

Weed control in winter cereals

Shay Phelan
Teagasc Crops, Environment and Land Use Programme



Phelim McDonald
Teagasc Carlow



The wet autumn delayed planting of winter cereal crops and created a backlog of work for many farmers.

As a result on most farms, the weed control strategies will have to be adjusted since the pre-emergence options were not used due to workload and field conditions not allowing tractors and sprayers into fields.

For most growers, post-emergence treatment will be used this season, but slight adjustments may have to be made especially where troublesome grass weeds are present.

With a limited number of active ingredients to choose from, knowing your problem weeds and targeting them will be an important part of any weed control plan.

Target the most competitive weeds for control early but also bear in mind that for grass weeds, such as annual meadow grass, the products available work best on small plants.

Early application, especially for control in winter barley, is essential.

Weed control strategies

- Refer to field history and the weeds in each field.
- Identify the weeds and their economic importance.
- Know the strengths and weaknesses of available herbicides.
- Apply herbicides to suit the weed stage and weather conditions.

Post-emergence applications need to be applied early, at the two- to three-leaf stage for best effect. You should then assess weeds when spring growth commences. Table 1 lists the available herbicides for winter cereals.

Annual meadow grass

Annual meadow grass is considered a moderately competitive weed and is not as competitive as wild oats or cleavers.

Table 1: Main winter cereal herbicide autumn post-emergence options

Name	Rate/ha	Latest timing	Comments
Alister Flex Wheat only	0.8-1.0 L	GS 29	Cleaver control up to four whorls, good on fumitory, poppy and volunteer oilseed rape. Good contact effect on grass weeds. Limited residual effect. Use early post-emergence.
Firebird	0.3 L WB	GS 24	Good residual control of BLW and grass weeds esp. AMG. Use pre-emerge for best effect. Second application where label allows for improved sterile brome control.
Navigate	0.3 L WW	GS 23	
Griffen	0.3 L WB	31 Dec	Max single dose 0.3L/ha (Firebird, Navigate and Griffen WB). 0.6L/ha Naceto, Reliance & Griffen WW.
Reliance	0.6 L WB	GS 21	
Naceto	0.6 L WW	GS 13	
Wheat & barley Monolith	0.33kg/ha	GS 33	Mainly for sterile brome and Black grass but also control wild oats, AMG RSMG.
Wheat only Broadway star	0.265 kg	GS 32	Strong brome and grass weed product with main BLW. Needs PDM for AMG control & residual activity. For spring post emergence use. Needs an adjuvant
Wheat only Defy Roxy 800EC Quidam Wheat & barley	2.0 L	GS 21	Very good option for high AMG situation. Add DFF 0.1l/ha for additional BLW control. Use pre or early post emergence. Avoid use at peri emergence on Winter Barley.
Diflanil 500 Hurricane Stride Sempre Farmco Dazzle Solo Wheat, barley & oats	0.25	GS 29	BLW only. No grass-weed control. Poor on fumitory and poppy.
Anthem Sharpen Stomp Aqua Fastnet	3.3 L 3.3 L 2.9 L 3.6 L	GS 30	Broad spectrum, better on fumitory than DFF but weak on groundsel. Good AMG pre em. Good residual activity for pre-emergence situations.
Most Micro Wheat & barley Flight Wheat & barley	3.6 L 4.0 L	GS 30	Broad spectrum. Good on cleavers, poppy & fumitory, weak on groundsel. Use pre emerge for best AGM control.
Adept Wheat & barley	4.2L/ha	GS 30	For AMG suggested pre emerge use 4.0 plus 0.15L/ha DFF. For post emerge use 3.25L/ha plus Defy 2.0L/ha.
Tower Wheat & barley	2.0 L	GS 30	Amg control plus BLW incl. Fumitory, cleavers, poppy, speedwell. Can be applied pre or post emergence. Buffer zone 9m.
Fence Wheat & barley Thor	0.5L 30g	GS 13 GS 39	Good grass weed control when used early. Tank mix partner for DFF and PDM mixes. Good mixer for BLW control. Will control vol. osr and beans at 10g/ha
Wheat & barley Tribe Wheat, barley & oats	10g+	GS 33	Good mixer for BLW control. Will control vol. osr and beans at 10g/ha
Wheat & barley Cameo Max	Max dose 60g/ha	GS 39	BLW control. Useful for tidy up. Needs growth for best results.
Wheat & barley Zypar Wheat, barley & oats	0.75L	GS 45	Useful tidy for difficult weeds including cleavers, fumitory, poppy, vol. osr, vol beans and wild carrot.

Table 2: Brome control in winter wheat in spring

Product	Rate/ Ha	Weeds controlled
Alister flex	0.8 -1.0L	Charlock, cleavers, chickweed, pansy, deadnettle, fumitory, poppy, volunteer OSR, speedwell, AMG, brome. Not very persistent in autumn, often used in Feb.
Broadway star	0.265 kg	Cleavers, chickweed, charlock, marigold, pansy, groundsel, speedwell, wild oats, volunteer OSR, brome. Add adjuvant e.g. Torpedo for best results
Pacifica Plus	400g	Brome, wild oats, AMG, volunteer OSR, chickweed, charlock, deadnettle, groundsel.
Mix restrictions		
Monolith	330g	Wild oats, blackgrass, bromes, AMG, chickweed, mayweeds



But it can multiply quickly, often producing two generations in one season. It can become a problem quite quickly in thin crops and can cause trouble at harvest time. The control of annual meadow grass requires a strategic approach in winter wheat and barley.

