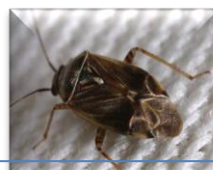
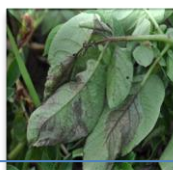


# HatchTrak<sup>SM</sup>



10/4/13

## Fall/Spring Sequential Herbicide Programs

Harvest is progressing well across many parts of Illinois and Wisconsin. Growers are becoming aware of winter annual weed populations materializing in mature crops in addition to after fields have been harvested. Typical winter annual populations consist of: **marestail**, chickweed, henbit, purple deadnettle, cressleaf groundsel, shepherd's purse, field pennycress, little barley, downy brome etc. The majority of winter annuals listed begin their lifecycle near harvest and reach maturity near planting. Fall applications of herbicide combinations encompassing foliar and residual activity are an effective practice for controlling winter annual species. There are multiple benefits of fall + spring sequential burndown applications vs. spring alone.

### Fall Application Benefits:

- Air temperatures in the fall facilitate active winter annual growth and vigor implementing greater herbicide activity.
- Winter annuals are newly emerged favoring desirable coverage, herbicide absorption and effectiveness.
- Removal of winter annual vegetation deters egg laying moths in the spring.
- Fall vegetation removal reduces risk for pest overwintering capabilities.
- Fall applications spread out spring workload and allow quicker planting due to soil warming capabilities.
- Fall followed by Spring burndown + residual applications correspond well with emergence characteristics of tough weeds such as marestail and amaranth.



## Inside This Issue

✓ **Fall/Spring Sequential Herbicide Programs**

✓ **Fall Burndown Recommendations**

✓ **Overlapping Residuals**

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## Marestail:

Persistence of marestail (MT) populations across several no-till soybean fields were apparent this season. Inconsistency in control of MT was a common topic. This experience was largely due to plant size at application. MT are most vulnerable to herbicides during the rosette stage. When referring to plant lifecycle the rosette stage occurs from emergence to bolt initiation (upright growth). MT becomes substantially more difficult to control after bolting. MT were initially thought of as having a winter annual growth habit. However, certain populations in central/southern Illinois and Indiana have adapted characteristics similar to summer annual growth. Fall emergence commonly occurs from August-November and seedlings will remain in the rosette stage until the following spring (**winter annual nature**). Spring emergence typically begins in March and persists into July (**summer annual nature**). Plants emerging from March to July will undergo a relatively short amount of time in the rosette stage. When developing effective fall herbicide strategies several factors should be considered:

- 1.) Time should be allowed for crop residue to settle.
- 2.) Herbicides should be applied to actively growing weeds.
- 3.) Residual herbicides should be included for winter annuals with longer germination intervals.
- 4.) Applications including residual herbicides should be made when the soil temperature is near 55° F and decreasing to reduce microbial breakdown.

In order to effectively control multiple species encompassing glyphosate-resistant biotypes in no-till cropping systems, fall/spring sequential applications should be employed. Considering the germination profiles of marestail and summer annuals such as waterhemp or palmer amaranth it is critical to include a fall and spring burndown with residual activity to encourage a clean seed bed at planting. If we have learned anything from this year it is the importance of starting clean. **Effective postemergence herbicide options for control of marestail and waterhemp are greatly reduced upon soybean emergence.**

### Flexibility in Use of Soybean Herbicides With Foliar Activity

Herbicide or Herbicide Family	Fall Application	Application After Soybean Emergence	
	GR* Marestail	GR* Marestail	GR* Waterhemp
Glyphosate (Roundup Ready Soybeans)			
Glufosinate (Liberty Link Soybeans)			
Paraquat		N/A	N/A
2,4-D or 2,4-D + Dicamba Premix		N/A	N/A
Diphenylethers			

