With it being "early days" for recycling of any of these materials, it may be similar to what we found with pesticide jugs when that program was introduced; farmers are more likely to recycle if they have a "system" or process that they follow. Communications could help to convey what farmers are doing with these materials, and what their systems are, once the program becomes established.

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Comments and Discussion

There doesn't seem to be a lot of "angst" about burning. Even given that many don't feel it is the "right thing to do," some still do it and try to hide it. Some don't see burning as a problem. Attitudes about burning may be one of the more difficult things to change, in light of how "convenient" it is. There is also sincere uncertainty over whether burying or burning is better, as well as over the environmental footprint / costs / economics of the alternatives. This could be addressed through communications efforts.

The emotional benefit of doing the right thing is the strongest driver – ties into taking care of future generation, community, family, land, air. Combined with some of the "equivalent" messages that tested positively, messaging might strike at the positive aspect of taking care of the environment and your family and community as well as the economics and equivalents of what burning represents. Possibly a combined "carrot and stick" approach.

Comments and Discussion

Another key driver is participation / collaboration / being part of the industry. Throughout the focus groups and in the interviews, we saw that farmers want to approach this issue constructively, creatively, collaboratively and innovatively.

Several times, the point was made that farmers are adaptable and innovative, and have a great deal of ingenuity. Their involvement going forward with the design of a program will be very valuable.

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CleanFARMS Introduction, Objectives and Methodology

Background

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The research approach included focus groups with farmers in Moose Jaw and Saskatoon who use these materials. As well, the research also entailed two depth interviews with dairy farmers to obtain further input from large users of these materials.

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Research Objectives

- Explore views, values and attitudes related to disposal and recycling of grain bags, bale and silage wrap, twine and net wrap
- Understand current practices for disposal
- Understand opinions and attitudes regarding costing alternatives for recycling programs
- Obtain input on potential program features
- Identify barriers and opportunities related to farmers participating in a return / recycling program for the above materials
- Investigate what might be required to shift thinking (and behaviours) to encourage participation in recycling programs for these materials
- Identify rational and emotional drivers related to disposal and recycling of these materials
- Explore potential key messages or positioning alternatives for promotion of a new program

Methodology

The focus groups were held in Moose Jaw and Saskatoon on February 26th and 27th, 2013, and drew respondents from as far as an hour and a half away.

All groups were held in hotel meeting rooms, and sessions lasted about two hours.

There were three list sources used: a random farmer list, a list from the Moose Jaw River Watershed Stewards (of farmers who participated in or expressed interest in a pilot recycling project for grain bags and twine), and a small list of grain bag purchasers in northern Saskatchewan.

Most of the respondents came from the random list. In each group, two respondents had participated in a grain bag recycling pilot project.

Participants were offered an honorarium of \$125.

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Methodology

Respondents were screened to meet the following criteria:

- Be one of the people involved in deciding how plastic waste is disposed of on their farm
- Not be planning to retire or exit farming in the next few years
- Have a mix of ages
- No more than two per group with less than 640 acres under crop
- A mix of users of the study materials. To be considered a user, had to use and dispose of at least one of the following:
 - 10 or more rolls of bale or silage wrap per year
 - 25 or more spools of twin per year
 - 5 or more rolls of net wrap per year
 - 5 or more grain bags in the past few years

Profile of Respondents

The Moose Jaw group had six respondents and the Saskatoon group had nine. Weather did adversely affect some respondents, with nine having been recruited for Moose Jaw and eleven for Saskatoon.

Following the two focus groups, we felt we did not have enough representation from large users of silage wrap, so we supplemented with two interviews with dairy farmers. The two dairy farmers interviewed had larger-than-average operations. One was in northern Saskatchewan, and the other was in southern Saskatchewan. Where relevant, their comments are incorporated throughout the report.

The following slides provide a profile of the focus group respondents.

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Profile of Respondents – Moose Jaw

Respondent	Age	Bale/silage wrap	Twine	Net wrap	Grain bags	Acres	Head of cattle
1	Under 45	✓	✓	✓	✓	1500	400
2	45-54				✓	4200	
3	55-64	✓	✓	✓		500	100
4	45-54		✓			3000	25
5	Under 45		✓	✓	✓	4500	100
6	45-54	✓			✓	5400	100

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Profile of	Responde	ents – Saska	atoon						
Respondent	Age	Bale/silage wrap	Twine	Net wrap	Grain bags	Acres	Head of cattle		
1	Under 45				1	6500			
2	Under 45		1	✓	1	3200			
3	55-64		✓			700	30		
4	45-54	✓				6000			
5	55-64		1		✓	1200			
6	45-54				✓	5000			
7	55-64	✓			✓	3000			
8	65+		✓			380			
9	55-64				✓	6500			



Grain Bags – Current Disposal Practices

Respondents discussed a number of ways that they and others dispose of grain bags, including:

- Burned the most frequently used option
- Recycled now becoming the most frequent option in Moose Jaw area (since pilot started)
- Stored / piled up (unsure what to do with them)
- Landfill primarily on farm, but some in municipal (many town or municipal landfills don't accept)
- Litter (leave on or beside field or in out-of-the-way area)
- Reuse as a cover or tarp or various other uses

These practices are further discussed on the next slides.

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Grain Bags – Current Disposal Practices (cont'd)

- Many were aware of the grain bag pilot recycling pilot project, and a few in each group had participated. (a later section of this report provides feedback on the pilot)
- The Moose Jaw respondents indicated that burning has been the most frequent method of disposal in the past, but recently more have been recycling.

We were just burning them before the recycling program. (Moose Jaw)

 Burning - Most believe that the most frequent practice is to burn the grain bags, and several respondents freely admitted that this is what they have been doing with their bags. Some are using a roller to roll the bags up, but then burning them. Respondents noted that the grain bags don't "burn clean", send up black smoke, and are usually burned at night or far from where others might see the smoke.

