

# Wisconsin Crop Manager

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Online copy available at <http://ipcm.wisc.edu>

## Carbon credits available for no-till and strip-till crop production

Dick Wolkowski, Extension Soil Scientist, UW-Madison

The issue of reducing greenhouse gas emissions to address global warming is offering an opportunity to Wisconsin farmers. Farmers can now be paid a soil carbon offset (credit) by enrolling acres in a program that pays them to sequester carbon in crop residues by practicing no-tillage or strip-tillage. Other practices such as grassland conversion, tree planting, and methane capture also offer offset opportunities. Offset payments are offered through the Chicago Climate Exchange that has entered into agreements with large companies, who in addition to agreeing to reduce CO<sub>2</sub> output by 6% by 2010, also provide funds to pay farmers to sequester carbon using conservation practices.

What is carbon sequestration: As soils developed in their natural state prior to agriculture, carbon accumulated and reached a steady state depending on climate, soil texture, and vegetation type. Once soils were aerated by cultivation soil carbon was lost through increased microbial respiration, eventually stabilizing at a lower soil carbon content. The current effort to sequester carbon sequestration seeks to increase soil carbon through reduced tillage management or other practices. Although research still needs to confirm the extent of carbon sequestration by these practices, most are believed to result in the net accumulation of carbon. Carbon sequestration occurs when the carbon production by plants and organisms exceed the loss as CO<sub>2</sub> microbial respiration of residues and soil organic matter. Specific soils will vary in their ability to sequester carbon depending on location in the U.S., the type of plants grown on the site, and the amount of soil disturbance by tillage. Practices such as no-till will sequester soil carbon by limiting the introduction of O<sub>2</sub> by tillage, thereby reducing microbial respiration. The idealized relationship between management and soil organic matter (soil carbon) is shown in Figure 1.

Carbon offset program: The Wisconsin Farm Bureau is helping with the coordination of the carbon offset program for Wisconsin producers. Eligible fields must be contracted to remain in no-till or strip-tillage systems for five years and will be monitored annually to verify that the conservation tillage practices are maintained. A maximum of one-third of the soil area can be disturbed by tillage and two-thirds of the crop residue must be left on the surface. Currently carbon offsets are paid at a percentage of the market price for the carbon offset, which are traded in one-metric ton of CO<sub>2</sub> per acre per

## UW-River Falls Field Scout Training Class

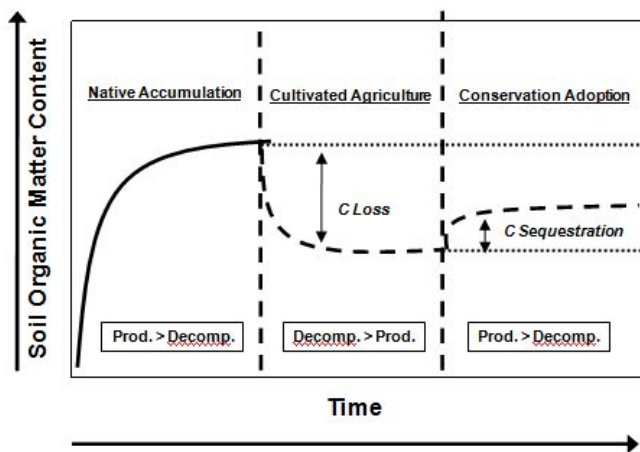
Bryan Jensen, IPM Program

The 2008 IPM Field Scout Training Class which is to held on the UW River Falls campus March 19-20. Topics covered include, pest identification and biology, damage symptoms, economic thresholds and scouting techniques for insects, weeds, plant pathogens, herbicide injury and nutrient deficiency symptoms for corn, alfalfa, soybean and wheat. CCA Credits will be applied for in the areas of pest and nutrient management. Non-student registration fee is \$100/person and covers the cost of the training and copies of the Field Crop Scout Training Manual and Ontario Weeds. To register, send a check payable to UW-Extension to Bryan Jensen, Dept. of Entomology, 1630 Linden Drive, Madison, WI 53706. For more information call Bryan Jensen at (608) 263-4073 or email at [bmjensel@facstaff.wisc.edu](mailto:bmjensel@facstaff.wisc.edu)

year units. Wisconsin producers in southwestern counties can receive offsets at a value of 0.6 metric ton CO<sub>2</sub> per acre per year or 0.4 metric ton CO<sub>2</sub> per acre per year for the remainder of the state. Currently CO<sub>2</sub> offsets are trading at a full value \$4.50 per acre per year. Therefore, the actual payment to the farmer for conservation tillage will range between \$1.80 and \$2.70 per acre per year. Acreage that met no-till or strip-till requirements for 2007 can be included in the program. The enrolled acres will be brokered by an Iowa company – AgraGate, which pools credits from individual farmers and offers them for sale on the Chicago Climate Exchange.

