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## Spring Herbicide Applications on Winter Wheat

The date on the calendar may indicate that we are still in the winter season, but the weather outside would indicate otherwise. The temperatures of the past winter have been mild especially throughout late February. The mild winter and early spring like conditions are not only favorable for a good wheat crop, but also for winter annual weeds. Winter annual weeds that occur in wheat fields over the winter will also be taking full advantage of the spring like conditions to get a jump-start to the season. Many wheat producers, especially in the southern regions of Indiana will soon be or already are topdressing their wheat to take advantage of this favorable weather. Those looking into topdressing need to also be scouting for weeds and determining if a herbicide application is necessary on any existing winter annual weeds. The following information will outline winter annual weeds to look out for, weed scouting tips, crop stage restrictions, and herbicide recommendations.

Some common broadleaf weeds to scout for in your winter wheat are dandelion, purple deadnettle, henbit, chickweed, Canada thistle, and wild garlic. These winter annual species that emerge in the fall can remain relatively inconspicuous through the winter and become competitive and troublesome during the spring if not controlled early in the spring. Summer annual weeds such as ragweed will be of less concern in the early spring and will be outcompeted by the wheat crop if managed properly, especially in the favorable conditions currently being experienced. Grass weeds to be aware of and scouting for are: annual bluegrass, annual ryegrass, cheat, and downy brome.

Determining the severity of weed infestations in your wheat fields is key in determining the necessity of a herbicide application. As with all agronomic crops, you should scout your entire field to determine what weed management practices need to be implemented and determine any areas of severe weed infestations. Wheat fields that contain uniform infestations of at least one broadleaf weed and/or three grass weeds per square foot should be taken into consideration for a herbicide application to avoid yield loss and harvest interference problems. Some fields that have less uniform infestations, but rather pockets of severe infestation should be managed to reduce weed seed production and future infestations.

When determining your herbicide program for spring applications, the stage of the wheat crop should be considered. The majority of wheat herbicides are labeled for application at certain wheat growth stages and some commonly used herbicides have very short windows in which they can be applied. The popular broadleaf weed herbicides 2,4-d and MCPA are efficient and economical, but can only be applied for a short period of time between tillering and prior to jointing. This is a short window that occurs early in the spring and may occur even earlier this year if current weather conditions hold into the spring. Wheat growth stages and herbicide timing restriction are outlined in Figure 1.

If weed infestations are severe enough to require a herbicide application, the use of liquid nitrogen fertilizer solution as a carrier is a popular option for applying herbicides and topdressing the wheat crop in a single pass over the field. Caution should be taken when using a liquid fertilizer as a herbicide carrier as moderate to severe crop injury can result, especially in saturated conditions. Many post applied wheat herbicide labels allow for liquid nitrogen carriers, but require different rates and types surfactants than if the herbicide was applied with water as the carrier. Table 1 includes precautions to be taken when applying wheat herbicide using liquid fertilizer as a carrier; further details and directions can be acquired from the herbicide label.