Usually it's as far away from the main road as possible so nobody else sees! / Around our area they're mostly burned at night because they just smoke black. (Moose Jaw)

Grain Bags – Current Disposal Practices (cont'd)

If you've got a bale roller you can roll them into a great big bale and then you've got the bale sitting there ... but what you do, if you're not doing that, is you just go to the end of it with a front-end loader and just push it and grab it with a clamp and pick it up and you put them in a big pile or put rubbish on them and then you wait until there's a rain, but generally you wait until about this time of year and you burn so that you're not causing a prairie fire. (Moose Jaw)

We usually throw it on a pile of branches or old lumber that you're going to burn. And when the time comes and the wind is right, then you burn it. (Moose Jaw)

Well, I cut them up and roll them up just so I can handle them in my hands, and then I usually try and burn them at a high heat, usually with a straw bale or something, and get the bag burning as hot as possible. (Saskatoon)

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Grain Bags - Current Disposal Practices (cont'd)

 Municipal landfill – only one respondent noted taking grain bags to the municipal landfill. However most felt that this is something that is not allowed anymore.

Last year there was a collection site at Kelvington and at Humboldt where they did take them back, other years we just pay to dump them into the landfill. (Saskatoon)

Well, they've been banned at the dumps for the most part. It's not allowed out our way, anyway; you can't take them to the dump.... They don't barely even allow garbage at the dump anymore! (Moose Jaw)

Grain Bags - Current Disposal Practices (cont'd)

- Bury on farm Some bury the bags or throw them in a dugout "as is," but a more common practice is to burn the bag, then put the remnants in the farm landfill.
 - They leave a big pile of plastic and you get a mess and then you've got to bury it or something. (Moose Jaw)
- Piling up on farm In these cases, the farmers are not sure what to do with them, don't
 want to burn them but don't see a viable alternative. When we probed into whether
 there might be large "stockpiles" of grain bags, most thought this would not happen
 because of the bulk/size of the used grain bags (the bags likely get burned). However, a
 few related that they knew of farmers in their areas with a substantial number of grain
 bags piled up.

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Grain Bags - Current Disposal Practices (cont'd)

- Some mentioned "littering."
 - You see the odd one just laying in the bush. / Yeah, pushed into a tree row or just abandoned. (Moose Jaw)
- A few mentioned neighbours who had bought machines to roll up the grain bags. Some also mentioned that companies that rent extractors (for getting the grain out of the bags) also rent rollers.
- Several also mentioned that they or others have reused grain bags for uses such as:
 - Weed control / ground cover in shelter belts
 - Reusing as a cover or tarp
 - Greenhouse flooring
 - Skating rink liner
 - Liner for sprouting barley

Grain Bags – Pros and Cons of the Most Common Disposal Methods

Burning

Pros

- Easy, quick, convenient (generally seen as the easiest and most efficient)
- Instant "After it's pushed into a pile and burned, it's just gone."
- Doesn't sit in the landfill for thousands of years
- If you don't do something with them, they get full of rats and mice
- Space reduction "If you haul them to the landfill you've got a bulk of stuff and if you burn them you've only got a little pile of melted oil."
- Grain bags are so heavy and hard to move, so if they can be burned on the spot it is more convenient

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Grain Bags – Pros and Cons of the Most Common Disposal Methods (cont'd)

Cons of burning

- Gas is expensive
- Pollution and toxins in the air
- Smoke
- Hard plastic residue, there is still something left that has to be disposed of
- Looks bad
- Costly if someone dials 911 because they think there's a fire

Grain Bags – Pros and Cons of the Most Common Disposal Methods (cont'd)

Burying

Pros

• Keeps the rats out of the yard

Cons

- Have to contend with it in the future
- Takes a lot of years for the plastic to break down
- Large volume to bury
- Have to drag it to the farm landfill or dugout

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Grain Bags – Pros and Cons of the Most Common Disposal Methods (cont'd)

Landfill

Cons

- Costs money
- Time and effort to haul them there
- Takes up a lot of space in the landfill
- Most landfills won't accept

I personally would like someone to tell me what's worst for the environment because I don't know. I'm just asking. Like, what would be worst for the environment? Burning or landfill? I haven't got a clue. (Moose Jaw)

Drivers of Usage of Grain Bags

The groups generally had consensus that the use of grain bags will likely increase. There are a number of reasons for this:

- Good for those who are expanding, many farms are expanding
- When renting land (easy to expand storage space temporarily, rather than buying more permanent bins)
- Allow more flexibility of type of crop (different crops take up larger or smaller amounts of storage space)
- If commodity prices are increasing, farmers more likely to buy bins to store a higher value crop, whereas with lower commodity prices, grain bag storage is less expensive and may be adequate.
- Having the crop stored in the fields allows you to see the loading process trucker remains in sight.

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Drivers of Usage of Grain Bags (cont'd)

- Logistics, don't have to truck the grain miles to bins or storage facility (save labour and fuel), take a lot more grain off in a day. "It buys time at the right time."
- Allows better use of labour through the year instead of intensively at harvest
- Better than storing grain on the ground
- Good for larger farmers (5000 acres and up) farm more acres farther away, distance to haul grain
- Using grain bags is easier than filling and emptying a bin

Twine and Net Wrap - Current Usage

With twine and net wrap being different types of plastics, it is of interest to know whether both are being used/generated on the same farms, or whether just one or the other is used/generated. Respondents felt that the same farmers will use both or dispose of both on their farm, although they might have a tendency to use more of one or the other. Some of the comments:

- May use both depending on quality of the hay or depending on buyer preference
- Differing balers and combines may work better with one or the other
- For higher quality hay, one respondent prefers to use net wrap (as a seller of hay)
- Net wrap may be on the upswing, and we might find more farmers who are using both twine and net wrap. One respondent felt that net wrap use may increase and twine use may decrease as farmers buy new balers.
- Farmers buying hay may have either twine or net wrap to dispose of, depending on who they bought it from and how it was baled.

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Twine and Net Wrap - Current Disposal Practices

Following are all the ways in which twine and net wrap are being disposed:

- Burning the most frequent option in both groups
- Landfill (Loraas bin)
- Burn for fuel (one in each group did this, and several knew of other farmers who do this)
- Recycle (not common)
- Piled up or stored until spring when the ice and snow melt off

"I've got big piles of twine that I won't be able to do anything with until spring, whether I burn it or not then." (Moose Jaw)

These practices are further discussed on the next slides.

Twine and Net Wrap - Current Disposal Practices (cont'd)

Burning is the most common way respondents dispose of twine and net wrap (in a burn barrel, pit, field, etc.)

Some respondents described themselves or neighbours burning twine in a furnace, as a fuel for heating. The fact that several knew of this happening, and that there were a few who actually do it, indicates that it may be a somewhat common practice.