**Summary:** The potential benefits of contracting for carbon offsets goes beyond the financial payment for reduced tillage or other practices. No-till and strip-till are systems that are well known for reducing erosion and labor, machinery, and fuel costs. Farmers who have not practiced no-till may find a continuous no-till system challenging, especially on heavier soils. Strip-tillage is a practice that blends the benefits of full-width tillage with those of no-till. The potential for yield reduction is lower in strip-tillage and it can offer time and fuel savings. There are many more details that should be understood before enrolling acreage in the offset program. Contact the Wisconsin Farm Bureau at 800-261-3276 or [wicinfo@wfbf.com](mailto:wicinfo@wfbf.com). The websites of the Chicago Climate Exchange ([www.CCX.com](http://www.CCX.com)) and AgraGate ([www.agragate.com](http://www.agragate.com)) both contain useful information that producers should review.

Figure 1. Management effect on organic matter (soil carbon) content. (adapted from Al-Kaisi and Licht, 2005)



## Project to look at nutrient stratification in Wisconsin’s agricultural soils

Laura Good, UW-Madison Soils Department

Are some soil groups in Wisconsin more likely than others to have high phosphorus and potassium concentrations at the surface compared to the plow layer? Do minimum-tillage systems lead to more plant nutrient concentrated at the soil

surface? Soil samplers are needed throughout Wisconsin this spring to help answer these questions. They are requested to take part in a project to measure the extent of nutrient stratification in common agricultural soils under different tillage systems. The primary objective of the study is to assess cropland P stratification by soil group and by tillage system for the Wisconsin P Index, but information on potassium stratification will also be collected.

The P Index is a tool to assess the risk of runoff P delivery from agricultural fields to surface water for phosphorus-based nutrient management planning. In Wisconsin’s P Index, surface (0-1 inch) soil test P is used to estimate runoff dissolved P and sediment P concentrations. Rather than require a separate “surface” soil sample, the P Index applies a stratification factor to the routine plow-layer soil test P to estimate surface soil test P. The stratification factors currently used in the P Index came from a soil sampling project conducted in 2002-2003 from 103 fields throughout the state. The majority of these samples had a higher concentration of soil test P at the surface than in the plow layer. One surprising finding of this study was a significantly higher stratification ratio for the red medium- and fine-textured soils found in eastern Wisconsin compared to medium- and fine-textured soils in other parts of the state. In addition, there was only a slight trend towards increased stratification in no-till and established alfalfa across all samples. However, there were not enough samples from different soil groups for valid statistical analysis of the effects of tillage on stratification. In this study, we hope to verify the stratification factors currently used in the P Index for soil groups, and to determine if additional factors should be used to account for the effects of tillage on stratification.

Participating soil samplers will be asked to sample a minimum of four fields of one soil type commonly used for growing crops in their areas. More samples will be welcome. We will need a large number of samples from medium- and fine-textured soils across the state to come to any conclusions about the effects of tillage on soil P stratification within each soil group. For each field, the sampler will take composite plow layer and surface samples to 0-6 inch and 0-1 inch depths around one point in the field. The samples will be analyzed for soil test P and K at the Marshfield or Madison UW-Soil and Plant Analysis Labs. Samplers will also be asked to report field location and management history in an on-line field data entry form. You can review this form and a detailed protocol at

<http://www.soils.wisc.edu/extension/onfarmdemo>

We hope to get enough samples in this spring to be able to produce a summary report this summer on P and K stratification in Wisconsin’s medium and fine-textured agricultural soils. Contact Laura Good to participate ([lwgood@wisc.edu](mailto:lwgood@wisc.edu), 608-262-9894).

