Weed Control Update - 2024

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Broadleaf Weed Control

We typically apply broadleaf herbicides in the spring for the control of weeds such as dandelion, white clover, and the plantains. This is, after all, when most people are coming outside and getting excited about their yard and all the other things they do with grass. Spring is when people pay attention to the fact that they have weeds in their turf, so the natural reaction is to try to control them. Ironically, making applications of broadleaf herbicides in the spring can result in large bare patches that are filled in by annual grasses, such as crabgrass, and annual broadleaf weeds, such as spurge. In addition, control of perennial weeds tends to be less effective with springtime applications. Perennial weeds persist from year to year via an underground storage structure that may or may not include a taproot. A spring applied herbicide is less likely to translocate through all the below ground structures that make the weed a perennial.

It is not practical to tell a client during the month of April to hold off on dandelion control until November. However, fall always has, and will continue to be, the best time of year to control most perennial broadleaf weeds. Fall herbicide applications offer several advantages over springtime applications. Most annual ornamental plants and vegetables have reached maturity and leaves of trees and shrubs are beginning to turn color and fall off the plant. Therefore, the chance of non-target injury due to herbicide drift is greatly reduced compared to springtime applications. Also, winter annual weeds such as henbit and common chickweed are controlled if the application is done after they germinate (see below). But the major advantage of fall applications is effectiveness and duration of control.

Perennial weeds typically generate new vegetative growth in the early spring, flowers in late spring or early summer, and then persist into fall. During the spring, when the weed is generating new vegetative growth, it uses carbohydrates stored over winter in the underground storage structures. To bring these materials to the generating leaves, the plant translocates the carbohydrates from below ground upward. To get effective control, the herbicide must translocate throughout the root system and the underground structures. If you apply herbicides in the spring, they must move against this upward translocation stream. Spring applied herbicides are almost never as effective as they could be because the herbicide can't as effectively reach all the below ground structures of the weed. During the fall, the weed begins to store carbohydrates for over-winter and for next year's growth. When this occurs, the translocation stream is downward. Herbicides applied when the plant is actively translocating carbohydrates underground are also more effectively moved into the roots and storage structures, resulting in better overall control of below ground structures.

In rare instances in a mature lawn (or if you are seeding a lawn), you may encounter a turf area with annual broadleaf weeds only. If this is the case, then fall application of herbicides are not warranted since annual weeds are at the end of their life cycle. The only situation in which you

would target annual weeds in the fall is if their cover is so great as to interfere with good growth of the turfgrass. Annual broadleaf weeds are better controlled using preemergence herbicides applied in the spring or postemergence herbicides applied before they flower and set seed.

Another important advantage of fall broadleaf herbicide applications is that you can get good control of germinated winter annual broadleaf weeds, which have been a significant issue in recent years. Our winters have been comparatively mild for the last several years, which has aided the proliferation of these species. The result is a significant increase in cover of winter annual weeds such as common chickweed, henbit, purple deadnettle and hairy bittercress. Properly maintaining cool season turf this fall will help to combat winter annual broadleaf weeds. Annuals do not establish as effectively when there is a dense cover of turfgrass to compete. But, along with proper turf cultural management practices, there are selective herbicides to deal with winter annuals.

To maximize control of both perennial and winter annual broadleaf weeds you should apply the right herbicides at the right time (**Tables 1-3**). A 3- or 4-way combination product will usually be your best choice. Also, you will want to make sure that whatever you select contains at least one phenoxy (2,4-D, 2,4-DP, MCPP, MCPA) or pyridinoxy (triclopyr, clopyralid, fluroxypyr) that is in an ester form. You can determine this by looking at the list of ingredients on the label. It is important to select an ester because that formulation is more likely to penetrate the weed leaf tissue and therefore more effectively control the weed when making applications in cooler weather. Amine formulations are used more in springtime because they have lower volatility and therefore are less likely to injure nearby ornamentals when applied in warmer temperatures. However, amine formulations do not work as well in cool weather. Because of this, and since most ornamentals lose their leaves in the fall (decreasing but not eliminating their susceptibility to spray drift) ester formulations are the better choice for a fall application.