I burn it, but it's in an outdoor furnace, so it's being used nominally for a heat source. (Moose Jaw)

Like, some guys are burning it in their shops. / My neighbour has a couple hundred head of cattle and all his goes into the shop into his furnace. He says it's the best heating stuff you can buy. There's a lot of heat that comes out of it. But this guy's also burning up his grain bags. I mean, he'll burn anything." (Saskatoon)

We heat the house quite a bit with twine, on the woodstove. (Saskatoon)

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Twine and Net Wrap - Current Disposal Practices (cont'd)

Recycling - Respondents were not generally aware of the pilot program for recycling twine, and none had participated.

A few noted that they or others had previously attempted to salvage twine or net wrap for recycling. A significant impediment is residual hay, as well as snow and ice.

But a year like this, though, all the bales are coated with ice and the twine comes off with ice on it. So, I've got big piles of twine that I won't be able to do anything with until spring, whether I burn it or not then. / I think guys are starting to put more twine into the recycling bags, but the problem there is there's zero-tolerance for hay and stuff like that. Like net wrap this year ... any of the guys that are trying to do that at the start of the year abandoned that; there's too much icing and hay on the end of it. (Moose Jaw)

Twine and Net Wrap - Current Disposal Practices (cont'd)

Burying – few say that they bury their twine or leave it on the field. Many noted the "hassle" of twine and that it just keeps surfacing and causing problems (getting caught on equipment, livestock, boots, etc), if it is not burned.

Landfill – One respondent knew of farmers who put their twine in a Loraas bin, for disposal. Further, one of the dairy farmers interviewed puts all his waste, including twine, net wrap and silage wrap into a Loraas bin.

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Twine and Net Wrap - Pros and Cons of Burning

Burning

Pros

- You get rid of it (right away)
- Safe not to have it around You're tripping over it, it collects on all your equipment, on any rolling surface. / It'll end up in a field too if you don't clean it up. (Saskatoon)
- Can use as a source of fuel

Cons

- Hard on the environment
- · Same cons as for grain bags

Bale and Silage Wrap – Current Disposal Practices

The focus groups had some small to medium cattle operations that use silage or bale wrap. As well, one of the focus group respondents uses silage wrap to store grain – he tapes or glues the sheets together to form large sheets (150 by 400 feet) to cover grain piles.

From the dairy farmers and the focus group respondents, we see that disposal practices vary based on type of operation and based on how and when the bale / silage wrap is used.

Focus group respondents indicated that the most frequent method of disposal is burning.

As much of the silage stuff as you can possibly get ends up in burning. (Moose Jaw)

Usually by the time we're done with it, though, it's shredded so bad that you can't use it for anything else. (Saskatoon)

After we're all done we try to burn it and what's left over we push it in the hole. (Saskatoon)

We put it in the burning barrel, it's the simplest way. (Saskatoon)

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Bale and Silage Wrap - Current Disposal Practices (cont'd)

Some also bury the bale and silage wrap. This was the case for the respondent who uses it for grain storage – he indicated it is too hard to burn the large sheets and it just gets pushed in a hole and buried.

In some cases, the wrap is left on the field as "litter".

The neighbour just pulled his into the trees and left it there. (Saskatoon)

A lot of those silage covers are just getting pulled off with loading the bunk wagon and getting spread out on the field, unfortunately. (Moose Jaw)

There's nothing there to salvage out of that because it's coming off in strips and bits and pieces and it's getting ripped up. / It's just left floating around out our way, left where it falls. (Moose Jaw)

Bale and Silage Wrap - Current Disposal Practices (cont'd)

The two dairy operations that were interviewed had quite different practices.

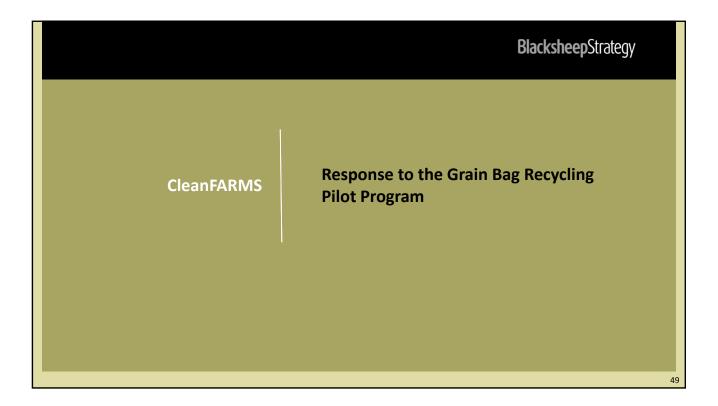
- One of the operations puts the larger pieces of silage wrap, by hand, in mini-bulk tote bags, at the silage site and the feeding site. When these bags are full, the bags are taken to a different area on the farm and the silage wrap is burned. The bags are bulky but light enough for two people to handle.
- The other dairy operation places their used wrap in Loraas bins, mixed with other waste (including twine and net wrap), and disposed of (presumably in landfill) by Loraas. This respondent indicated that 90% of the waste that goes into the Loraas bin is plastic.
- Because most of the silage is fed in winter, snow and ice on the waste plastic are a problem
 and very difficult to remove. Some dairy farmers also use tires to weigh down the plastic,
 and these also freeze to the plastic along with the snow and ice. One of the dairy
 interviewees uses a front-end loader and grapple hook, while the other was moving it by
 hand. Both dispose of the plastic as soon as possible, not waiting until spring.

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Bale and Silage Wrap - Current Disposal Practices (cont'd)

- Both of the dairy farmers we spoke to thought that the most common ways that dairy farmers dispose of plastic is by burning, burying on farm or using Loraas bins (when close enough to urban centres to make this alternative feasible or cost-effective).
- The dairy farmers we interviewed were larger than average, and the farmer using the Loraas bin felt that this would not be economically feasible for smaller operations.



Response to the Grain Bag Recycling Pilot Program

In each group, a few respondents had recycled grain bags under the pilot program. Further, almost all were aware that there was a pilot program.

A brief description of the program was read to the groups, and they were asked for their comments on what had worked well, and what could be improved.