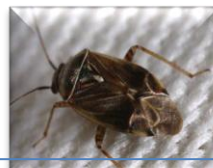
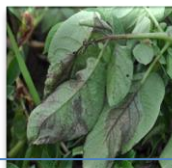
GR\*- Glyphosate-resistant

■ Poor Activity

■ Good Activity



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## Fall Applied Residual Programs - soybeans only

Use 2,4-D LV4 at 1.5-2 pt/acre or  
2,4-D 1 pt + dicamba (Clarity/Banvel) 4-8 oz

**Plus one of the Authority Residual Products below:**

- **Authority XL 3.2 – 4.5 oz/a**
  - For soils with soil pH 7.2 and lower.
  - Excellent burndown & residual for winter annuals and residual for no-till soybeans.
- **Authority First 4.0 oz/a**
  - No geographical restrictions, no pH restrictions.
  - Strong residual control of Authority for long residual to keep fields clean of marestail, ragweeds and other early emerging no-till weeds in spring.

## Fall Applied Residual Program – soybeans or corn (4 months)

- **Authority MTZ 12-14 oz/a**
  - Flex-crop advantage – Rotate to either corn or soybeans after 4 months.
  - Take advantage of changes in commodity prices to keep cropping choices open.
  - Excellent residual for small-seeded broadleaf weeds in early spring.
  - Non-ALS option to help combat herbicide resistance

### Guidelines for Fall Applications

- Apply residual herbicides when soil temperature is 55° F and declining to prevent herbicide degradation and extend residual farther into spring.
- Include minimum of 24 oz/a glyphosate for control of emerged winter annual grasses.
- 10 gpa minimum spray volume. Use 15 gpa for heavy crop residue, weed cover for better coverage.
- For chickweed, either glyphosate, dicamba, or Express is required.

Fall Applications are NOT intended to provide full season residual control the following year. Overlapping residual herbicides At-Plant or Postemergence will be required for control throughout the growing season.



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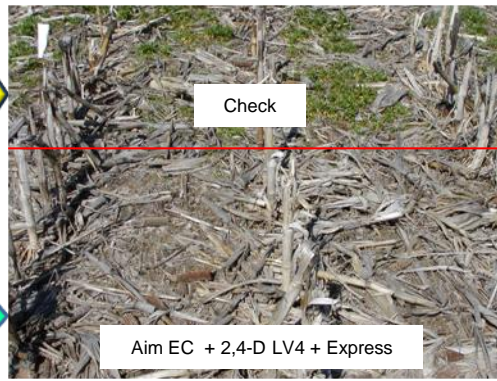


Include Aim to Enhance Speed and Effectiveness of Fall Burndown Applications



Chickweed  
Dandelion  
Henbit  
Horseweed (marestail)  
Field Pennyress  
Prickly Lettuce  
Purple Deadnettle  
Tansy mustard  
Shepherd's purse  
Virginia Pepperweed  
Winter Annual Grasses

FLEXIBLE Programs	Chickweed	Dandelion	Henbit	Horseweed (marestail)	Field Pennyress	Prickly Lettuce	Purple Deadnettle	Tansy mustard	Shepherd's purse	Virginia Pepperweed	Winter Annual Grasses	
Aim EC 0.75 oz + 2,4-D LV4 1.5 pt. + COC 1% v/v + AMS	F	E	E	E	E	E	E	E	E	E	P	Foliar
Aim EC 0.75 oz + 2,4-D LV4 1.0 pt. Express® 0.1 oz + COC 1% v/v + AMS	E	E	E	E	E	E	E	E	E	E	P	
Aim EC 0.75 oz + Glyphosate 22 oz D LV4 1.0 pt + COC 1% v/v + AMS	E	E	E	E	E	E	E	E	E	E	E	
Aim EC 0.75 oz + 2,4-D LV4 1.0 pt. + Dicamba 4 oz + COC 1% v/v + AMS	G	E	E	E	E	E	E	E	E	E	P	
Aim EC 0.75 oz + Express® 0.1 oz 2,4-D LV4 1.0 pt + Glyphosate 22 oz + COC 1% v/v + AMS	E	E	E	E	E	E	E	E	E	E	E	
SOYBEAN Programs												Foliar + Residual
Aim EC 0.75-1 oz/a + 2,4-D 16 oz/a + Glyphosate 22 oz/a + Authority XL 3.5-4 oz/a + COC 1% v/v AMS	E	E	E	E	E	E	E	E	E	E	E	
Aim EC 0.75-1 oz/a + 2,4-D 16 oz/a + Glyphosate 22 oz/a + Authority MTZ 12 oz/a + COC 1% + AMS	E	E	E	E	E	E	E	E	E	E	E	
CORN Program												Foliar + Residual
Aim EC 0.75-1 oz/a + 2,4-D 16 oz/a + Glyphosate 22 oz/a + Authority MTZ 12 oz/a + COC 1% + AMS	E	E	E	E	E	E	E	E	E	E	E	