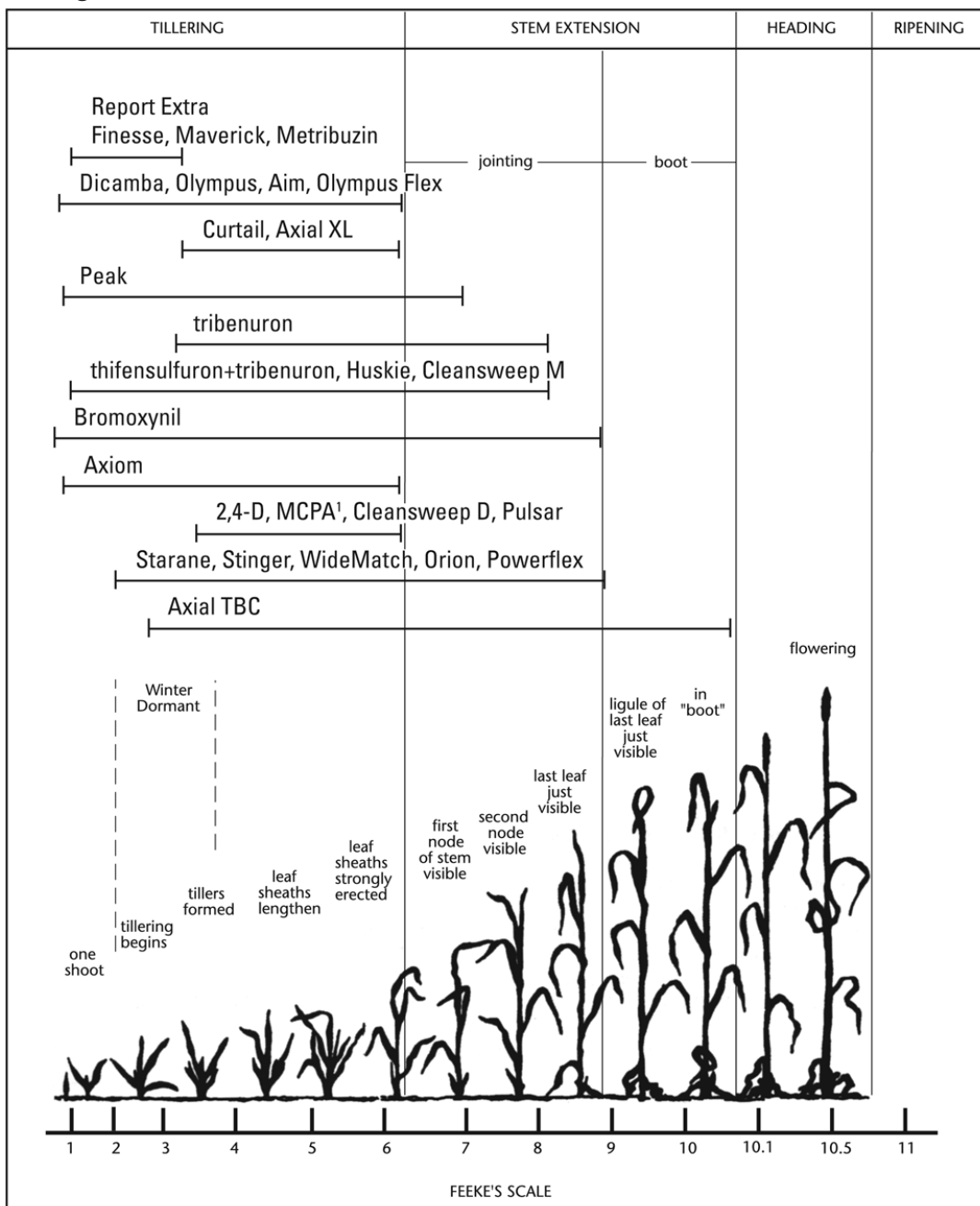


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Another consideration growers should take into account when planning early spring herbicide applications is the plant back restrictions to double crop soybeans. A large percentage of the herbicides listed in Table 1, especially those with activity on Ryegrass and Brome, have soybean plant back restrictions greater than the typical three month time period between spring applications and double crop soybean planting. The soybean plant back restrictions greatly reduce the number of options available to wheat producers who double crop soybeans after wheat. Refer to Table 1 for more specific plant back timing restrictions.

**Figure 1. Feeke's scale of winter wheat stages and herbicide application timings.**



Information listed here is based on research and outreach extension programming at Purdue University and elsewhere.

The use of trade names is for clarity and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current and update precautions and restrictions. Copies, reproductions, or transcriptions of this document or its information must bear the statement:

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**Table 1. Spring applied wheat herbicide rates, crop stage restrictions, weed control spectrum, soybean plant back timing, and liquid fertilizer carrier recommendations.**

Active Ingredients	Trade Name(s)	Rate per Acre	Application Timing	Winter Annual Weeds Controlled	Liquid Fertilizer Carrier Recommendations	Soybean Plant Back Restriction
2,4-D	Weedar, Weedone, Formula 40, others	1 to 2 pts	Tillering to before jointing	Prickly and wild lettuce, mustards, field pennycress, shepherd's purse, horseweed (marestail), Dandelion*	The use of a liquid fertilizer as a carrier will increase the risk of crop injury	No restriction for early spring applications
Bromoxynil	Buctril, Moxy	1 to 2 pts	Emergence to boot stage	Mustards, henbit, field pennycress, shepherd's purse,	UAN used as a carrier in early spring may increase leaf burn, do not use fertilizer carrier after jointing	No restriction for early spring applications
Bromoxynil + pyrasulfotole	Huskie	13.5 to 15 oz	After 1-leaf stage up to flag leaf emergence	Purple deadnettle, henbit, prickly and wild lettuce, horseweed (marestail), mustards, field pennycress, shepherds purse, chickweed	Can be applied in a liquid fertilizer solution that does not exceed 50% nitrogen and is not being applied above 30 lb/Acre	4 Months
Bromoxynil + fluroxypyr + 2,4-D	Cleansweep D	1 to 1.5 pts	Tillering to before jointing	Henbit, horseweed (marestail), mustards, field pennycress, shepherds purse, Canada thistle		4 Months
Bromoxynil + fluroxypyr + MCPA	Cleansweep M	1 to 1.5 pts	2-leaf to flag leaf emergence	Henbit, horseweed (marestail), mustards, field pennycress, shepherds purse, Canada thistle		4 Months
Clopyralid	Stinger	0.25 to 0.33 pts	After 2-leaf stage until boot stage	Horseweed (marestail), Canada thistle, dandelion* prickly and wild lettuce		10.5 Months
Clopyralid +2,4-D	Curtail	1 to 2.67 pts	Tillering to jointing	Prickly and wild lettuce, mustards, field pennycress, shepherd's purse, Canada thistle, dandelion*, horseweed (marestail)	UAN can be used as a liquid fertilizer carrier	10.5 Months
Dicamba	Banvel	0.125 to 0.25 pt	Emergence to before jointing	Prickly and wild lettuce, horseweed (marestail), shepherd's purse, dandelion*	Conduct compatibility test as outlined by label prior to application	No restriction for early spring applications
MCPA	Chiptox, Rhomene, Rhonox	1 to 4 pts	Tillering to before jointing	Field pennycress, shepherd's purse, mustards, pigweed, prickly lettuce, horseweed (marestail)	The use of a liquid fertilizer as a carrier will increase the risk of crop injury	No restriction for early spring applications