What worked well

- Free roller, equipment was accessible and you could get it when you wanted it
- Bag roller was easy to use, worked well
- It's the right thing to do
- Locations were close
- Good way to dispose of grain bags put it in a bale and then it's easy to handle, can put them on a pallet

It's convenient and it's good. / It was simple. / It was easy.

Response to the Grain Bag Recycling Pilot Program

Improvements or issues

Respondents were asked what might be done to improve the pilot program.

Maybe set up a depot in a smaller radius because our freight cost to get them down to Moose Jaw here was pretty large. (Moose Jaw)

Possibly, the cleaning process could be an issue.

The proposal was that they had to be clean and swept on both sides ... The only thing I can see in the future is if they demand it's 100% clean or they won't take it because then it won't fly because no one's going to take the time to sweep both sides of a grain bag before they recycle it. (Moose Jaw)

I heard that those grain bags had to be cleaned. I don't know if that's true or not. But if it's true, that's not possible. / We didn't clean ours. We just rolled them up and took them there. (Saskatoon)

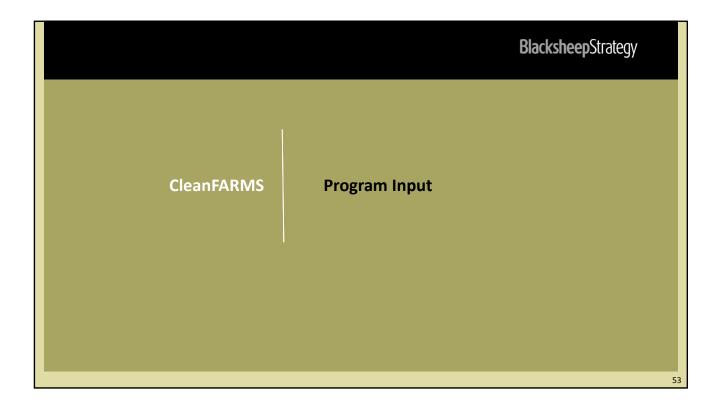
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Response to the Grain Bag Recycling Pilot Program

Another possible issue is having a limited timeframe:

Well, I believe there was only one day in our area where you could deliver them. And I can't remember when it was exactly, but there was a lot of people who said they couldn't make it that day. (Saskatoon)



Grain Bag Recycling Program Input – Preparation of Materials

• Similar to the pilot programs, provision of grain bag rollers. The roller needs to be accessible and available when needed.

Well, probably that machine—the roller—and the availability of that machine, which means maybe the RM actually purchasing one and you renting it from the RM. (Saskatoon)

- Some mentioned that rollers are (or should be) available for rent from the places where farmers are renting extractors.
- Respondents felt that a few weeks notice would be sufficient, for accessing a shared bag roller. Some noted that they roll the grain bags all at one time.

We usually leave ours out in the field until springtime and we'll fill about 30 or 40 bags a year and then in the springtime we just go and get the roller from the guy where we buy our extractor and bagger from and he just lends it to us and we roll them all up in a big...takes us a day or two and we just do them all at once. (Saskatoon)

Grain Bag Recycling Program Input – Preparation of Materials (cont'd)

• One respondent felt that that farmers who use fewer grain bags may have a different perspective than those who use 30 – 40 a year.

The logistics of getting this stuff all collected is not a big problem, like, if you do it with 30 bags ... but what I see the problem with is trying to get the guy that loads up two bags a year and trying to make it convenient for him to get that bag. It just is way more convenient for him to drag that bag to a hole and burn it. The guy with 30 bags or 40 bags, that's a different story. I can see those guys doing this and even being able to afford a machine. (Saskatoon)

 Cleaning requirement - Most felt that a requirement to sweep the surfaces of a grain bag would be too stringent.

Oh, we'll spend 15 minutes, but not 2 hours. / You have to remember that you're looking at a 250-foot bag and it's going to take more than 15 minutes to sweep just one side off, never mind two! / And how do you fold it over to sweep the other side? (Saskatoon)

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Grain Bag Recycling Program Input - Preparation of Materials (cont'd)

- For the most part, respondents felt that it is reasonable to get the grain bags relatively clean. There were several suggestions for how to get grain bags clean, including:
 - Handle them when there is a strong wind so the extra grain and dirt blows off
 - Drag them around the field with an ATV or dune buggy
 - Normal handling and the baling / rolling process itself usually results in most of the grain being shaken off

But they won't roll up anyway unless they're relatively clean. So, you just get them clean enough to roll and they're about as clean as they can possibly be. (Moose Jaw)

Grain Bag Recycling Program Input – Preparation of Materials (cont'd)

- Some also suggested that the grain bags could be cleaned by the farmer up to a certain point, but that the processor or recycler should clean them centrally. This point was strongly made by the Moose Jaw group.
- One respondent in the Moose Jaw group emphasized that any program needs to be a
 collaborative effort between industry, government and farmers (referring to the need to
 look at a macro level at the economics, costs, benefits of cleaning, preparation,
 handling, processing and transport).

(If) you really want to set up something here that's really going to work, you're going to have start looking at synergy and a collaborative effort by the municipalities and the farmers (Moose Jaw)

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Grain Bag Recycling Program Input – Preparation of Materials (cont'd)

 Design the roller machine so that the bags are elevated to a greater extent, so that material gets shaken or falls of during the rolling process.

You're pulling a 250 or 300-foot bag with the roller that's just stationary, so a lot of the material shakes off as it comes down because it's elevated to, whatever, 6 feet or 8 feet off the ground before it hits that roller. So, if you could develop a way that it can elevate it to 20 feet. (Moose Jaw)

Grain Bag Recycling Program Input – Location of Collection Sites

- As far as location, respondents suggested that grain bag collection sites could be where
 there are existing sites either municipal landfill sites, or sites where other materials are
 collected, such as used oil. The Moose Jaw group suggested that every RM have a
 collection site.
- They also felt that the site should be in or near commercial centers where they do a variety of business.
- Respondents did not feel that having retailers (those who sell the grain bags) operate as
 collection sites would be a good idea. They felt that retailers would not have the space,
 and also that this would not be efficient for collection (several sites versus one central
 site).