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## Avitec™ Approved for 2008: Corn Seed Treatment to Protect Against Sandhill Crane Damage

Eileen Cullen, Extension Entomologist, UW Entomology Department

A Section 18 label has been re-issued by the U.S. Environmental Protection Agency for use of the nonlethal bird repellent Avitec for a third year in Wisconsin. Avitec is labeled for sandhill cranes on field and sweet corn. This spring planting season 2008, Avitec can be used as a corn seed treatment in Wisconsin in areas where Sandhill Cranes have been damaging corn fields by eating corn seeds shortly after planting. The Section 18 has been approved for Texas and Minnesota as well, and Michigan has an application pending. Farmers in those states should contact their Extension service or Department of Agriculture for more information. The emergency exemption label (Section 18) for Wisconsin is effective through July 30, 2008.

2008 is the second year that a more effective liquid formulation of Avitec is available. A dry powder formulation is also available. Dry powder formulation offers flexibility of on-farm hopper box delivery to the seed. However, the powder formulation is less reliable than liquid formulation because different planter types, as well as seed box filling and mixing procedures, can result in variable amount of Avitec active ingredient delivered to each corn seed. Although liquid formulation requires the extra step of having corn seed treated by a commercial seed treater or seed company facility, it has proven a more reliable delivery method of Avitec active ingredient to the corn seed. Long term field research by the International Crane Foundation and Arkion Life Sciences, as well as field visits by UW Extension over the last two years have demonstrated that liquid Avitec seed treatment consistently delivers the required amount of active ingredient to each corn seed, and field failures have not been documented. In contrast, field failures can still occur with powder treatments.

Avitec™ has the active ingredient 9,10 Anthraquinone, a compound naturally produced by many plants to repel birds. This reduced-risk biopesticide is not lethal to birds and has been labeled as a repellent for geese in non-agricultural settings for several years. Cranes eat newly planted corn seeds that occur in straight rows at predictable intervals. Planted kernels are most vulnerable for about two weeks after the corn seedlings emerge. Cranes detect Avitec™ on the seed and avoid treated seed. Though treated kernels are not consumed by cranes, the birds continue to forage on waste grains and other food sources such as soil insect larvae in those same fields. Seeing cranes in corn fields treated with Avitec, therefore, does not mean that crop damage is occurring.

Growers purchasing Avitec™ or having their seed commercially treated are not currently required to obtain a WI DNR bird permit before use on corn seed, rather the manufacturer (Arkion Life Sciences LLC) and WI DATCP will maintain records of Avitec™ sales to the county and township level through 2008 distribution channels.

For more information on obtaining Avitec™ in Wisconsin, please call the manufacturer Arkion at 1-800-468-6324 or visit their website for technical updates and application recommendations [www.arkionls.com](http://www.arkionls.com). You can also contact your local agricultural supplier for Wisconsin distribution information, UW Extension, or the International Crane Foundation. Below is a list of contacts for more information on obtaining Avitec™ corn seed treatment for the 2008 season.

### Arkion Life Sciences LLC

Wilmington, DE

Contact: Ken Ballinger; 1-800-468-6324,

[Ken.ballinger@airepel.com](mailto:Ken.ballinger@airepel.com)

### International Crane Foundation

Baraboo, WI

1-608-356-9462 Contact: Anne Lacy (Field Ecology

Department), Ext. 146, [anne@savingcranes.org](mailto:anne@savingcranes.org)

### University of Wisconsin Entomology Department

Madison, WI

Contact: Eileen Cullen, Extension Specialist, 1-608-261-1507;

[cullen@entomology.wisc.edu](mailto:cullen@entomology.wisc.edu)

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## Using Herbicides for Mid-Contract Management of Fields Enrolled in the Conservation Reserve Program (CRP)

Mark Renz, Extension Weed Scientist, University of Wisconsin-Madison

New regulations require fields enrolled in the conservation reserve program (CRP) that are sod-bound with grasses be managed periodically to reduce this dominance and increase the diversity of desirable broadleaf plants. Several management methods are recommended by NRCS, including: 1) mowing, 2) herbicides, 3) burning and interseeding, 4) prescribed burning, and 5) disking and interseeding. For more specific information on each of these recommendations, please visit <http://www.wi.nrcs.usda.gov/technical/jobsheets3.asp> as they have specific job-sheets that address each recommendation. This article is meant to assist individuals in selecting an appropriate herbicide treatment to suppress sod-bound grasses.

