MOOSE JAW RIVER
WATERSHED
STEWARDS INC.

MANAGING LARGE VOLUMES OF AGRICULTURAL PLASTIC, TWINE AND GRAIN BAGS

healthy fields
healthy environment
healthy families

www.mjriver.ca

MOOSE JAW RIVER WATERSHED STEWARDS INC.

INTRO

The Moose Jaw River Watershed Stewards Inc. (MJRWS) are a non-for-profit, grass roots stewardship group that strives to improve ecosystem health and source water protection by preventing pollution and managing activities that (may) threaten the watersheds' water resources, flora and fauna by implementing beneficial management practices. We feel recycling of agricultural plastics helps satisfy our mission to engage stakeholders as stewards, supporters and advocates for the adoption of sustainable and environmentally sound management practices.

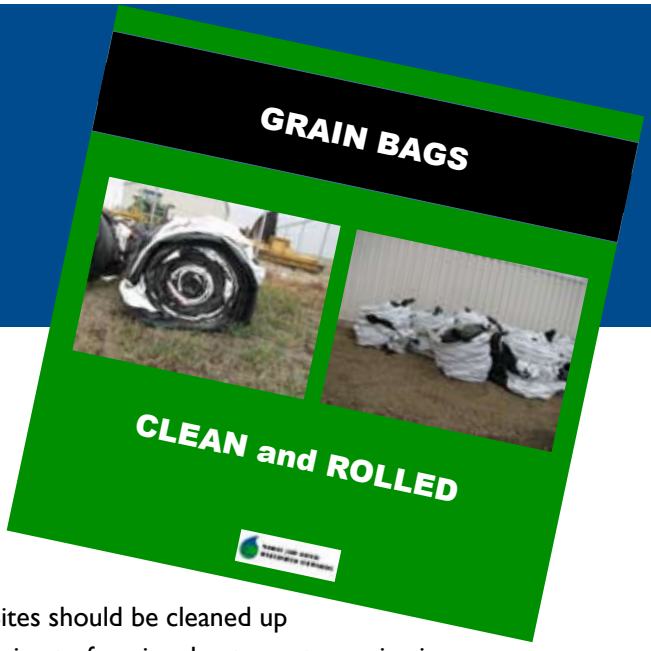
MJRWS started collecting information on the potential for the recycling of agricultural plastics as a response to their membership inquiries on alternatives to burning twine and grain bags in the fall of 2009. Since then, the MJRWS have run a variety of pilots to address the on-farm hazardous waste of open burning of plastics. It brought together stakeholders through a variety of meetings, presentations, and workshops for communication, education and to determine participants in a future sustainable program for the regulation and potential Product Management Plans for Saskatchewan. The development of resource materials for producers, retailers and industry was only part of this project. Over 125 producers were directly impacted from this project in the Moose Jaw River Watershed boundaries alone, and approximately 3000 people in Saskatchewan, Alberta and Manitoba attended various workshops, meetings, and presentations on recycling agricultural plastics. The MJRWS recycled 338,302 Kilograms of grain bags (polyethylene) and collected 14,000 Kilograms of twine (polypropylene) throughout the duration of this project. We are able to provide valuable feedback details to Ministry of Agriculture and Environment, as well as CleanFARMS on feasibility and collection options. Feedback was also provided to many producers in order to provide lessons learned from our experience to avoid future lag time and mistakes for consolidation of plastics on the farm. Saskatchewan is now seen as a leader in Western Canada for agricultural plastics recycling, partially due to the examples we are setting here in Moose Jaw. This pilot has provided valuable information to determine what an industry lead program would potentially cost. Regulation was submitted June, 2013 with an implementation plan for a sustainable recycling program by 2014. As we move forward into a more sustainable industry lead program it is important to remain optimistic that there will be an increase in communication and the dissemination of the information about recycling agricultural plastics in Saskatchewan. High volumes of grain production in Saskatchewan has a shown an increase in grain bag usage. Over the year's grain bags has become a part of many grain operations. It is important to ensure options for producers to recycle agricultural plastics is available and easily accessible.

