

Autumn weed control: know your enemy

Each crop, weed and indeed, each field, must have its own action plan if satisfactory long-term control is to be achieved

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The first step is to identify and locate the main weeds present. Creating a weed map will give you a visual indicator of the extent of your target weeds and show how those weeds are spreading or diminishing over a number of years.

You can use copies of your BPS maps, marking areas of infestation with colours or symbols. Updating the map each year will help you to assess your weed control strategies.

With the loss of active ingredients, a more imaginative approach is essential for weed control on the farm. This 'Integrated pest management' (IPM) ties in well with the increased focus on reducing the quantity of plant protection products (PPP) and the enhancement of biodiversity in agriculture.

Better results are likely when every effort is made to make life difficult for grass weeds before applying any herbicide. IPM combines the advantages of physical, cultural, biological and chemical tools as the best approach to minimise PPP use, while achieving best weed control at justifiable levels of herbicide use.

Your weed map is particularly useful when deciding if there is a role for cultural/cultivation control methods. Examples of these are the light harrowing of land to produce stale seedbeds (used against sterile brome and other weeds), choosing a sowing date when weeds are less likely to germinate and can be out-competed by the crop, higher seed rates, or switching crop type from winter to spring, or from cereal to broad leaf crops.

Gary Bayley, who farms just north of Carlow town, can point out the many cultural options he has taken, and more available to him, in his efforts to control sterile brome in some of his fields.

"The weed first emerged about seven years ago and around that time,

Gary Bayley and Phelim McDonald.



I was entering GLAS," says Gary.

"It seemed a good opportunity to make use of the scheme to aid control solutions. I opted to plant arable margins in particular fields, which, as it happened, was the highest paying measure in GLAS on a per hectare basis."

The aim was that the planted margin would establish itself and prevent the encroachment of the broom into the fields, as further cultivations would not be carried out on the margin. Gary sowed a grass mix with over 60% Timothy.

He says that while the arable margin itself has worked, it has virtually no broom in its width, and has certainly paid for itself. However, some broom has reappeared along the field edge of the margin. "It amounts to about

a foot or two wide, located in patches along the length of the grass margin," adds Gary.

Mowing before August 15 is not permitted under GLAS and strimming the edge of the crop is impractical, as Gary also works off-farm.

"I might try one run of a light disc, right up to the margin, to produce a stale seedbed to reduce the seed bank in the soil," he adds.

The key message from Gary's work is that while no cultural control method on its own is 100% effective, combinations are much more likely to achieve satisfactory results.

Gary is also considering changes to his rotation, which has seen winter barley in this particular field for the

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Phelim McDonald and Gary Bayley view some of the few sterile brome plants that have escaped Gary's control programme.

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last three years and for five of the last six years.

“A change of rotation would allow me to plant at a more opportune time and also use alternative active ingredients,” he says.

The land in question, while not ideal for wheat or for beans, could grow them with the expectation of benefits to succeeding crops as outlined in detail at the Teagasc Oak Park Open Day last July. This second line of attack may well get Gary over the line to even more acceptable control in the coming years.

Gary used post-emergence applications of Firebird and DFF, followed by AllyMax and Axial Pro in spring to complete his weed control strategy.

The principles Gary has employed in regard to the management of his grass weed are the same as should be used by every farmer with difficult weeds, be they wild oats, canary grass, annual meadow grass or black grass – identify, locate, prevent seed return, implement cultural/physical

control and only then select the best available chemical control.

While all this is going on, Gary, and all readers, will also have to contend with the full spectrum of Broad Leaf Weeds (BLW) found in tillage fields.

IPM will work in your favour for BLW also, and so the choice of chemical and its timing will come after IPM strategies have been implemented (stale seedbeds, rotations, cultivation systems, sowing rate and date).

The application of herbicides in autumn is undergoing a change at present. There is a trend in favour of pre-emergence application and in particular on early-sown fields, or where grass weeds are a problem and where drill markers or GPS technology is available.

Of course, it is the availability of time that will eventually determine this course of action, but you also need the seedbed to contain some moisture or receive light rain after application.

In many cases, a follow-up application will be required to catch late germination and weeds not susceptible to the pre-emerge herbicide, and this can be done in spring.

The more traditional post emergence spray is still very much a valid option. Application at the two to four leaf stage of the crop is best for control of grass weeds. Indeed, all weeds are more susceptible at younger growth stages.

It is really only around the peri-emergence stage that herbicides should be avoided, as bleaching and scorch of the crop is more likely then.

As with all herbicide choices, farmers are advised to use a mix of active ingredients as an anti-resistance strategy and to select herbicides based on the most competitive weeds in the field.

In many cases, fumitory, poppy and cleavers can be dealt with in spring, before they start to compete with the crop.

Table 1 offers an overview to many of the products available this autumn for weed control in cereals.

Your choice should only come after implementation of the main control strategies, the cultural/IPM controls discussed. Take note of the approved crops, rates and latest timings, as well as the comments on strengths and weaknesses.