Retailers are going to be looking at "Oh, jeez, now I've got to store a bunch of used grain bags and have the infestations and everything else." (Moose Jaw)

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Grain Bag Recycling Program Input - Location of Collection Sites (cont'd)

- Regarding driving distance or time to a collection site, the groups discussed options such as 30 km maximum (Moose Jaw) or a 30 minute drive (Saskatoon). If a deposit is offered, the Saskatoon group felt farmers would be willing to drive farther.
- Farmers who use high quantities of grain bags appear willing to drive farther to take the
 grain bags to a recycling site, and didn't feel these sites necessarily need to be in every
 RM.

Grain Bag Recycling Program Input – Hours of Operation of Collection Site

- Both groups felt that the collection site for grain bags should be open year-round. From
 October to April, when grain is moving, but also during summer months as some may
 not clean up their bags until that point. "Those grain bags are being cleaned up 12
 months a year." (Moose Jaw)
- If there is no refund or deposit, farmers do not feel the collection site needs to be monitored or staffed. Therefore, they feel it should be feasible for the site to be open 24 hours a day, year-round.

If it's a place where you can just go and drop off your bags and leave, it can easily be open year-round. (Moose Jaw)

It should be open 24 hours. / And it doesn't need to be fenced either. (Moose Jaw)

- If the bags are returned to a staffed site, both groups felt that normal business hours (8 to 5) would be reasonable.
- There was some concern about the cost to operate a staffed or contained site.

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Grain Bag Recycling Program Input - Discussion of On-Farm Pickup

- Both groups discussed the idea of on-farm pickup for grain bags. They brought up the
 used oil pickup program as an example of how this might be feasible.
- They also brought up the idea of some kind of shredding or processing or compacting on farm, during a pickup process. One respondent in the Moose Jaw group felt there needs to be consideration of the most efficient and cost-effective process, which might be mobile processing / baling plants.
- A Saskatoon respondent brought up a similar thought: "Another thing I was thinking was couldn't these bags all get shredded up like the chemical jugs do? Couldn't someone go around and pick them all up and shred them and go?"
- Some worried that on-farm pickup would end up causing too much of an increase in the costs of the grain bags

They're just going to offset the cost of that onto the bags and the bags will cost double. (Moose Jaw)

Grain Bag Recycling Program Input – Discussion of On-Farm Pickup (cont'd)

- Respondents suggested that on-farm pickup might be especially feasible in the case of large quantities of bags, or if a deposit is charged.
- Another pointed out that the on-farm pickup might not happen when the farmer wants it to happen: "I don't want them sitting there for...I want them off my yard as soon as I've got my bale." Other concerns about on-farm pickup are: the reliability of the service, accessibility of the field in the winter, and accessibility when fields are wet.

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Twine and Net Wrap Recycling Program Input – Collection of Materials

 Farmers in both groups discussed having tote bags or a solid-sided container for collecting twine or net wrap. Barrels (or burning barrels) are commonly used currently. They feel that a solid sided container would be easier to stuff the twine into, versus a bag.

But then we started using one of those mini-bulk things to throw the twine into it. And if that could be picked up or we could take it to somewhere, that would be...it's just time-consuming. (Saskatoon)

Yeah, you could store it in and then just take the whole barrel and away you go and dump it because it's not that much, eh? I mean, you could have a few and fill them up and at one time take the whole works. But you'd have to have a place where you could take it. (Saskatoon)

Twine and Net Wrap Recycling Program Input - Preparation of Materials

- Respondents emphasized that there are more impediments to recycling based on how twine and net wrap are used and currently disposed of.
 - These materials are used in small amounts over the course of the year.
 - Twine especially is seen as a "pain" and a "nuisance." Farmers don't want to have it around, and generally want to get rid of it as it accumulates. For most, the amount that accumulates does not justify the expense and inconvenience of a trip to get rid of it the simplest option is to burn it.

Put it in the burning barrel. It's way easier...and it's gone. (Moose Jaw)

A lot of soil material gets stuck in it. (Saskatoon)

In our case it's just a lot of physical picking it up and...or when you're putting it out with the tractor and you cut the twine, you can take it off and roll it up at that point. So, it's just time-consuming, mainly. (Saskatoon)

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Twine and Net Wrap Recycling Program Input – Preparation of Materials (cont'd)

 Farmers felt that there is a significant issue with twine and net wrap being dirty, by nature of the way it is used and the way it accumulates.

And the contaminants is the big thing. / Yeah, that stuff's always dirt or ice and hay. / Yeah, and if they have zero-tolerance it's not going to happen. (Moose Jaw)

Well, one of the big things with that is ice and snow, right? So, wait until it melts out of there. Like, I'm going to burn that stuff as quick as I can to get rid of it. (Moose Jaw)

If you're dealing with year-old bales, there's lots of crusting on the twine that won't come off unless you're physically handling it and pulling it down the twine. So, the labour intensity of cleaning it is...it's probably more labour-intensive to clean a net wrapper or twine than it is a grain bag.

Twine and Net Wrap Recycling Program Input – On-Farm Pickup and Distance to Site

- In Moose Jaw, the group discussed a scenario where there would be local or on-farm processing of the twine, and this idea came up in Saskatoon as well.
 - So, as far as industry is concerned, if they can start coming out and preparing some of that garbage and some of that stuff and, like, if we could store it and if they could come out and process that...so, if they could figure out a way of chopping that stuff up to get enough weight so that it's cost-effective as possible to haul that stuff, then you're going to start to see a community come together and start to deal with it. (Moose Jaw)
- The Moose Jaw group felt that on-farm pickup of twine would be a desirable program feature, especially for larger operations. Farmers could accumulate the twine and net wrap over the winter.

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Twine and Net Wrap Recycling Program Input – Site Location and Distance

 Farmers felt they would not be willing to haul twine or net wrap as far as grain bags due to weight and bulk.

But if you're 50 miles out, you haven't got any weight and the cost is prohibitive. (Moose Jaw)

 Respondents in Saskatoon suggested that the collection site should be the municipal landfills.

Probably your local dump, I would think. Because then it's year-round and you don't have to have a set date or whatever. You can just dump it year-round.

• This group felt that the municipal landfill could be the site for twine and agricultural plastic, which would then be taken for recycling.

Twine and Net Wrap Recycling Program Input – Site Location and Distance

- Saskatoon respondents also discussed the idea of retailers being collection sites for twine. However, they felt that retailers would not want the "smell and contamination" that might occur.
- Respondents in Moose Jaw noted that the distances between grazing operations in some parts of Saskatchewan wouldn't warrant sites that are close together, but perhaps the sites could be "trailer cleanout sites or stockyards."