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**Table 1 Continued.**

Active Ingredients	Trade Name(s)	Rate per Acre	Application Timing	Winter Annual Weeds Controlled	Liquid Fertilizer Carrier Recommendations	Soybean Plant Back Restriction
Pinoxaden	Axial XL	16.4 oz	2-leaf to preboot stage	Ryegrass	Can be applied in a liquid fertilizer solution that does not exceed 50% nitrogen fertilizer. Crop injury may be possible.	120 Days
Pinoxaden + fluroxypyr	Axial Star	16.4 oz	2-leaf to preboot stage	Ryegrass	Can be applied in a liquid fertilizer solution that does not exceed 50% nitrogen fertilizer. Crop injury may be possible.	4 Months
Pinoxaden + florasulam	Axial TBC	8.85 oz	3-leaf to boot stage	Ryegrass, chickweed, mustards, shepherd's purse	Can be applied in a liquid fertilizer solution that does not exceed 50% nitrogen fertilizer. Crop injury may be possible.	9 Months
Propoxycarbazone-sodium	Olympus	0.6 to 0.9 oz	Emergence to before jointing	Cheat, downy brome, purple deadnettle, horseweed (marestail), mustards, field pennycress, shepherds purse,	Maximum of 0.25% v/v NIS should be used when applying with a liquid fertilizer carrier. Temporary crop injury may occur.	12 Months and 24" of precipitation
Propoxycarbazone-sodium + mesosulfuron-methyl	Olympus Flex	3 to 3.5 oz	1-leaf to before jointing	Cheat, downy brome, purple deadnettle, horseweed (marestail), mustards, field pennycress, shepherds purse, annual bluegrass, ryegrass	Maximum of 0.25% v/v NIS should be used when applying with a liquid fertilizer solution. Carrier solutions should not contain more than 15% nitrogen fertilizer	5 Months and 18" of precipitation
Prosulfuron	Peak	0.5 oz	Emergence to second node visible	Mustards, field pennycress, prickly and wild lettuce, shepherd's purse, wild garlic, wild onion	Apply with NIS at 1-2 qt/100gal when using a liquid fertilizer carrier	10 Months
Pyroxulam	PowerFlex	3.5 oz	3-leaf to jointing	Cheat, downy brome, ryegrass, chickweed, mustards, field pennycress, shepherds purse	Can be applied in a liquid fertilizer solution that does not exceed 50% nitrogen and is not being applied above 30 lb/Acre. NIS at 0.25% v/v should be added to solution.	3 Months



Table 1 Continued.

Active Ingredients	Trade Name(s)	Rate per Acre	Application Timing	Winter Annual Weeds Controlled	Liquid Fertilizer Carrier Recommendations	Soybean Plant Back Restriction
Thifensulfuron + tribenuron	Harmony Extra TotalSol	0.45 to 0.9 oz	After 2-leaf stage but before flag leaf becomes visible	Wild garlic and onion, field pennycress, mustards, chickweed, henbit shepherd's purse, prickly and wild lettuce, horseweed (marestail), purple deadnettle	Include a surfactant at 0.5-2 pts/100 gal when applying in a carrier that consist of less than 50% nitrogen fertilizer. Consult DuPont representative if carrier contains greater than 50% nitrogen fertilizer	45 Days
Tribenuron	Express TotalSol	0.25 to 0.5 oz	After 2-leaf stage but before flag leaf becomes visible	Chickweed, deadnettle, henbit, wild lettuce, mustards, field pennycress, shepherd's purse	Liquid fertilizer carriers should have 0.06-0.25% v/v NIS added. Temporary crop yellowing and stunting may occur when applied in liquid fertilizer. This injury is occasionally severe, and risk of sever injury may increase under saturated soil conditions.	45 Days

\* The highest labeled herbicide rates should be used to achieve control of dandelion plants with spring applications.

