



Herbicide Carryover from Manure & Other Organic Matter

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Where Carryover Comes From

- Herbicides used for weed control in:
 - Pastures & hay
 - Grain crops
 - Lawns
 - Some fruits & vegetables
- EPA & EU evaluations
 - Safe for use in animal feeds
 - Pass through digestive tract
 - Excreted in urine & manure
 - Can remain active even after composting
- Will carryover extended time in original form i.e. hay, straw, etc.



<http://1812garden.hamiltoncollegeblogs.com/index.cfm/2008/12/2/All-in-Favor-of-Manure>

Herbicides Likely to Cause Carryover Issues

Herbicides that contain picloram, clopyralid, aminopyralid, Sulfonyl ureas		
Pasture & agronomic	Turf & lawns	Fruit & vegetables
Curtail (2,4-D & clopyralid)	Confront (triclopyr+clopyralid)	Clopyr AG (clopyralid)
Cimarron Max (metsulfuron, dicamba and 2,4-D)		
Dicamba DMA Salt (dicamba)	Dicamba DMA Salt (dicamba)	
Forefront (aminopyralid + 2,4-D)	Lontrel (clopyralid)	Stinger (clopyralid)
Grazon Next (aminopyralid + 2,4-D)	Millennium Ultra Plus (2,4-D+clopyralid+dicamba)	
Grazon P+D (picloram+2,4-D)	Millennium Ultra & Ultra 2 (2,4-D+clopyralid+dicamba)	
Milestone (aminopyralid)		
Redeem R&P (triclopyr+clopyralid)		
Surmount (picloram+fluroxypyr)		
There may be other herbicides, but the main point is to know what has been applied and what may cause carryover problems. Source of information was NC State University Cooperative Extension.		

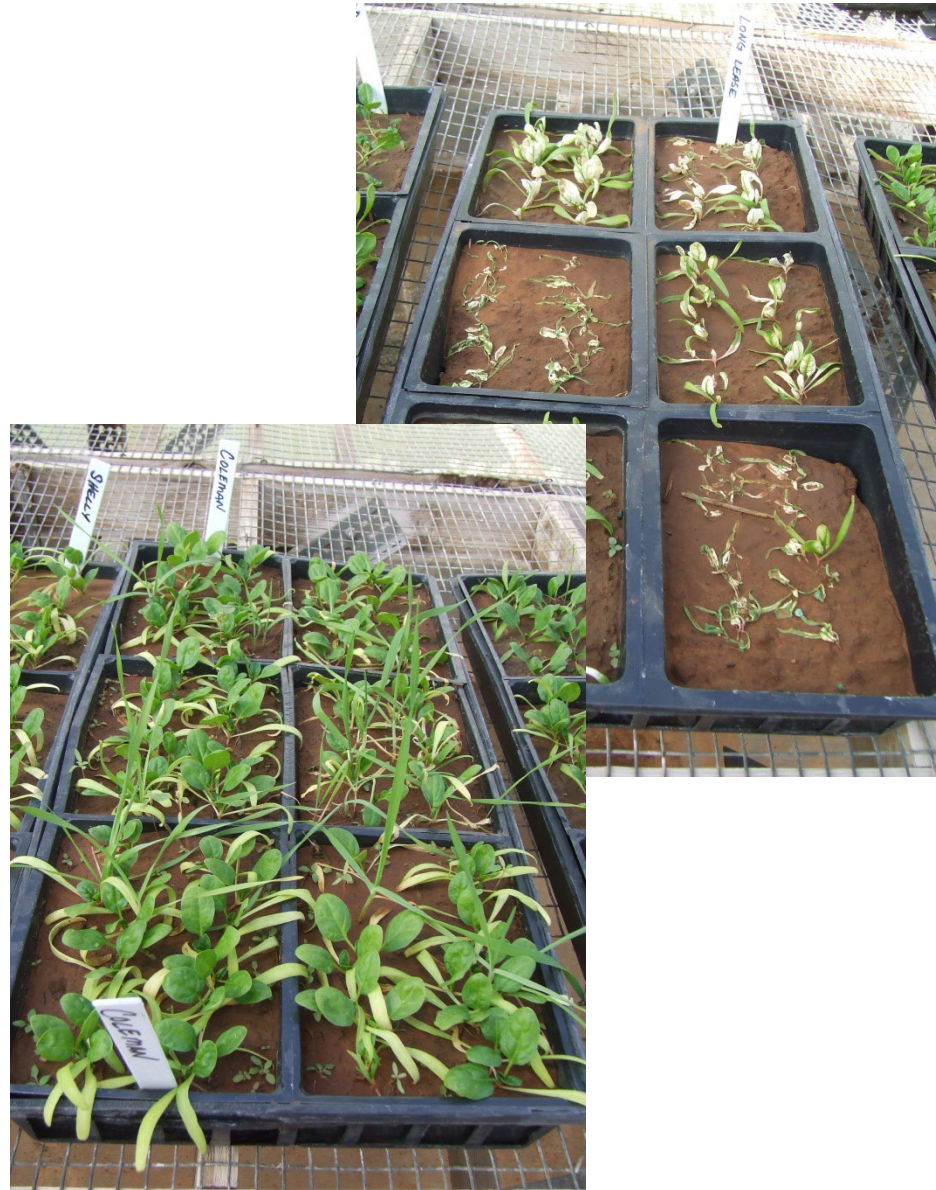
Bioassays Check It Out!