Sincerely,
Tammy Myers
Watershed Coordinator
Moose Jaw River Watershed Stewards Inc.

CONSOLIDATION **SITE DETAILS**

- Should be an area that producers would frequent the site such as local landfill, transfer stations or other agricultural services in the area.
- Should be at least an acre or considered large enough for a semi to load.
- The site should consider that large amounts of sorted plastic will be stored until a full semi load is obtained.
- Should consider an area with a loading dock but not necessary.
- Site should have access to appropriate loading equipment such as a skid steer, telehandler, etc.
- If near a landfill, the site should be a separate fenced area.
- A sod base is preferred, but not necessary. Gravel base will work be aware that loads could become further contaminated during shipping from the skid steer, mud and snow and ice.
- Municipality (urban or rural) in the vicinity should be engaged and have "buy-in" prior to set up and expectations and agreements made in writing to ensure the sustainability of the program in the area beyond political duration of councils, etc.
- Area should be fenced to reduce debris from blowing away.
- All materials should have a segregated designated area (e.g. twine, bale wrap, grain bags, net wrap, etc.)
- The consolidation site should consider a rural area as plastic could be contaminated with pests whenever a producer drops off plastic.
- Signage should designate each type of ag plastic
- Loose plastics should not be accepted as these can easily be blown around and cross contaminate other piles.
- UV protected bags should be strongly encouraged. Leaf bags or other LDPE products to hold net wrap, twine, bale wrap, etc. will be heavy and may not weather well until a full semi is obtained especially in climates where there is severe seasonality.
- Options are mini bulk bags or contact the processor and discuss how they would like the materials. Negotiate as they may reject shipments based on some criteria.
- If there is very little of any one particular plastic, consider further consolidation where collection is the highest. For example: if small amounts of twine is collected at 3 areas and one area has large volumes, consolidate throughout the year and bale once desired volumes are obtained.
- Advertising is important to educate the public on where depots are, what to do on the farm with ag plastics and what will be accepted once delivered to depots (and what will be rejected).
- Regardless of how ag film is baled it should be a consistent size. This allows for easier loading, stacking and heavier weights on trucks to ship.
- Smaller bale sizes could be useful when trying to fill in spaces at the top or sides.
- Every bale should be securely held together with twine or bundle wrap.

CONSOLIDATION **SITE DETAILS**



- Bales with duct tape, hockey tape, tuck tape or not secured so as to hold all layers together should be rejected.

>> SHIPMENT OF GRAIN BAGS:

- The ***cheapest*** is to ship on a van trailer but this will require a loading dock.
- Search for drivers with open top trailers. This will allow for building the load from the bottom up and then topping off the load without worry of puncturing the roof.
- Trailers should be lined with plywood or steel. As the bales of plastic are loaded, they are stacked. The skid steer could easily puncture the side or the roof, and the load may bulge on a light aluminum trailer.
- Sites that don't have a loading ramp should consider higher costs of shipping as a driver will have to come out with his own ramp and/or skid steer.
- Plastic should be loaded with some sort of grapple or forks and never a bucket. The bucket could potentially contaminate the load with soil, sod, snow and ice with the scooping action. This contributes to false load weight reading of plastic as well the load may be rejected at the processor due to contamination levels being too high.
- Sites should be cleaned up prior to freezing due to pests moving in and hibernating for the winter. Tightly compacted bales will have less incident of pests but will not eliminate them.
- Shipping in winter is possible but keep in mind that the bales will be frozen and harder to maneuver, making loading more difficult and less compaction may lead to lighter weight over all on the truck
- Round bales should be stacked flat (like a cinnamon bun) on the bottom at least 2 high (depending on size), this prevents the load from becoming too unstable during shipping.
- Ensure the processor has booked a delivery date and time for your shipment and are aware of the approximate volume/weight.