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Twine and Net Wrap Recycling Program Input - Opening Times

- Farmers felt that the site should be open 12 months a year, as they have differing methods and timing of clean-up.
- Some suggested that summer is more likely to be the time of year when handling and recycling twine and net wrap would make sense (even though twine and net wrap are used more in the winter for winter feeding, some pile it up and wait for the snow and ice to thaw before disposing of it).

Twine and Net Wrap Recycling Program Input - Opening Times (cont'd)

And I think the farmer would be more amenable to bringing it in at those times of the year because bulk is another thing. Like, why am I going to haul snow? So, I will stack it into a mound and that's where you can really find that on-farm pick-up would be really convenient. Like, people would really like on-farm pick-up with that stuff rather than putting it into their trucks because even if you put it into a tandem or a two-ton or a three-ton, it's catching onto everything. Like, how do you even offload it? / Yeah, I'd buy into on-farm pick up with that and I'd participate. (Moose Jaw)

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Twine and Net Wrap – Fit of Existing Practices to a Recycling Program

Some of the existing practices with twine and net wrap would fit in with a recycling program. For example, some already put the twine and net wrap into bins, barrels, minibulks, etc. Often the twine is then burned. Sometimes it is even transported in the bins, then burned or thrown into landfill. If there were a very convenient option for taking the accumulated twine to a recycling location (or picking it up), it appears that farmers would be open to this.

If you're pulling twine off of bales, it's a little easier to go to the next step and recycle. But then logistics becomes recycle or burn, right?

Yeah, that's what I mean. I mean, if you're putting it in a recycling bag and it's right at your convenience you'll maybe take that step, but if it's going to sit there and you have to drive it to Moose Jaw or something I'll just throw a match in it ...

Bale and Silage Wrap Recycling Program Input

- Product preparation will vary widely, depending on how the farmer uses it. In many cases, the product comes off in small amounts over time, in strips.
- · Concern that the product is very dirty
 - "The stuff is usually just filthy by the time you get done with it, so do you really have a saleable product?" (Saskatoon)
- One respondent who uses silage wrap to store grain described having the wrap in very large pieces.
 - It's next to impossible! You have to cut it apart and how do you sit there and physically bring something in like that and then deal with grain that's left on top if it too because you can't get that clean. So, how do you lift that up? Like, you're talking thousands and thousands of pounds of material—snow, whatever. (Saskatoon)
- These respondents agreed that "Some kind of shredder would help clean things up. / Yeah, break it apart so it's somehow manageable."

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Bale and Silage Wrap Recycling Program Input

- For on farm pickup, one of the dairy farmers had the idea of bins that stay on the farm and have a truck that compresses the material pick up when full. This differs from the Loraas bins that are hauled to landfill and then returned to the farm empty, and might be worth considering as well.
- Both dairy farmers suggested bins or a system to compact the plastic, as well as
 accumulating the material on farm to get larger quantities. Both are concerned about
 costs of a new recycling program (built into the product and possibly also still costing the
 farmer something to dispose of) and both felt that a collaborative effort and
 government funding will be required.



Funding Alternatives

Respondents were asked if they thought it would be better to have the cost of the program "buried" within the cost of the products, or added on as a separate "eco-fee" at the time of sale. There was a range of different views expressed.

In Saskatoon, this led into a discussion of the economics of a recycling program in general, and the feeling that if there is value and profit in the end products that are produced, that value should go into making the program low-cost to farmers and the program should provide some of the economic benefit back to farmers.

They keep telling us this when they advertise—(these bags) are high-quality and it's the best plastic you can buy to store your grain ... So, now we're paying a little more for these bags and they just want us to give it to a company that's going to, let's be honest, make some money out of it. So, if there isn't some kind of incentive for us as farmers to bring those bags back, then I don't care if it's buried or visible, you're not going to have anybody want to do it. (Saskatoon)

Funding Alternatives

If I'm spending \$800 a bag, I want...if somebody else is going to be making money off of it, I want to be getting my share—\$50 or \$75 for the bag! (Saskatoon)

Some Saskatoon respondents also advocated the idea of a refundable deposit. They felt that with the cost buried in the cost of the product, and no refund, that this would not motivate farmers to participate in the program, especially those who use just a few grain bags.

If it's buried and you're not going to give nothing to get them back, you're never going to get the one and two bag. He'll just take it and burn it anyhow. / Whether it's buried or visible, it doesn't matter. The issue is that you either give us an incentive to bring it back or it's probably not going to be as useful.

While this view was strongly expressed, there was an alternative view expressed by some who said they would be willing to participate in the program to "help the environment out with getting rid of this stuff." "I've got little kids and you've got to look at the future too, right?"

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Funding Alternatives

Regarding an eco-fee, one respondent in Saskatoon pointed out that the eco-fee helps convey the message to environmental advocates that farmers are participating in and supporting a recycling program.

The Saskatoon group, while strongly advocating that there be a refundable deposit or some sharing of profits (if there are profits), came around to agreeing that what is important is transparency from the supply chain and industry participants, and information about the economics of the program and what is happening to the materials.

Funding Alternatives

In Moose Jaw, the group was split on whether it is better to have the cost of the program buried in the price of the product, or broken out as a separate fee. In a brief straw poll after the discussion, two wanted a visible fee, three wanted it hidden and one wasn't sure.

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Funding Alternatives

Pros of having the fee buried in the cost

- Not aware of the fee and you just assess the cost based on your need for the product "If you use the product, you use the product."
- Seeing another line on the invoice is irritating "It just hurts more to see more fees on the invoice."" I like it hidden. I just don't like another line on the sheet."
- We can't finger point at any one thing.
- Easier to increase the fee if needed "If in the future that part of the recycling program needs more money, they just charge us extra without us even knowing about it and the program happens; it still happens and we're still paying for it, we just don't know how much." "Sometimes ignorance is bliss."

Funding Alternatives

Cons of having the fee buried in the cost

- Not as motivating to participate in the program. "But then you're more likely to just throw that leftover away rather than try to reclaim a cost you know you've already paid for."
- Doesn't show the farmer's part in the initiative.