- Prepare multiple pots of:
 - Suspect materials
 - Checks (clean potting mix)
- For suspect manures or compost:
 - Collect random samples of suspect material
 - Shovel-fulls from potential source 20+
 - From deep within pile
 - Mix well
 - Prepare 1:1 mix of sample + potting mix



Bioassays Check It Out! Continued

- For suspect hays or straw
 - Mulch pots of growing media (heavily)
 - Equal # of un-mulched pots
- Plant indicator plants or seeds:
 - Tomato plants
 - Bean
 - Spinach
- Grow for 3-4 weeks
 - Evaluate for damage



Conclusions

- Prevention is key:
 - Ask questions
 - About potential O.M.
 - Check herbicide labels
 - When in doubt:
 - Apply to non-crop areas
 - Grain fields
 - Hay fields
 - Lawns
- If you suspect carryover:
 - You can do bioassays
 - Patience, carryover will breakdown in time

HERBICIDE CARRYOVER ADVISORY
Sample only. Hay producers and hay sellers should consult legal counsel.

THIS HAY WAS GROWN IN A FIELD TREATED WITH _____ an
EPA LABELED AND APPROVED HERBICIDE for GRASS HAY PRODUCTION. THIS
HERBICIDE CAN KILL BROADLEAF PLANTS.

HAY and MANURE PRODUCED AFTER FEEDING HAY GROWN in a FIELD TREATED with
_____ SHOULD ONLY BE APPLIED TO GRASS HAYFIELDS AND
PASTURES.

**DO NOT APPLY THIS HAY or the MANURE
PRODUCED AFTER FEEDING THIS HAY
TO ANY BROADLEAF CROP.**

**DO NOT USE COMPOST MADE with MANURE
PRODUCED AFTER FEEDING THIS HAY or HAY RESIDUES
on BROADLEAF CROPS or PLANTS.**

*The manure from livestock fed this hay will usually be clear of residual herbicides four days after
an animal stops eating this hay. Fresh or composted manure can then be used for broadleaf plant
production.*

CONSULT the _____ LABEL for COMPLETE DETAILS on SAFE USE and
RESTRICTIONS.

PLEASE PROVIDE THIS INFORMATION TO ANYONE BUYING, ACCEPTING OR USING
THIS HAY or the MANURE PRODUCED AFTER FEEDING THIS HAY.

SELLER NAME _____ DATE _____

BUYER NAME _____ DATE _____