There are many effective products for the control of annual meadow grass on the market such as Flufenacet, e.g. Firebird; Prosulfacarb e.g. Defy; Pendimethalin-based – Stomp etc; or Chlorotoluron – Tower. In the spring, products such as Allister flex/Pacifica can be used in wheat.

Generally, the autumn-applied products are most effective when they are used pre-emergence or early post-emergence.

Broad leaved weeds

For some late-planted crops there may be no opportunity to apply a herbicide until the spring. This should still be OK for most weeds but using spring type herbicides such as a sulfonylurea or a hormone-type product need good growing conditions for best effect.

You also need to be aware of label restrictions concerning latest timings and mixing. They can complicate other treatments, e.g. plant growth regulation, trace elements or disease control, so plan carefully.

Brome

Brome is an increasing problem in winter cereals and needs careful management to prevent a buildup of a weed seed bank. An effective control strategy comes from the integration of cultural and chemical control strategies.

In winter barley, where brome is a problem, chemical control is based on products containing flufenacet but these products need to be used pre-emergence and repeated early post-emergence and will still only achieve 50% to 60% control.

In winter wheat, there are a number of chemical options which can be used in spring but growers must avoid using the same products each year as this will eventually lead to a build-up of resistance.

One farming family who take a

planned approach to weed control is that of George and Muireann Byrne, who took over their farm from well-known Larry and Kathleen Byrne, just outside Carlow town.

George grows all winter cereals and plants beans, beet and maize in the spring, giving him good opportunities to break problem weed lifecycles. It takes a lot of skill and effort to juggle and manage a rotation with seven or eight crop types but George is well up to the job, returning some of the best yields and margins every year.

“We plough using minimum till equipment where feasible,” says George. Some barley went in after beans this October using a Lemken disc and Vaderstad drill and the results will be good he believes. His target sowing date has shifted in the last few years with no sowing until after 10 October this autumn.

“Our maize was harvested in the third week of October. Some was pitted for our cattle and some was sold, and it left behind surprisingly good conditions underfoot but he has some beet still to pull and will wait patiently so as not to damage the soil. “I had to stop because the headlands just weren’t to my liking and it’s not gone late yet in my opinion.”

He has been in no rush to sow crops on that land or elsewhere. “I prefer to wait till the weather gives me suitable soil conditions. That means the seed will have the best chance of establishing and weeds will be less likely to compete along with the obvious advantage of lower BYDV risk,” says George. His seeding rates are adjusted upwards with an eye on slugs, crows and the colder, wetter and darker days ahead.

His soils are typical Carlow land, loamy with some lighter pockets and not too much heavy land. This may explain his calm approach to late harvested crops and later plantings this year and his determination to get weeds under control after planting.

“Fields that won’t come right for me, and some headlands, might be left to be sown in spring. I’m not going to fight against them. Winter crops are expensive enough to grow without getting poor yields. Everyone will have a time in their head



when they know further delay won’t result in better conditions.” Farmers on heavy land will agree with him, but will have different dates in their mind depending on their individual circumstances.

George would consider winter sown beans this year but like many others he is fearful of crow damage. “I would have to plough for them so they are not lying in a water filled trench

Carlow tillage farmer George Byrne.



but if the crows are hungry they would find them however deep I sow them. I'll see how much cereal I get sown and decide then."

He reckons there will be no rolling done this autumn as conditions have been start-stop and soils are too tacky. "It would cause much more problems than it would solve" says George. However, his strategy for chemical weed control remains the same.

"Your first opportunity is your best opportunity to hit weeds," George maintains. "I try to apply pre-emerge herbicides if at all possible. With annual meadow grass you have to control as early as possible." Later-sown crops are likely to be a little thinner and weaker, and AMG, more than other weeds, can get well established quite quickly and control options run out then, especially for barley.

George will apply DFF and Pendimethalin up to one week after sowing this year. If conditions do not allow for spraying at that stage, then early post-emergence application of the same products will be his second line of attack. "I won't wait for the third leaf. Post-emergence this year will be into November or even early December for the November-sown wheat and hybrid barley."

George is aware of possibility of spray damage on crops that are just coming up (peri-emergence) but once the first leaf is fully out he will be getting geared up for spraying opportunities. He will treat barley first and then on to the wheat and oats. The ability to correctly time any input to any crop is critical for good production results.

Significant differences

Of any 10 neighbouring farmers on similar soils, there are often significant differences in timing of sprays. Usually only one of the 10 will have got it just right. The post-emergence options are many but whether it's Defy and DFF, Firebird or Tower or Flight, your skill and judgment will determine if the application can be made to the soil you manage.

Sterile brome is kept in check using integrated pest management. "Graminicides on spring break crops, stale seed beds with the later planting has minimised the problem for me," says George. The message has been taken on board: "Don't look for the solution to brome in a spray can."

Winter wheat will often have a follow up treatment of Broadway Star in February and the oats may or may not get anything more. Indeed, if post-emergence application is missed they still may not require any herbicide due to their natural ability to compete with and tolerate weeds.

Of course the only option for the barley next spring will be: "A cheap run with a sulfonylurea to control some BLW like groundsel, fumitory and charlock. I'll fight a battle against weeds whenever I can with rotations, cultivations, and timings and products. And when Teagasc clients read this, I'll still be out looking to spray the emerging crops. Once I win more battles than I lose, I'll be happy enough," George concludes.