When to apply is just as important as what to apply. You should make sure that the target winter annuals are germinated, which is usually by the start of November. The best time to apply herbicides is generally around the same time that the last mowing and fertilization of the year occurs (October to early-November in the Midwest). Ideally, air temperatures will be consistently in the 40's and 50's and soil temperatures will still be in the 50's. Another indicator for proper timing is that the grass is no longer growing and being mowed but is still green. Many university trials have proven that the best control of perennial broadleaf weeds occurs if they are sprayed then.

There are a couple of things remember about fall herbicide applications. The plant is not metabolizing as quickly, and you will not see the dramatic burn down, twisting and epinasty that you normally see with an application in warmer weather. However, while it may not appear as though the application was effective, if you return to that spot next spring the weed will be dead and not coming back. Remember that postemergence herbicides are most effective if applied during sunny weather with no rainfall within 24 hours of application. While

a springtime application may provide as few as 8 weeks of control, a properly timed and applied herbicide in fall may control winter annual and perennial broadleaf weeds for up to one year.

Table 1. Combination herbicides with phenoxy herbicides are typically less expensive but might not provide consistent control when a large amount of difficult to control weeds are present.

Broadleaf Herbicide Phenoxy Combination Products															
Products	**2,4-D**	**2,4-DP**	**MCPA**	**MCPP**	**Dicamba**	**Clopyralid**	**Fluroxypyr**	**Quinclorac**	**Triclopyr**	**Halauxifen**	**Carfentrazone**	**Sulfentrazone**	**Pyrfaflufen**	**Flumioxazin**	**Florasulam**
Formula 40, Dymec, Weedone LV4, Weedar 64, LESCO A-4D, Weedestroy AM-40, Opti-Amine, Hardball, Barrage HF	■														
MCPP 4-Amine, Turfgro MCPP 4K, Mecomec 2.5, Mecomec 4				■											
2 Plus 2	■			■											
Banvel, Diablo, Vanquish, Doleac DMA					■										
Four-Power Plus, Super D Weedone	■				■										
Trimec Classic, Trimec 899, Trimec 992, Trimec LAF-637, Strike 3, Three Way Selective, Trimec Bent, Bent Selective, Triplet WS, Triplet SF, Trexsan, Mec-Amine-D, Mec Amine-BG, Trimec Plus, 3-D	■			■	■										
MCPA 4-Amine			■												
Triad Select	■		■		■										
Tri-Power, Trimec Encore			■	■	■										
Weedone DPC, Turf D-DP	■	■													
Trimec Turf Ester, Super Trimec, Brushmaster	■	■			■										
Three Way Ester, Tri-ester, Tri-amine, Dissolve, Spoiler	■	■		■											
Tri-ester II, Tri-amine II		■	■	■											

Note: Not all products listed are still currently for sale. Mention of trade name is for example only and does not constitute endorsement over other products which may be similar.

Table 2. Combination herbicides with pyridinoxy herbicides which, for example, may contain clopyralid or fluroxypyr instead of MCPP, may provide more consistent control when a large amount of difficult to control weeds are present.