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Funding Alternatives

Pros of having the fee itemized on the receipt (eco-fee approach)

- More of an incentive
- Conveys that the industry is taking action, moving forward: "To me, I think it's more of an incentive if I know what's going on and if I know that industry is coming out and that we're taking a step forward. Like, I'll wear a green boot and I like to see my green imprint, but I want to know about it. I like to see the track."
- Conveys a sense of participation in a positive initiative
- Can see where you're spending the money

Funding Alternatives

Cons of having the fee itemized on the receipt (eco-fee approach)

- Another fee on the invoice is irritating
- Paying a fee over which you have no control "An eco-fee ... that's going to the
 government or whoever's managing the program and you have no idea, you have no
 control over that cost."
- Makes you feel "captive" "But a fee is a fee, so you're paying an extra fee to use that
 product, which a lot of times in our business is out of our hands; we have to use those
 products, whether it's bale or twine or the jug to carry the chemical. We have to use
 those products, so ultimately we're paying twice because we're paying the deposit and
 the fee."

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CleanFARMS Collaboration with Industry and Government

Industry Involvement

Various ideas came up in both groups about the importance of industry involvement and communication. Farmers felt that they could contribute ideas as to the best process and preparation of the materials if they understand what processing takes place down the line:

If we knew what process was needed to process this stuff, it would be easier to know what's needed. Like, if they boil this stuff and this cruddy grain comes to the top, it doesn't matter. We don't want 100 bushels of grain kind of folded up inside the bag, but, I mean, you're going to get a few bales full. (Saskatoon)

One of the dairy farmers also suggested that it would be helpful to know how the recycler wanted to handle the product. That would allow the farmer to suggest handling systems that would work for them and also for the next handlers in the chain.

Farmers are innovative so if you tell them what you need, they'll find a way to handle it on the farm. (Dairy interviewee)

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Industry Involvement (cont'd)

The groups also pointed out the importance of the industry's role in helping reduce waste through improvements and innovations to equipment, packaging, and process. They compared it to the evolution in the crop protection industry away from jugs, because of the introduction of chem handlers as well as the introduction of totes. The clear message is that farmers want to see all parts of the industry, themselves included, working together to address the issues.

As noted in the later section on Messaging and Communications, industry could also help promote the recycling program by including information about how and where to take the waste, for example through a brochure or information sheet, or by including a 1-800 number on the product or packaging where farmers could get information about recycling and disposal.

Industry Involvement (cont'd)

Various modifications to machinery were suggested:

If your extractor had an attachment right on it to roll up that bag and leave it in a pile in the field, everybody would do it. / Absolutely. / Oh, for sure. / In a heartbeat! / That's probably the way to move versus anything else. / Yeah, that's a good one.

You know, these grain bags are hard to handle, but if you had that drum where you could wrap it up right off the back of your truck right away, I mean, that's huge, right?

As noted earlier, farmers also suggested that the roller equipment be designed so that the grain bag gets elevated to a higher level, allowing more opportunity for grain and dirt to fall off.

There would also seem to be good opportunity for further integration of the extracting and rolling equipment and process.

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Industry Involvement (cont'd)

As noted elsewhere in this report, respondents were emphatic that they want to be part of a collaborative program, and that industry, government and farmers all have a role to play.

There's a part I can do but there's also a part that the rest of society needs to do. If you want a clean province, the government and all the taxpayers have to be part of the solution as well. (Dairy interviewee)

One respondent also felt strongly that if plastic recycling and processing is looked at on a cross-sector basis (for other sources of plastic waste), this could result in efficiencies and more feasibility of certain options:

So, when you're starting to look at industry and looking for a product, they should start maximizing and expanding the way they're looking at it because what you're starting to look at then is economics—the bottom line. So, if you're starting to look at processing that stuff and ending up with as much product in a small area...like, that's where they should be looking at. (Moose Jaw)



Drivers and attitudes

The groups were asked what they saw as the main reasons that farmers would want to recycle, as well as the main barriers. Understanding the emotional and rational decision drivers is key in developing effective communication messages.

As seen on the following slide, the top drivers are to "Do the right thing", take care of (and not harm) the land, air and environment for the sake of neighbours, family and community and future generations.

It was clear from these farmers that if given a convenient program with a reasonable expectation of their participation in terms of time or resources, they would participate because it is the right thing to do. This is supported by their candid feedback and the fact that they attended the group at all - they worked hard and participated fully in the focus groups to provide input and explain the issues and considerations.

Drivers and attitudes

In terms of tangible benefits, farm cleanliness (rodent-free, no trash lying around, running a clean operation) and image of the farm / industry are strong drivers (and this is also an emotional benefit). Related to this is the benefit of pride in running a sound operation with appropriate business and environmental practices and being a partner in an industry that is moving forward to be environmentally sound.

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Drivers and attitudes

- Ethics and morality Do the right thing ***
- Environmental stewardship, next generation ***
- Neighbour, family, community health considerations, air quality ***
- Ambition, motivation, energy (time and energy to do what it takes to recycle)
- Appearance, aesthetics, high visibility of grain bags or large items looks bad
- Cleanliness
- Rodents "90% of our rat problem comes from the bags."
- · Partnerships, feeling a part of the industry, participating in economics of recycling
- Deposits, refunds
- Municipal bylaws
- Image of the industry and of the farm "You start with your own image and the industry is going to improve."

Barriers to recycling

There are some barriers that counteract the desire to do the right thing for the environment and all the other reasons to recycle. As seen on the following slide, the top barriers would relate to the cost to the farmer in terms of time, money, labour and general inconvenience. The flip side of this would be the "ease" and immediacy of the current most common practice of burning.

One respondent outlined the issue as one of balance, and explained it in a few ways:

Ethics, like the balance between...like, what are you saving? Why are you doing this? Are you doing it just because of aesthetics or are you talking about the balance of hydrocarbons?

I'm trying to figure out the (environmental) imprint and the convenience, like, what is morally...where is this at? And that's the balance in my mind.

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Barriers to Recycling (cont'd)

- Hard costs gas, logistics ***
- Time, labour ***
- Inconvenience how it's done, extra steps and extra time required ***
- Laziness, attitudes need to change
- No convenient options, lack of alternatives
- Grain bag roller may not be available
- Grain bag roller may not work well
- Grain bags hard to handle

Barriers to Recycling (cont'd)

The following comments show the tug and pull between wanting to recycle and do the right thing, versus the question about "what's in in for me?"