Teagasc weed screen trial 2021

As part of the Enable Conservation Tillage (ECT) project, Teagasc conducted a weed screen trial to look at the various different herbicide options that are commonly available on the market.

The trial looked at pre and post-emergence options and both autumn and spring applications to figure out the best strategies to control a variety of weeds, including sterile brome, annual

meadow grass, wild oats and various different broadleaf weeds

From our observations of the trial, a number of key recommendations for optimum weed control emerged:

- IPM strategies are important for optimum weed control – these include stale seedbeds, knowledge of the predominant weeds in the field and selecting the correct herbicide for each individual situation
- Pre-emergence application of autumn herbicides generally give better

control of weeds, especially difficult grass weeds such as sterile brome.

- It is possible to achieve good control of weeds post-emergence, but timing and product choice are critical.
- Leaving weed control until the spring is the least favourable option, as control can often be less than ideal and the herbicides can be tougher on the crop.

The results of the weed screen trial are available to view on the Teagasc Crops YouTube channel.

Table 1: 2021 winter cereal herbicides.

Name	Active ingredients	Rate/Ha	Latest timing	Comments
Avadex Factor Wheat & Barley	Tri-allate 450g/l	3.6l	Pre-em	Can reduce blackgrass population. Apply pre-em in combination with Flufenacet (+DFF) +/- PDM. Will need post-em follow up. Do not apply to shallow drilled wheat in the autumn. Does not need incorporation.
Alister Flex Wheat only	Diflufenican 120g/l Mesosulfuron-methyl 9.0g/l Iodosulfuron-methyl-sodium 7.5g/l	0.8-1.0l	GS 29	Cleaver control up to 4 whorls, good on fumitory, poppy and vol. osr. Good contact effect on grass weeds. Limited residual effect. Use early post-emergence.
Firebird Navigate Wheat and barley	Flufenacet 400g/l Diflufenican 200g/l	0.3l WB 0.3l WW	GS 24 GS 24	Good residual control of BLW & grass weeds esp. AMG. Use pre-emerge for best effect. Max single dose 0.3L/ha
Griffen Wheat & barley	Flufenacet 400g/l Diflufenican 200g/l	0.3l WB 0.6l WW	Dec 31	Good residual control of BLW and grass weeds esp. AMG. Use pre-emerge for best effect. Max single dose 0.3L/ha WB & 0.6L/ha WW
Reliance Naceto Wheat & barley	Flufenacet 400g/l Diflufenican 200g/l	0.6 L WB 0.6 L WW	GS 21 GS 13	Good residual control of BLW and grass weeds esp. AMG. Use pre-emerge for best effect. Max single dose 0.6L/ha
Firebird Met Wheat & barley	Flufenacet 240g/l + Diflufenican 90g/l + 70g/L Metribuzin	1.0l WW 0.5l WB		Broad spectrum weed control. Can be used pre-em up to end of Nov, but best effect from earlier applications.
Monolith Wheat only	Mesosulfuron 45g/kg Propoxycarbazone 67.5grms	0.33kg/ha	GS 33	Mainly for sterile brome and black grass, but also control wild oats, AMG RSMG.
Defy Roxy 800EC Quidam/Crozier Wheat & barley	Prosulfocarb 800g/l	2.0l	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 Semptra/ Solo Farmco Dazzle Wheat, barley, oats	Diflufenican 500g/l	0.25l	GS 29	BLW only. No grass-weed control. Poor on fumitory and poppy.
Purelo Wheat & barley	Prosulfocarb 667g/l Diflufenican 14g/l	4.0l	GS 13	Mix of Defy and DFF can be used both pre- and post-emergence.
Pendifen Stomp Aqua Fastnet Most Micro Wheat & barley	Pendimethalin 400g/l Pendimethalin 455 g/l Pendimethalin 365g/l Pendimethalin 365g/l	3.3l 2.9l 3.6l	GS 30	Broad spectrum. Good on cleavers, poppy and fumitory, weak on groundsel. Use pre-emerge for best AGM control.
Adept Wheat & barley	Pendimethalin 313g/l Diflufenican 15.6g/l	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	Chlorotoluron 250g/l Diflufenican 40g/l Pendimethalin 300g/l	2.0l	GS 30	Amg control plus BLW incl. Fumitory, cleavers, poppy, speedwell. Can be applied pre- or post-emergence. Buffer zone 9m.
Fence/ Tacit Wheat & barley	Flufenacet 480g/l	0.5l	GS 13	Good grass weed control when used early. Tank mix partner for DFF and PDM mixes.
Tribe Wheat, barley, oats	750g/kg Tribenuron	10g+	GS 33	Good mixer for BLW control. Will control vol. osr and beans at 10g/ha.
Cameo Max Wheat, barley, oats	Tribenuron-methyl 250g/kg Thifensulfuron methyl 250g/kg	Max dose 60g/ha	GS 39	BLW control. Useful for tidy up. Needs growth for best results.
Zypar Wheat & barley	Halaxifen-methyl 6.25g/l Florasulm 6g/l	0.75l	GS 45	Useful tidy for difficult weeds incl. cleavers, fumitory, poppy, vol. osr, beans, wild carrot.