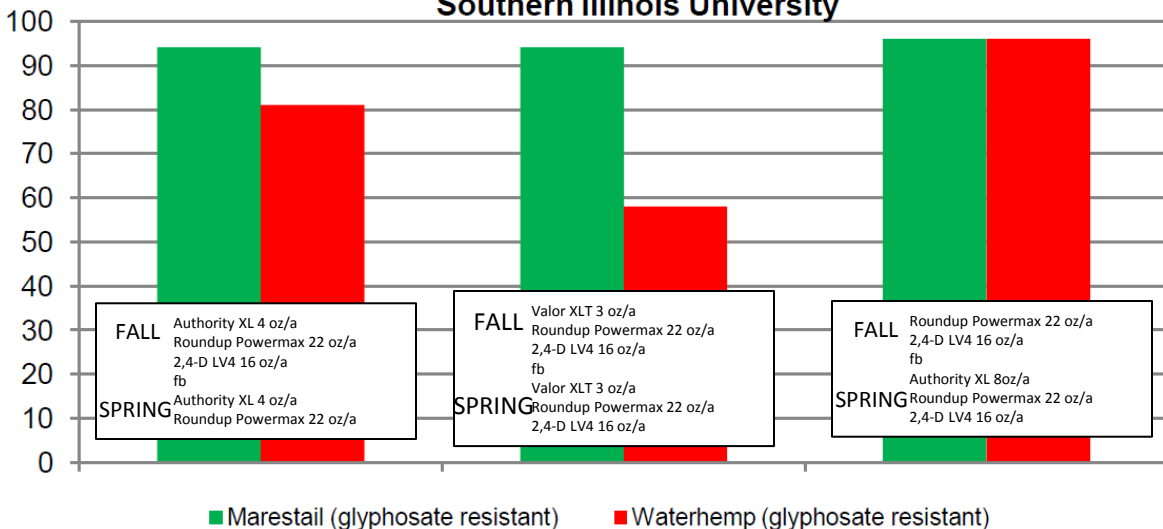
**E** = 90+% Control    **G** = 70-90% Control    **F** = 50-70% Control    **P** = 0-50% Control

## Fall/Spring Sequential Application Expectations

Fall herbicide applications are effective for control of winter annuals, in addition to dandelion, and biennial thistles. Utilizing residual herbicides with fall applied herbicide treatments will implement effectiveness on winter annuals in addition to maintaining efficacy on early emerging summer annuals in the spring. However, residual activity on summer annuals will not persist season long with fall applications. In order to achieve greatest control of marestail and summer annuals including waterhemp, palmer amaranth, velvetleaf, nightshade and morningglory an additional spring overlapping residual is required.