Broadleaf Herbicide Pyridinoxy Combination Products															
Products	**2,4-D**	**2,4-DP**	**MCPA**	**MCPP**	**Dicamba**	**Clopyralid**	**Fluroxypyr**	**Quinclorac**	**Triclopyr**	**Halauxifen**	**Carfentrazone**	**Sulfentrazone**	**Pyrfaflufen**	**Flumioxazin**	**Florasulam**
Turflon Ester Ultra, Triclopyr 4, Triclopyr 4E Select									■						
Chaser, Chaser 2, Turflon II amine	■								■						
Cool Power, Horsepower, Three-Way Ester II, Eliminate			■		■				■						
Triad T Select	■		■		■				■						
Sublime (also contains mesotrione)					■				■						
Lontrel						■									
Millenium Ultra 2, Millenium Ultra Plus	■				■	■									
Chaser Ultra			■		■	■									
Confront, 2-D						■			■						
Momentum	■					■			■						
Battleship			■			■			■						
Spotlight							■								
Chaser Ultra 2		■	■				■								
Strike Three Ultra 3	■	■					■								
Change Up			■		■		■								
Last Call (also contains fenoxaprop)					■		■								
Escalade 2	■				■		■								
Tailspin							■		■						
Momentum FX, Momentum FX2	■						■		■						
Battleship III			■				■		■						
GameOn	■						■			■					
Switchblade (Registration Pending)					■		■			■					
Drive, Drive XLR8, Quinclorac 75 DF, QuinPro, Eject 75DF, Quintessential								■							
Onetime				■	■			■							
Quincept, 2DQ, Triad QC Select	■				■			■							
Defendor															■
Relzar (Registration Pending)										■					■

Note: Not all products listed are still currently for sale. Mention of trade name is for example only and does not constitute endorsement over other products which may be similar.

Table 3. Combination herbicides with protox inhibiting herbicides such as carfentrazone, while more expensive, may provide the best and most consistent control when a large amount of difficult to control weeds are present.

Broadleaf Herbicide Protox Inhibitor and other Combination Products															
Products	**2,4-D**	**2,4-DP**	**MCPA**	**MCPP**	**Dicamba**	**Clopyralid**	**Fluroxypyr**	**Quinclorac**	**Triclopyr**	**Halauxifen**	**Carfentrazone**	**Sulfentrazone**	**Pyrfaflufen**	**Flumioxazin**	**Florasulam**
Quicksilver, Quicksilver T & O											■				
Shutout	■			■							■				
Speedzone, Speedzone EW	■			■	■						■				
Powerzone			■	■	■						■				
Redzone	■	■			■						■				
Dismiss, Expel												■			
Dismiss NXT											■	■			
Solitare								■				■			
Surge, SureZone	■			■	■							■			
Triad SFZ Select	■		■		■							■			
Q4, Q4 Plus	■				■			■				■			
Momentum 4-Score	■						■		■			■			
T-Zone, Foundation, Triad TZ Select	■				■				■			■			
Octane													■		
4 Speed, Redzone 2	■			■	■								■		
4 Speed XT	■				■				■				■		
Sure Power	■						■		■					■	

Note: Not all products listed are still currently for sale. Mention of trade name is for example only and does not constitute endorsement over other products which may be similar.

Grassy Weed Control

Several new active ingredients for grassy weed control have been released in the past several years. Many of these products offer selectivity of control or effectiveness that was not previously available.

Velocity Herbicide (byspyribac-sodium)

Velocity PM is now back on the market. Velocity is labelled for the selective control of annual and rough bluegrass in tall fescue and perennial ryegrass turf. It is labelled for use on fairways and tees as well as residential and commercial lawns, sod farms and athletic fields. There are programs for both slow conversion and rapid removal of the Poa. Extreme caution should be exercised if used in Kentucky

bluegrass. Some Kentucky bluegrass cultivars sustain only light damage while others are severely damaged. Velocity is also labelled for control of several broadleaf weeds and may become an important tool for resistance management.

PoaCure Herbicide (Methiozolin)

After a ten-year registration effort, PoaCure is now available to the golf course market. It is registered for control of annual bluegrass (PRE and POST), rough bluegrass (POST) and crabgrass and goosegrass (PRE). It is very safe on cool season turfgrass. The main use of this product is for the control of annual bluegrass on creeping bentgrass putting greens. The key to effective use of the product is to know the biotype of annual bluegrass you are trying to control and to avoid programs that are too aggressive because you can remove the annual bluegrass faster than then bentgrass can recover. The PoaCure program on the label is designed for slow removal of Poa. It I important to stay on the program as environmental stress combined with treatment will result in best conversion back to creeping bentgrass. Following use, biostimulants and fertilizers can improve the rate of bentgrass recovery while PGR's may slow the rate. No resistance issues have been reported but it will be important to control escapes.