SHIPMENT OF TWINE

Packing the trucks tight for shipment has been a challenge. Therefore twine should be baled in a baler designed for large rectangular bales. Ensure that baler is free from debris that could contaminate twine bales. Proximity of sites to a facility that has this infrastructure should be considered when establishing twine collection sites.

The twine will potentially be shipped to Gopher Plastics in Minnesota. They accept full truckloads of Post-Consumer Twine which needs to be stacked to achieve 42,000-47,000 lbs per truckload. The twine they receive needs to contain less than 8% waste. Deductions will be based on level of contamination. Fair Market Value is paid for the twine upon delivery.

Regarding the plastic bags being using to hold the twine:

There has been some problems with bags breaking down due to everything sitting for a couple of years while waiting for a full semi load to ship, and it may not be a problem going forward if the twine volumes of plastics are obtained and move out more regularly. Consider costs of custom baling, shipping and handling into the fair market value will be necessary to calculate net costs.

FAIR MARKET VALUE IS PAID FOR THE TWINE UPON DELIVERY.

TWINE COLLECTION **ON THE FARM**

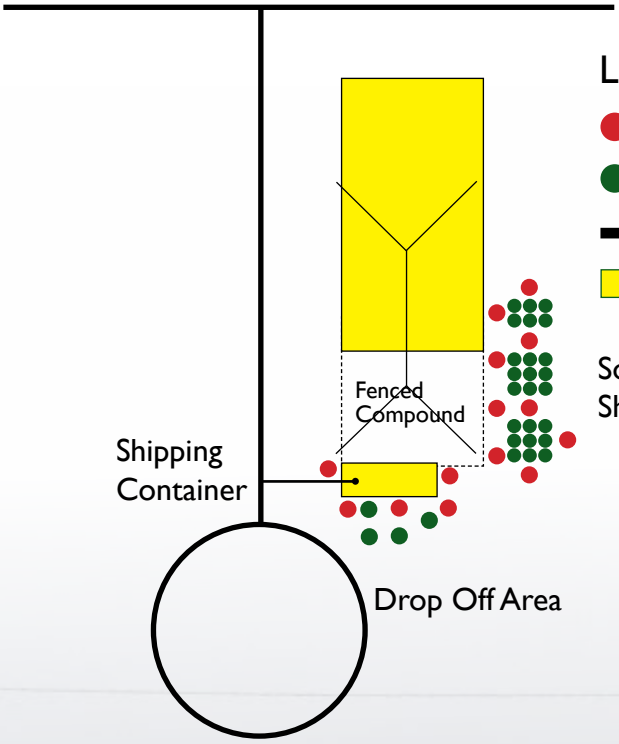
CONSOLIDATION BMP'S TO CONSIDER WITH ON-FARM COLLECTION:

- The recycler (Bridon Cordage) would prefer to have loose twine without knots so that it can be cleaned when it arrives at their plant.
- If the twine is perfectly clean then there is no issue with knots but if there is knotted twine that has debris tied up in it then it will be discarded as waste.
- Twine cleaned off the cutting bar of a bale processer is usually very knotted but the debris is actually quite small and if it is given a good shake to get the dust off then from what I have seen it will be below the tolerance levels (<8%) for an acceptable product.
- Place twine in 40 gallon clear plastic bags, some are available for free just call Tammy Myers at the Moose Jaw River Watershed Stewards Inc. 1-306-691-3399.
- Avoid placing twine in thin garbage bags as these will break open and cause a big mess on the farm or at a consolidation site if weathered.
- You can use mini tote bags but be sure there is no chemical residue from seed or granular materials otherwise it may be deemed toxic, contaminated and unrecyclable.

