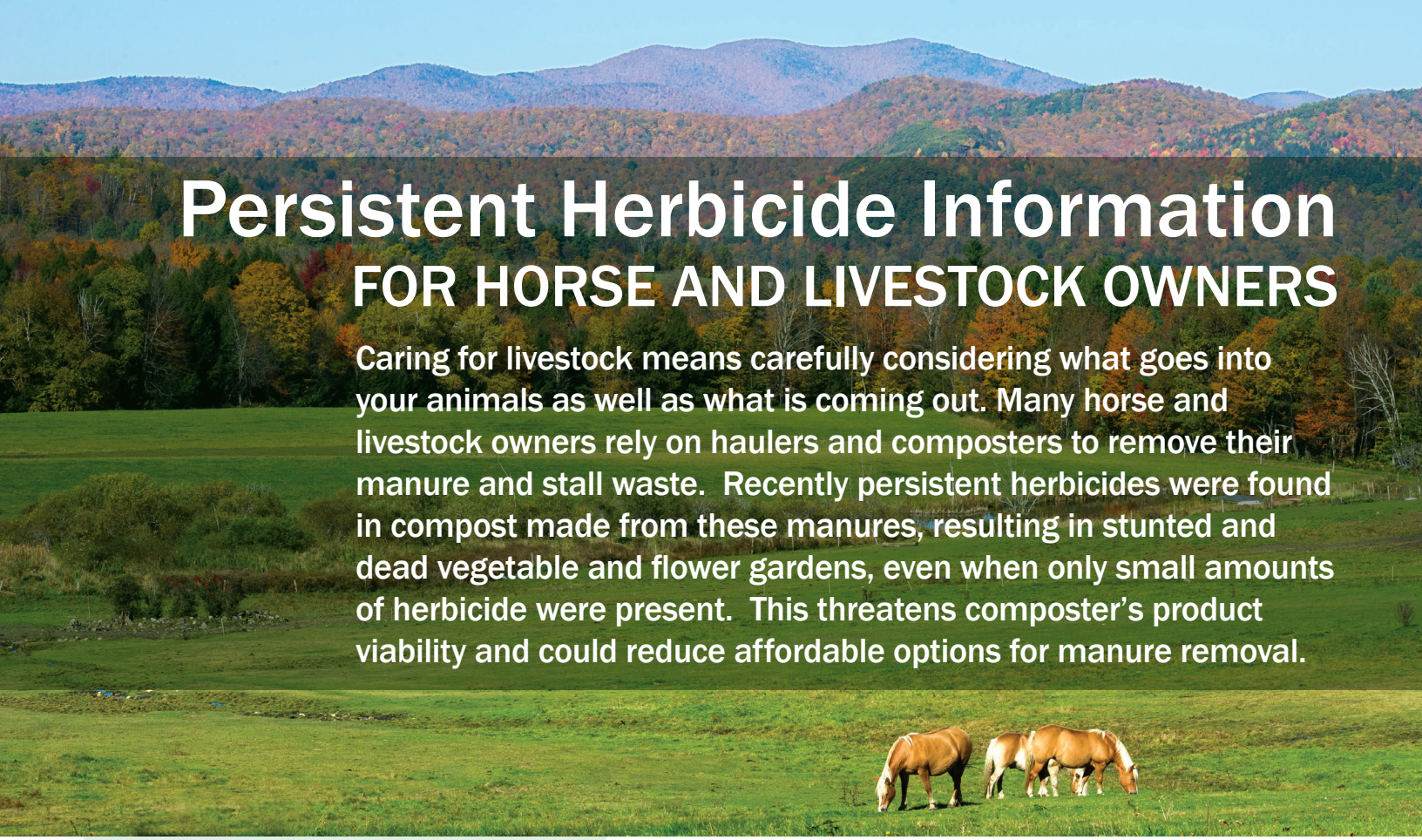


Persistent Herbicide Information
FOR HORSE AND LIVESTOCK OWNERS

Caring for livestock means carefully considering what goes into your animals as well as what is coming out. Many horse and livestock owners rely on haulers and composters to remove their manure and stall waste. Recently persistent herbicides were found in compost made from these manures, resulting in stunted and dead vegetable and flower gardens, even when only small amounts of herbicide were present. This threatens composter's product viability and could reduce affordable options for manure removal.

What are Persistent Herbicides?

Persistent Herbicides are chemicals used to kill weeds that compete with grass and grain crops. While they are often used to target weeds such as thistle and bed straw, they are effective at damaging other dicots and broad leaved plants (tomatoes, beans, etc). Some of these herbicides are new and used because they require fewer applications and are less toxic to mammals, fish, and waterways than other chemicals.

COMMON PERSISTENT HERBICIDES

Picloram (Active Ingredient)
Manufactured by Dow AgroSciences
Trade Names: Tordon, Grazon, Access, Pathway

Clopyralid (Active Ingredient)
Manufactured by Dow AgroSciences
Trade Names: Curtail, Redeem, R&P, Transline, Confront, Lontrel

Aminopyralid (Active Ingredient)
Manufactured by Dow AgroSciences
Trade Names: Milestone, Forefront, Chaparrel

How are Animals Exposed?