Xonerate Herbicide (Amicarbazone)

This product is used for control of annual bluegrass and 22 other weeds that are listed on the label. Control of annual bluegrass with any herbicide can be variable, but research has shown up to 90% control is possible with Xonerate. For cool season turfgrasses such as Kentucky bluegrass and perennial ryegrass the label includes 2 application schedules but most university research is recommending the lighter and more frequent 1.0 oz rate and to not apply when temperatures are too warm (above 85 degrees). Best control is achieved when applications are started in mid-April. Make sure to refer to the label for specific application instructions.

Pylex Herbicide (Topramezone)

A recent introduction from BASF has a similar mode of action to that of mesotrione, the active ingredient in Tenacity herbicide. Pylex has both pre and postemergence activity and is labelled for the control of 15 grassy and 39 broadleaf weeds, both annual and perennial. It is excellent for the control of goosegrass and dallisgrass. In addition, research has found that it can be very effective for the postemergence control of tillering crabgrass. Pylex also has activity on perennial grassy weeds and is labelled for either suppression or control bermudagrass, dallisgrass and nimblewill. Control of these weeds is achieved with a 2 or 3 application schedule like that of mesotrione. Consult the label for specifics. Like mesotrione, Pylex can be applied on the day of seeding for suppression or control of germinating grassy and broadleaf weeds but is safe to seedlings of tolerant turfgrass species.

Tips for Postemergence Control of Crabgrass and Other Annual Grassy Weeds

The bigger the weed, generally, the more difficult control will be. But control of leaf stage crabgrass in June will often result in more crabgrass germination following herbicide application.

For late stage (>6 tiller) crabgrass, research conducted at The Ohio Turfgrass Foundation Research and Education Center has found that application of a ½ label rate of quinclorac (e.g. Drive) combined with

either a ½ label rate of topramezone (e.g. Pylex) or a ½ label rate of mesotrione (e.g. Tenacity). This combination has provided better than 95% control in our trials**.**

It's also important to properly identify the grassy weeds which are present because in most cases the herbicide recommendations for postemergence control differ. For example, goosegrass is better controlled with fenoxaprop while crabgrass is better controlled with fenoxaprop, quinclorac, or topramezone. Barnyardgrass is better controlled with fenoxaprop while field paspalum is better controlled with topramezone.

Sedge Control

Be aware that in addition to yellow nutsedge, false green kyllinga is now a commonly seen sedge in Ohio. False green kyllinga is a different species that produces rhizomes. Because of this, it can spread and form mats in the turf, which can cause decline of the turfgrass. Sedges can be difficult to differentiate vegetatively but has easy to recognize flower structures (Figure 3). In almost all cases, the herbicides that are recommended can be used interchangeably for sedge and kyllinga control.

Arkon and Vexis Herbicides (Pyrimisulfan)

Vexis is available as a granular formulation and Arkon is a newly labelled liquid formulation for postemergence control of sedges and kyllingas as well as certain broadleaf weeds including many winter annuals and buckhorn plantain. Since Vexis is a granular formulation that will reduce the chances for off target drift. Both products are labelled for use on residential and commercial sites, golf course fairways, tees and roughs and sports fields.

Dismiss NXT Herbicide (sulfentrazone + carfentrazone)

Dismiss NXT contains carfentrazone in addition to sulfentrazone, the active in Dismiss herbicide. This product is effective for control of sedges and summer annual broadleaf weeds.

Celero Herbicide (Imazosulfuron)

Celero is labelled for control of yellow and purple nutsedge as well as annual sedges and kyllingas. It is marketed more for kyllinga control in southern turf but does show good tolerance when used on northern turf. Since it is a different class of chemistry it provides a good option for managing weed resistance.