Unlike most weed management situations, suppression of the target plant is the desired result, not elimination. This offers several challenges as most management recommendations using herbicides target removal, and little research has looked at the concept of suppression. While there are a range of grasses that will likely be targeted for suppression in Wisconsin, the most common in CRP fields is switchgrass (a warm season perennial grass). I only found one experiment that measured the effectiveness of herbicides at suppressing switchgrass. Unfortunately the experiment was conducted in filter strips between field crops in Mississippi (Rankin et al. 2005), so the results may differ under Wisconsin's environmental conditions. Data from this project with regards herbicides registered for use in CRP are

summarized in Table 1. They found that systemic herbicides like glyphosate, Poast, and Fusilade provided the most visual injury, and only high rates of contact herbicides like Gramoxone provided significant suppression two months after treatment. Ideally these treatments would provide suppression into the following years, but this experiment did not evaluate differences past four months.

**See Table 1.**

Based on these results, it appears that several herbicides are available that, UNDER THE CORRECT CONDITIONS should provide effective suppression. However, care must be taken to apply these herbicides correctly as either reduced or enhanced suppression is undesirable and landowners are responsible for assuring that any herbicide application will not be adversely affected. To further complicate matters, CRP management restrictions are imposed that prevent any management activities outside the nesting season at different timings for warm (April 15-May 14 OR August 2-August 15) and cool season (April 1-May 14 OR September 1-October 1) grasses.

The Mississippi study provides a foundation for future work to determine the best herbicide, timing of application, and rate. Results will likely be different in Wisconsin as switchgrass will not be two feet tall between April 1 and May 14<sup>th</sup>, therefore I would suspect reduced control at this timing in Wisconsin compared to the Mississippi study. I would, however expect results to be similar with the summer applications of glyphosate, Poast, and Fusilade.

Research will evaluate these treatments this summer, but switchgrass height and developmental stage should be similar (close to four feet tall), and these parameters have been shown to be the most important with management of other perennial grasses like quackgrass. I will be evaluating several of these herbicides this spring and fall in addition to other NRCS recommendations, so stay tuned for further results.

When selecting an herbicide for this mid-contract management, it is important to consider several factors. If desirable broadleaf plants are present I would recommend the grass specific herbicides as they would provide the least injury to these desirable plants. Contact herbicides like Gramoxone are an option for suppression, and while the Mississippi study showed significant reductions in populations up to 4 months after treatment, it is unlikely that these treatments will cause long-term reductions in populations as they don't damage belowground rhizomes.

Due to the cost of various treatments and fact that this disturbance is supposed to suppress the target species populations enough that this won't need to be repeated for 5-10 years I would consider systemic herbicides as they will likely be more effective at reducing belowground biomass and competitiveness of these grasses for more than one year. Also realize that the effectiveness of treatments can vary dramatically based on the age of the population to be suppressed. Older stands tend to have more litter present and more stored energy in perennial organs. These two factors can make suppression more difficult and may require higher rates for suppression, or utilization of other management methods than herbicides.

Finally one should also consider what other species are present at the site or historically have been present as cover of these species may dramatically increase in cover as a result of management. ***Whatever herbicide you select, make sure to follow the label, as specific restrictions may exist with some products that don't exist with others.***

Reference:

Rankin, A.R., D. R. Shaw, and J Douglas. 2005. Response of Perennial Grasses Potentially Used as Filter Strips to Selected Postemergence Herbicides. Weed Technology 19:73.

Table 1. Effectiveness and estimated cost of CRP registered herbicides in suppressing switchgrass in Mississippi (adapted from Rankin et al. 2005).