Well, in theory, you're supposed to be saving the environment. So, that's what you're supposed to be getting out of it. You know, this money thing to me is so irrelevant, especially to us who have kids. So, you don't have to pay me anything to recycle, just make it semi-convenient. You know, I'll recycle because I don't want plastic blowing around my farm and I don't want to pollute my area and my country. So, I don't have to get paid for it, I just have to have a convenient way to get rid of it. Saskatoon Make it convenient and we will come," but if a guy's got to go through a whole lot of trouble, not going to bother. (Saskatoon)

Well, that's part of the reason I haven't gone to grain bags is partly to do with dealing with the mess because I know with the silage wrap it's such a mess. So, we just spent money buying bins. (Saskatoon)

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Message Testing

Respondents were given a written exercise where they were asked to read a number of possible positioning statements related to recycling. They were asked to use a green pen to indicate messages that they thought would work well and a red pen to indicate messages that they thought would not work as well.

As seen on the following two slides, most of the messages were quite positively received. The two receiving the most positive "votes" were those that talked about equivalent diesel fuel saved or used. However, this seemed to be misinterpreted by a few as how much fuel (gas) they would have to pour on the material to completely burn it. However most understood the sentiment and found the statements with "equivalents" interesting.

Messages related to stewardship and the environment scored highly.

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Message Testing (cont'd)

Message	Total Red	Total Green
Recycling one roll of bale wrap saves the energy equivalent of 74 litres of diesel fuel	2	13
Burning a grain bag would be equivalent to burning 311 litres of diesel.	3	12
Burning grain bags, bale wrap and twine releases many harmful toxins into the air. Recycle instead. It's better for the air you're breathing, and it's better for the environment.	2	12
Stewardship first. We're all working responsibly to protect people and the environment.	4	12
Recycling ag plastics helps take care of the rural environment.	2	12
Recycling one grain bag instead of burning reduces greenhouse gas emissions by 653 kg of CO2 equivalent.	3	12

Message Testing (cont'd)

Message	Total Red	Total Green
Recycling 3½ grain bags saves the energy equivalent to that used by a Canadian household for an entire year	5	10
Through the recycling of agricultural plastics, farms are cleaner and safer.	3	10
Help us keep SK farms clean. Don't burn your grain bags. Burning plastic creates air and water pollution on your farm and beyond.	1	10
Recycling one spool of baler twine is equivalent to recycling 735 one-quart polypropylene plant pots	7	8
Open burning of agricultural plastic is illegal in Saskatchewan. Don't burn your grain bags, bale wrap or twine. It's harmful to the environment and it is illegal.	9	8

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Message Testing (cont'd)

Two of the messages elicited mixed reactions with roughly equal portions giving them negative versus positive reviews:

- Recycling one spool of baler twine is equivalent to recycling 735 one-quart polypropylene plant pots
- Open burning of agricultural plastic is illegal in Saskatchewan. Don't burn your grain bags, bale wrap or twine. It's harmful to the environment and it is illegal.

The first one may not have resonated due to comparison with a different sector that they couldn't relate to as well as some of the other statements.

The second was perceived as being somewhat "scolding" in tone.

Message Testing (cont'd)

What worked well:

• Comparing recycling (or the alternatives) to other uses

Talking about burning grain bags being the equivalent of burning 311 litres of diesel. / Yeah, exactly. I'd never heard any stats like that before. / Yeah, it's interesting. And not many guys would throw 311 litres of diesel away. (Saskatoon)

• Environmental stewardship messages:

But I think the key words that are used right now are "environmental stewardship." That's a key word and if you can sit there and put that in front of farming that we are environmental stewards, it looks better for us ... you have to make it look like you are trying to do the best that you can for the environment at this point in time. (Saskatoon)

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Messaging - Suggestions

Some Moose Jaw respondents were interested in seeing more economically focused messages, versus ethical or stewardship messages.

I'm just saying I'd like to see more economics as well than just thinking of the green footprint. Yes the environment plays a big part in it, but it all comes down to the bottom line. That's what it comes down to. (Moose Jaw)

The Saskatoon group preferred the stewardship messages.

Pollution being harmful and burning is doing something to the environment we don't need right now. (Saskatoon)

For the Saskatoon group, the more positive messaging of what could be saved was more appealing than the more negative-toned messages.

Messaging – Best Ways to Communicate

When asked how best to get messages about recycling out to farmers, respondents had these suggestions:

- TV, radio, Western Producer
- Through kids "Yeah, get your kids and grandkids telling you about it and do it in such a
 way that they have a voice and listen to the children. ..., they have the power to get me
 to go and do stuff! It works! It's the truth!"

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Messaging - Media

Farmers in Saskatoon emphasized that farmers know that recycling is the right thing to
do, and if a good program is created and is communicated to them, they will participate.
They would need to know where, when and how.

Well, you're trying to communicate to farmers, but we basically know all this stuff already. You don't need to communicate to us. What you need to do is get some programming in place. We know that we're damaging the environment by throwing plastic out there. We know all this. You just have to tell us where these places are. Otherwise, it's all common sense.

I think the guys dealing in grain bags, this is what they have to give you every time they sell you a grain bag: one piece of paper saying where the dump-off is or where the pick-up is and how to deal with it.

Questions / Information Needs

Farmers in both groups had a need to understand the relative impact of the various methods of disposal.

I personally would like someone to tell me what's worst for the environment because I don't know. I'm just asking. Like, what would be worst for environmental? Burning or landfill? I haven't got a clue.

/ I'd like to know how long, when it's in the ground, how long it takes to deteriorate and what are the by-products of it deteriorating into the ground. I don't know the answer to that question and that's something that would be important for me to know. / And I'd like to know what's worse, to burn or to bury. / Also, who's making money off of this program.

Some also would like to know what happens to the material, and what it is made into, and whether there is profit made from it.

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Messaging – Emotional Drivers

Throughout the focus groups and in the interviews, we saw that farmers want to approach this issue constructively, creatively, collaboratively and innovatively.

Several times, the point was made that farmers are adaptable and innovative, and have a great deal of ingenuity. Their involvement going forward with the design of a program will be very valuable.

And our transition is such that we will adapt very quickly if we have to; if it's a financial situation, farmers adapt very quickly. And generally, over the years, we've adapted many, many times. (Saskatoon)