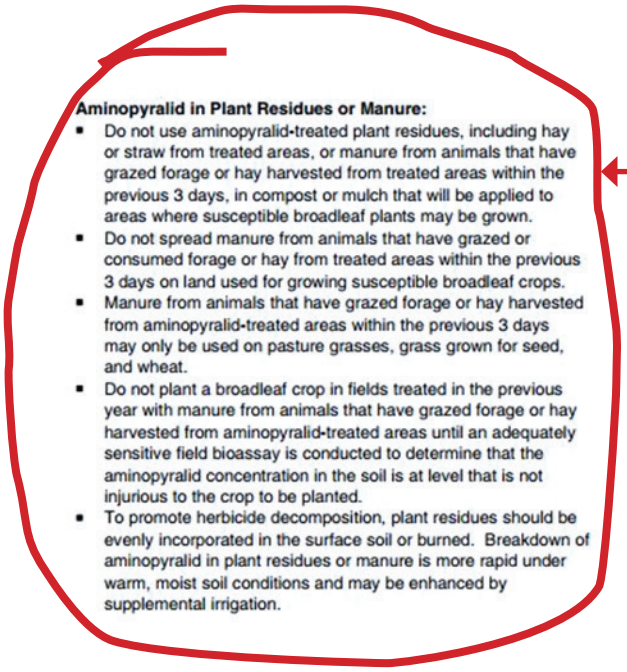
Persistent herbicides are prevalent in pesticide products marketed to growers of hay and pastureland. In addition to hay, they also can be found in grains, beets, molasses and other ingredients that go into commercial livestock and equine feeds. While animals that eat and digest the treated feed are not harmed the herbicides may still be present in their manure and urine.

What is the Problem with Persistent Herbicides?

Persistent herbicides are able to pass through animal's digestive systems, survive the heating and composting process and still damage sensitive broadleaf garden plants such as tomatoes, beans, peas and many common flowers. Even at concentrations as low as 1 part per billion plants can show symptoms that include twisted and stunted stems, curled leaves, reduced and misshapen fruit, and poor seed germination.

In the summer of 2012, compost made from herbicide contaminated manure damaged over 500 home gardens in Vermont (see case study for more details: http://tinyurl.com/TwistedTomatos). This incident caused hundreds of thousands of dollars in damage and impacted the gardens and crops of many local residents and farmers.

"To help keep Vermont's local food system sustainable, all livestock owners should be managing their farm wastes responsibly." — Chuck Ross, Secretary, Agency of Agriculture, Food and Markets



Aminopyralid in Plant Residues or Manure:

- Do not use aminopyralid-treated plant residues, including hay or straw from treated areas, or manure from animals that have grazed forage or hay harvested from treated areas within the previous 3 days, in compost or mulch that will be applied to areas where susceptible broadleaf plants may be grown.
- Do not spread manure from animals that have grazed or consumed forage or hay from treated areas within the previous 3 days on land used for growing susceptible broadleaf crops.
- Manure from animals that have grazed forage or hay harvested from aminopyralid-treated areas within the previous 3 days may only be used on pasture grasses, grass grown for seed, and wheat.
- Do not plant a broadleaf crop in fields treated in the previous year with manure from animals that have grazed forage or hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
- To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.

In response, the Vermont Agency of Agriculture, Food and Markets (AAFM) now regulates all Aminopyralid and Clopyralid products with pasture or hay use sites on their labels as Class *"A" State Restricted Use* products in Vermont. "Restricted use" classification requires applicators to be licensed and certified to purchase and use these products. The usage and sales are also tracked and recorded, and must be reported to AAFM annually or upon request. New label language on Aminopyralid products (see sidebar) makes it possible to take enforcement action against applicators or farmers that allow waste (manure and bedding) containing herbicide residue to be moved off the farm from where initial application occurred.

What Does this Mean and What Can You Do About It?

Since even the tiniest amount of persistent herbicides (1 ppb) can have a devastating impact on compost operations, horse and livestock owners and managers can help prevent herbicide damage by:

1. Avoiding the use of these persistent herbicides on pastures and/or hay lands. If hay is purchased, ensure that herbicides have not been used for at least the past two growing cycles. If there is any potential for these herbicides to be present in manure and stall waste, notify your hauler and local compost operator.
2. Ask if your feed company or hay supplier is using these herbicides. **Applicators of herbicides need to notify farmers of the inputs they're using and failure to do so may result in penalties.**
3. Consider trying alternative feeds that include alfalfa or other legumes. Because alfalfa is a dicot, hay containing alfalfa may not have been treated with persistent herbicides. Organic hay and feed sources may also decrease potential herbicide threats.

Horse and other livestock manure along with bedding, are excellent raw materials for composting. Composting facilities also provide an affordable option for disposal of manure and stall waste. To maintain this good working relationship herbicides must be used responsibly with full accountability, tracing inputs from the point of application all the way through to manure disposal.

VERMONT AGENCY OF NATURAL RESOURCES
AGENCY OF AGRICULTURE, FOOD & MARKETS

UNIVERSITY OF VERMONT EXTENSION
CULTIVATING HEALTHY COMMUNITIES

CAV
Composting Association of Vermont

Produced by the Vermont Agency of Natural Resources; the Vermont Agency of Agriculture, Food and Markets; the Composting Association of Vermont; UVM Extension; and members of a compost working group.

For more information on persistent herbicides, talk to your composter or hauler, or contact:

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9/23/15