Herbicide	Rate	Cost \$/A	Application Timing		% Visual Injury	
			Season	switchgrass height	2 MAT	4 MAT
Glyphosate	0.25 lbs ai/A	\$ 2-3	Spring	2 ft	22	14
Glyphosate	0.75 lbs ai/A	\$ 8-12	Spring	2 ft	66	40
Gramoxone	10 fl oz/A	\$ 2.5	Spring	2 ft	0	0
Gramoxone	2.5 pt/A	\$ 10	Spring	2 ft	26	21
Poast	5.3 fl oz/A	\$ 2.5	Summer	4 ft	32	-
Poast	21.2 fl oz/A	\$ 10	Summer	4 ft	66	-
Fusilade	9 fl oz/A	\$ 12	Summer	4 ft	47	-
Fusilade	36 fl oz/A	\$ 48	Summer	4 ft	71	-
Glyphosate	0.25 lbs ai/A	\$ 2-3	Summer	4 ft	22	-
Glyphosate	0.75 lbs ai/A	\$ 8-12	Summer	4 ft	46	-

## Sweet Corn Tolerance to Accent, Callisto, Impact, and Laudis

Chris Boerboom, Extension Weed Scientist and Joe Bollman, Jefferson County Extension Agent

Postemergence herbicides are very useful for weed management in sweet corn, but caution may be needed when certain herbicides are applied to sensitive hybrids. Over the past 3 years, we have conducted many sweet corn tolerance trials to postemergence herbicides. These trials were coordinated by Joe Bollman during his graduate studies and we had several collaborators including M. VanGessel, University of Delaware, R. Becker, University of Minnesota, R. Bellinder, Cornell University, D. Morishita, Idaho State University, and E. Peachey, Oregon State University. This article summarizes the major findings of these trials.

### Accent And Callisto Tolerance

Hybrid tolerance to postemergence-applied Accent and Callisto was evaluated in 18 field trials that were conducted at 11 sites from 2005 to 2007. The locations were in Delaware, Colorado, Idaho, Illinois, Minnesota, New York, Oregon, and Wisconsin. Across all trials, Accent was tested on 185 hybrids and Callisto was tested on 179 hybrids. Both herbicides were applied at twice their labeled rates to determine which hybrids have good tolerance or might be sensitive. Accent was applied at 1.33 oz/a + 1% crop oil concentrate (COC) + 2 lb/a ammonium sulfate (AMS). Callisto was applied at 6 oz/a + 1% COC. Both herbicides were applied to sweet corn hybrids in the V3 growth stage. Injury was evaluated on a 0 to 100% scale at 7 and 14 days after treatment. Accent injury was based on stunting whereas Callisto injury was based on chlorosis or bleaching.

From these evaluations, we rated and summarized the tolerance of the tested sweet corn hybrids in a *Sweet Corn Hybrid Tolerance Rating* (See link below) fact sheet, which can be found under the publications tab on this web site. Experimental hybrids that were evaluated were excluded from the fact sheet until they are released commercially. Consequently, the fact sheet lists 134 and 136 commercially available hybrids with tolerance ratings for Accent and Callisto and defines the potential risk and degree of injury. In addition to the ratings, the fact sheet describes guidelines to manage the risk of Accent or Callisto injury based on the hybrid's rating. These recommendations are intended to supplement the guidelines that can be found on the Accent and Callisto labels.

PDF file >>>> [SweetCorn-Hybrid-Tolerance2007.pdf](#)

### Impact And Laudis Tolerance

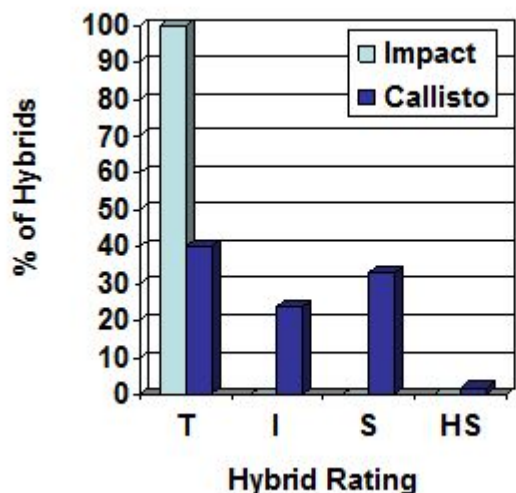
Impact and Laudis are all similar herbicides (HPPD-inhibiting or bleaching herbicides) to Callisto and are labeled for use in sweet corn. Previously, sweet corn hybrids have had limited evaluation to determine tolerance to Impact and Laudis. In 2007, two multi-state field studies were conducted to evaluate hybrid tolerance to Impact and Laudis applied postemergence.