GRAIN BAG COLLECTION **ON THE FARM**

- Grain bags should be rolled as tightly as possible with a grain bag roller.
- Use of other machines to roll grain bags is currently under review but not approved at this point due to safety issues.
- Rolling in the field as soon as possible once grain is extracted is preferred. The longer the bag sits the higher incidents of pests and higher level of contamination from debris.
- If bags have to be brought back to the farm, store away from home dwellings in an area the tractor can access to drag out when ready to be rolled.
- Once rolled, store like hay bales end to end to shed water.
- Use a grapple or forks to move plastic, as a bucket will contaminate plastic with sod or soil.
- There are currently 7 rollers available throughout Saskatchewan. Visit Provincial Council of ADD Boards (PCAB) online http://saskpcab.com/ to see where the closest roller is to you.
- Grain bag rollers may also be purchased privately or as a collaborative effort.
- Consolidation on the farm is suggested to avoid excessive time and travel to use the roller and drop off grain bags at consolidation depots especially if you are in excess of 50 km away.

MOOSE JAW **STORAGE FACILITY**



LEGEND

- 18-20 Bait Stations
- Grain Bags
- Roads
- Buildings

Sorting/
Shipping Area

- Contact local pest control officer to create a schedule for control and determine who will pay for the control.
- Pest control is necessary at least two weeks prior to shipping to processor.

Deliveries will be received at the drop off area from farms then moved by the RM to sorting area. In order to avoid destroying bait stations they will be moved by the RM/PCO.

SHIPPING WILL OCCUR FROM SORTING AREA.

RESOURCE LIST

CleanFARMS Canada:
Pesticide container recycling
Obsolete farm chemical collection
Saskatchewan Agricultural Stewardship Council
sasc@cleanfarms.ca
627-21 Four Seasons Place
Etobicoke, ON Canada M9B 6J8
1 877 622 4460
info@cleanfarms.ca

Moose Jaw River Watershed Stewards Inc.
Agriculture Plastics Recycling Program Manager
Tammy Myers
#3 – 16 Lancaster Road
Moose Jaw, SK Canada S6J 1M3
1 306 691 3399
www.mjriver.ca

Provincial Council of ADD Boards
Ag Plastics Coordinator
Travis Quirk
102-333 25th Street East
Saskatoon, SK Canada S7K 0L4
1 306 955 5477
Toll-free: 1-866-298-7222
www.saskpcab.com

Brown Bros. Welding and Fabrication
Grain Bag Rolling Equipment
Brady Brown
Milestone, Saskatchewan Canada
1 306 436 7616 or 1 306 436 7735

Saskatchewan Ministry of Environment
Waste Stewardship and Recycling Section
Articles released from Ministry of Environment link:
http://www.saskwastereduction.ca/assets/upload/pdf/ag%20plastics%20pdfs/effects-of-buring-plastics.pdf
http://www.saskwastereduction.ca/assets/upload/pdf/ag%20plastics%20pdfs/dont-burn-bags.pdf
4th Floor, 3211 Albert Street, Regina, SK, Canada, S4S 5W6
1 306 787 5021
http://www.environment.gov.sk.ca/

Saskatchewan Waste Reduction Council
On-line information for resources, links and downloads
#208, 220 - 20th St W
Saskatoon, SK S7M 0W9
1 306 931 3242
info@saskwastereduction.ca
http://www.saskwastereduction.ca/recycle

The Environment and Plastics Industry Council
5915 Airport Road, Suite 712
Mississauga, Ontario L4V 1T1
Tel: 905 678 7748
Fax: 905 678 0774
www.plastics.ca/epic
EPIC is a council of the Canadian Plastics Industry Association
Many of the BMPs in this project correlate with this report.

Saskatchewan Agricultural Film Plastic Recycling Study
CleanFARMS Inc.
Saskatchewan Ministry of Environment
04.30.10
Prepared by
Blacksheep Strategy Inc.

Recycling Council of Alberta and the Alberta Plastics Recycling Association
"Tackling the Ag Plastics Dilemma"
Forage plastics recycling in Alberta.
http://www.saskwastereduction.ca/assets/upload/pdf/ag%20plastics%20pdfs/tackling-dilemma.pdf

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The Provincial Council of Agriculture Development and Diversification ADD Boards for Saskatchewan Inc.

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