### Weed Control From Fall (11/23/2011 + Spring Applications (4/24/2012) Evaluated 6/28 /2012

Southern Illinois University



# OVERLAPPING RESIDUAL FACT SHEET

## FALL APPLICATION GUIDELINES

- October 10 to freeze
- Do not apply to frozen or snow-covered ground
- Rainfall after harvest and prior to application will settle residue and allow for better coverage



Fall Burndown	Spring Burndown	In Season
Authority* MTZ DF 10–14 oz/A	Anthem* ATZ 2–2.5 pt/A	Cadet* 0.6–0.9 oz/A + Atrazine 0.5 lb and/or Hornet* 3 oz/A
<b>PLUS</b>	<b>OR</b>	<b>OR</b>
Dicamba + 2, 4-D LV4 Premix 24-32 oz/A	Anthem 8–10 oz/A + Atrazine 0.5–1.5 lb	Anthem ATZ 1.75–2 pt/A
<b>OR</b>	<b>OR</b>	<b>OR</b>
Dicamba 8 oz/A	Anthem 8–12 oz/A	Cadet 0.6–0.9 oz/A + Atrazine 0.5 lb
<b>OR</b>	<b>PLUS</b>	<b>OR</b>
2, 4-D LV4 16–32 oz/A	2, 4-D LV4 16 oz/A + Glyphosate* 22–48 oz/A	Anthem 8 oz/A
<b>PLUS</b>	<b>OR</b>	<b>PLUS</b>
Glyphosate* 22–48 oz/A	Liberty* 29–32 oz/A + 2, 4-D LV4 16 oz/A	Glyphosate* 22–48 oz/A
		<b>OR</b>
		Liberty 29–32 oz/A

\*All glyphosate rates are formulation dependent.

## ADDITIONAL GUIDELINES

- Burndown and post applications use minimum of 15 GPA with Turbo or XR Flat fan nozzles for optimal coverage
- Follow 2, 4-D label specifications for planting intervals to soybeans and corn
- In-season Cadet plus glyphosate applications should be made 21–28 days after planting

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# OVERLAPPING RESIDUAL FACT SHEET

## FALL APPLICATION GUIDELINES

- October 10 to freeze
- Do not apply to frozen or snow-covered ground
- Rainfall after harvest and prior to application will settle residue and allow for better coverage



Fall Burndown**	Spring Burndown (7 days prior to planting)	In Season
Authority <sup>®</sup> MTZ DF 10–14 oz/A or Authority XL 3.5–4 oz/A	Authority XL 4–6.4 oz/A	Cadet <sup>®</sup> 0.6–0.9 oz/A + Glyphosate* 32 oz/A
<b>PLUS</b>	<b>OR</b>	<b>OR</b>
Dicamba + 2, 4-D LV4 Premix 24–32 oz/A	Authority Maxx 6–8 oz/A	Marvel <sup>™</sup> 7.25 oz/A + Glyphosate* 32 oz/A
<b>OR</b>	<b>OR</b>	<b>OR</b>
Dicamba 8 oz/A	Authority Assist 8–12 oz/A	Glyphosate* 22–48 oz/A (1–3 Trifoliate)
<b>OR</b>	<b>OR</b>	
2, 4-D LV4 16–32 oz/A	Authority First DF 5–6.4 oz/A	
<b>PLUS</b>	<b>OR</b>	
Glyphosate* 22–48 oz/A	Authority Elite 25–38 oz/A	
	<b>PLUS</b>	
	2, 4-D LV4 16 oz/A	
	<b>PLUS</b>	
	Glyphosate* 22–48 oz/A or Liberty <sup>®</sup> 29–32 oz/A	

\*All glyphosate rates are formulation dependent.

\*\*Do not exceed 0.375 lb a.i of sulfentrazone between fall and spring applications.

## ADDITIONAL GUIDELINES

- Burndown and post applications use minimum of 15 GPA with Turbo or XR Flat fan nozzles for optimal coverage
- Follow 2, 4-D label specifications for planting intervals to soybeans and corn
- In-season Cadet or Marvel plus glyphosate applications should be made 21–28 days after planting
- Heavy weed pressure include residual (Warrant<sup>®</sup> 3 pt/A) with in-season Cadet or Marvel + glyphosate application