

Best Practices Guide for Agricultural Plastic Film



EPIC

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Introduction

Over the past few years, there have been several organizations interested in recycling used agricultural plastic film. Most of this film is low density polyethylene (LDPE) or linear low density polyethylene (LLDPE). Several pilot projects have taken place across the country. The Best Practices contained in this booklet are based on the learnings from these pilot projects.

The research into finding stable and sustainable end markets for used agricultural film continues. The recycling of these materials is often more difficult than for most other types of plastics.

Despite these difficulties, new companies continue to crop up. Many of these have their own proprietary recycling processes and some even have specialty niche product applications. The plastic lumber industry also remains a potential market. Escalating oil prices and increased commodity prices have created interest in various plastic materials previously considered “too difficult” to handle.

Additionally, the Canadian plastics industry continues to investigate potential ways to increase the diversion of these materials.

What can be recycled?

- Plastic stretch wrap
 - Silage bags
 - Cover sheets for bunker silos
 - Haybale wrap
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Why recycle?

There are several reasons that farmers should consider recycling their used agricultural plastic film.

- 1) Government legislation may prohibit the open air burning of plastics. Even if there is no legislation in place, the burning of plastic and other farm waste (whether in the open or in a backyard oil drum) produces a “chemical soup” that is very complex and toxic. Farmers should reduce their health risks associated with inhaling these fumes.
 - Toxic combustion products are a heterogeneous mixture of gases, liquid droplets and smoke particulates. Smoke particulates may be small enough to be inhaled deeply into the lungs. Prolonged or repetitive exposure may result in chronic conditions.
 - The common practice of throwing pesticide containers into the fire may transform the fire into a substance even more noxious, which will be emitted into the surrounding atmosphere.
 - If using drums for the burning of waste, the chemicals are leached from the ash residues in the drum with every rain. These chemicals may eventually contaminate a larger area. The solid residues from the drum should be treated as potentially hazardous materials and disposed of in the appropriate manner.

Why recycle? (continued...)

- 2) Local landfills may find agricultural films too bulky to handle.
- 3) Recycling it allows for the material to be converted into a new end product.

Results to Date

Various pilot studies completed to date have shown that agricultural plastic film can be collected and successfully recycled into a new and useful end product.

These pilots have also shown that farmers will participate if a practical collection system is offered. Farmers have been able to develop simple on-farm routines for storing and delivering the clean plastic to a collection site, where it is then compacted and shipped to a recycler. Studies have also shown that municipalities can be valuable partners in the collection process.

What do farmers need to do?

In order for used agricultural film to be accepted for recycling, it must be dry and clean (less than five per cent contamination). Excessive contamination of dirt, stones, silage, etc. can result in the plastic being rejected by the recycler. It is extremely important to keep the plastic as clean as possible.

Three Easy Steps to Plastic Film Recycling

1. Preparation of the Film

2. Collection

3. Markets

1. Preparation of the Film

(i) Shake the plastic after removing it from the bale to remove pieces of forage, dirt, snow or other contaminants.

(ii) Put the plastic where it can dry inside.

This is a key step in the overall on-farm process. The wrap will dry within one to three days. Good places to hang the wrap for drying include wagon racks, posts, barn beams, etc. A brush could be kept nearby to brush off excess dirt.

(iii) Shake again to remove any dirt.

Once the plastic film is dry, you will be able to shake off a lot of the remaining forage. The plastic will dry between feedings so this can be done in a one-step process by placing the wet plastic to dry where the previous plastic was. The plastics may be folded to conserve space, but it is not necessary to use twine.

(iv) Store the plastic.

It is important to store the plastic in a convenient location where it will stay dry and clean. Keep it away from sunlight to prevent any further degradation.

For hay bale wrap, cut the plastic straight across the radius and peel back the plastic so that the film remains in one piece.

Three Easy Steps to Plastic Film Recycling (continued)

2. Collection

It is important to work with local farming and agricultural organizations. There are several different types of collection methods available and your community may choose to offer any one of these. Collection methods may include:

- The farmer being responsible for bringing the plastic material to a drop-off centre (i.e. landfill, roll-off container, etc.)
- The farmer being responsible for dropping off the plastic material during designated collection days only.
- Local entrepreneurs or recyclers willing to pick up/bale on site.
- Collection/drop-off programs through local co-ops or other farming supplies centres.

3. Markets

There are several ways in which you can assist in the recycling of used agricultural plastic film. For example:

1. Encourage local programs to establish a market.
2. Where possible, use the contacts developed by local recycling operators.
3. Provide free initial samples to interested industries/companies.
4. Your local municipality is a good source of information and may be able to recommend local recyclers/plastic film collectors in your area.

End Products

Products made from recycled agricultural film can include, but are not limited to:

- Plastic lumber
- Puckboard or baleboard (plastic plywood)
- Horse fencing
- Farm pens for dairy, hogs and poultry

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