### Impact Tolerance Evaluation

The first study evaluated hybrid tolerance to several herbicides, including Impact, at sites in Oregon, Minnesota, Wisconsin, Illinois, New York, and Delaware. Impact was tested at twice the labeled rate to differentiate among tolerant and sensitive hybrids. Impact was applied at 1.5 fl oz/a + 1% COC + 8.5 lbs AMS / 100 gal water to sweet corn in the V3 growth stage. Chlorosis (or bleaching) ratings were taken at 7 and 14 days after treatment.

In this study, 58 of the 87 Impact-treated hybrids had 1% or less chlorosis at 7 DAT (data not shown). No hybrid exceeded 5% chlorosis when treated with the twice labeled rate of Impact. Of the 42 hybrids, which were tested for tolerance to both Impact and Callisto in this same trial, 60% of the hybrids had intermediate, sensitive, or highly sensitive responses to Callisto whereas none of the hybrids responded to Impact (Figure 1).

**Figure 1.** Classification of 42 sweet corn hybrids following treatment with a 2x rate of Impact or Callisto. Hybrid ratings are T = tolerant, I = intermediate, S = sensitive, and HS = highly sensitive.



Sweet corn hybrids exhibited excellent tolerance to Impact and many sweet corn hybrids had greater tolerance to Impact than Callisto. Based on this study, we do not intend to test additional hybrids for tolerance to Impact.

Although sweet corn has excellent tolerance to Impact, rotational restrictions should be considered when using Impact. At the 0.75 oz/a rate, soybeans and snap beans cannot be planted for 18 months after application. However, two supplemental labels allow soybeans and snap beans to be planted after 9 months if 0.5 oz/a of Impact is applied. The supplemental label for snap beans is new for 2008 and is for Wisconsin, Minnesota, and Illinois.

### Laudis Tolerance Evaluation

This study was designed as a preliminary study to determine the potential need for future hybrid tolerance testing of Laudis. This 2007 study was conducted in Minnesota, Wisconsin, New York, and Delaware. Twenty-

eight hybrids (Table 1) were selected for testing because they range in tolerance to Callisto. Laudis was applied at twice the labeled rate to differentiate among tolerant and sensitive hybrids and was applied at 6 fl oz/a + 1% COC + 8.5 lbs AMS / 100 gal water. Chlorosis (or bleaching) ratings were taken at 7 and 14 days after treatment. Green husk yields were taken at crop maturity.

In this study, Merit was the only hybrid of the 28 hybrids that had significant injury from Laudis and was killed. Merit was the only hybrid to have a yield reduction compared to the nontreated control when treated with Laudis (data not shown). J. Pataky, University of Illinois also screened 249 hybrids for Laudis tolerance and found excellent tolerance except for 7 hybrids that were highly sensitive.

**Table 1. Sweet corn hybrids used to evaluate crop response to 2x rate of Laudis.**

Argent	Basin R	Cahill	Celestial
CSUWP1-7	Delectable	DMC 21-84	Dynamo
Early Gold	GH 2042	GH2547	GH4927
GH 9597	GSS 1477	GSS 2008	GSS 2914
Hollywood	How Sweet It Is	Legacy	Merit
Mystique	Overland	Passion	Rocker
SS Jubilee Plus	Suregold	Temptation	Trinity

Sweet corn hybrid tolerance to Laudis was excellent to a twice labeled rate for all hybrids tested except for the known highly sensitive hybrid Merit. A few highly sensitive hybrids (Merit, DM 20-38, HMX 6386 S, and Shogun) should not be treated with Laudis. Based on this study and the results of other testing, we do not intend to test additional hybrids for tolerance to Laudis.

## Winter Wheat Herbicide Comments

Chris Boerboom, Extension Weed Scientist

Although the snow has yet to melt, it will soon and winter wheat should be off to a quick start. One nice advantage with winter wheat is weed management. Winter wheat is very competitive with weeds and many fields frequently do not need a herbicide application for weed control in Wisconsin. Compared to the wheat states out west, we typically don't worry about winter annual grass weeds like downy brome in winter wheat because we don't grow winter wheat at a high frequency in our rotations. Also, we typically don't have much problem with summer annual grasses like foxtails because winter wheat has such a head start that it smothers these spring germinating grasses. On the other hand, broadleaf weeds can be a problem in some fields. The winter annual broadleaf weeds like some mustards (field pennycress, shepherd's purse, wild radish, etc.) or early emerging summer annuals like wild buckwheat, giant ragweed, or prickly lettuce may need control. If these weeds have a density and size that justifies control, there are several postemergence herbicides available for use.

When selecting a herbicide for winter wheat, the first step is finding a herbicide that has good activity on the target weeds. Of course, the herbicide labels should be checked for the weeds controlled, but a quick short cut to identifying potential herbicides is to check our rating table in the Pest Management in Wisconsin Field Crops bulletin. The control ratings for broadleaf weeds with common small grain herbicides are listed on page 182. (If you do not have the bulletin, but have a fast internet connection, the bulletin is available online at <http://learningstore.uwex.edu/Pest-Management-in-Wisconsin-Field-Crops2008-P155C0.aspx> or a copy can be ordered from this site).

For three common wheat herbicides, here are some good rules of thumb to keep in mind about their activity.

1. 2,4-D: good on the mustard family, but weak on wild buckwheat and smartweeds.
2. Dicamba (Banvel, Clarity): good on wild buckwheat and smartweeds, but generally weaker on the mustard family; higher risk of injury and the rate is limited to 4 oz/a on wheat.
3. Sulfonyleurea herbicides (Harmony Extra, Harmony GT, Affinity BroadSpec): generally excellent on the mustard family.

The second step in a good weed management program is proper application timing and winter wheat is no exception. In fact, proper timing may be more critical to protect wheat from injury than in corn or soybeans. The maximum growth stage when herbicides should be applied should be closely followed (Table 1). In particular, late applications of dicamba or 2,4-D can cause kernels to abort and leave blank heads. Dicamba must be applied before the jointing stage. For 2,4-D, labels may allow applications until the early boot stage. However, we recommend applications before the jointing stage and do not recommend later applications because of the risk of injury. Overall, most herbicides should be applied by the jointing stage to get the best weed control and this will also protect the wheat from injury.

**Table 1.** Application timings of common winter wheat herbicides for broadleaf weeds

Affinity BroadSpec	before flag leaf shows
Aim	before jointing stage
Dicamba	before jointing stage
Buctril	before boot stage
Harmony Extra SG	before flag leaf shows
Harmony SG	before flag leaf shows
Huskie	before flag leaf shows
MCPA	before jointing
Rage D-Tech	before jointing
Starane	through flag leaf emergence
Stinger	before the boot stage
2,4-D	before jointing

A few notes are worth mentioning on new wheat herbicides or new formulations. One new herbicide for 2008 is Huskie from Bayer. Huskie is a premix of pyrasulfotole + bromoxynil + a safener. Pyrasulfotole is a new herbicide ingredient, but it is in the same family as the bleaching herbicides of Callisto and Laudis. Bromoxynil is the ingredient in Buctril. Huskie would typically be applied at 11 oz/a along with either 0.5-1 lb/a ammonium sulfate or 1-2 qt/a 28% nitrogen. Huskie will control many annual broadleaf weeds and they should be sprayed before they have more than 4 to 6 leaves. Other weed scientists have reported that wheat has good tolerance to Huskie. If the timings fertilizing and weed control are similar, Huskie can be applied using nitrogen fertilizer as the carrier instead of water.

Rage D-Tech from FMC is another new premixed herbicide that can be used on wheat. Rage D-Tech is a mixture of 2,4-D and the herbicide in Aim (carfentrazone) and can be applied at rates from 8 to 16 oz/a. The 8 oz/a rate would give the equivalent to 8.3 oz/a 2,4-D LV4 plus 0.5 oz/a Aim. Rage D-Tech needs the addition of 0.25% surfactant and will control many broadleaf weeds when sprayed before 4 to 6 inches tall. Wheat should be sprayed before jointing because of the 2,4-D component. Rage D-Tech may speckle the wheat leaves because of the Aim component, but this should not be a concern unless the leaves are wet from dew or rain.

DuPont has changed two of their wheat herbicide formulations. Harmony SG is the new version of Harmony GT and Harmony Extra SG is the new version of Harmony Extra XP. The new "SG" stands for soluble granules. While these are new formulations, the more important change is that the herbicide concentrations have changed. Both new formulations are less concentrated so labeled rates are 50% higher than with the old formulations. If you are using either of these herbicides, be sure to check which version you are spraying and double check the rates.

