

HERBICIDE-RESISTANT GRASSWEEDS ARE YOU AT RISK?

Herbicide resistance, especially in blackgrass, Italian rye-grass and wild oats, is a major threat to the sustainability of arable cropping. The solution lies in understanding what practices pose the highest risk on your farm, and acting now to change them.

That's what the audit on this leaflet will help you to do. It will take you through the key risk factors that influence the development of grassweed resistance and show you the areas at risk on your farm. Knowing the overall impact of your management decisions is a big step towards preventing resistance increasing in fields where there's already a problem. For those fields not badly affected there's a real opportunity to keep them free of resistance.

Remember weeds are relatively immobile compared to most pests and diseases so preventing and managing resistance is within your control.

While there's no one answer to containing grassweed resistance, aim to reduce the overall numbers of grass weeds in your fields with a strategy that includes one or more of the following:

- Cultivations such as ploughing
- Crop rotational strategies such as the inclusion of spring cropping
- Delayed autumn sowing to enable maximum kill of emerged weeds pre-drilling
- Careful selection of herbicides which should be applied correctly at the optimal timing
- Good seedbeds that help maximise the efficacy of pre-emergence herbicides
- Avoiding over reliance on high resistance risk herbicide groups

The main factors affecting resistance risk are:

Cultural: Changing cultural practices can have a much greater impact than tweaking your herbicide regime. The following can help to *reduce* the risk:

Ploughing	Spring cropping	Competitive crops
Effective use of set-aside	Crop rotation	Delayed drilling
Preventing seed return	Avoiding spread of seeds	

Chemical: Use herbicides responsibly and don't rely on more applications or new herbicides to provide a solution. All herbicide groups pose some risk but the following pose a *higher* risk than others:

Herbicide Group	Active Ingredient	Product (example)
'fops'	clodinafop-propargyl diclofop-methyl fenoxaprop-P-ethyl fluazifop-P-butyl proparaquizaop quizalofop-P-ethyl	Topik <i>in</i> Tigress Ultra Cheetah Super Fusilade Falcon Sceptre
'dims'	cycloxydim tepraloxym tralkoxydim	Laser Aramo Grasp
sulfonylurea type (for grassweed control)	flupyrsulfuron-methyl iodosulfuron-methyl-sodium mesosulfuron-methyl propoxycarbazone-sodium sulfosulfuron	Lexus Hussar <i>in</i> Atlantis Attribut Monitor

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YOUR HERBICIDE RESISTANCE AUDIT *Herbicide Resistance: What's your rating?*

1. Photocopy this sheet, before completing, if you wish to use the audit on one more than one field or part of the farm
2. Decide whether the descriptions low, medium or high best suit the field history for each of the individual risk factors
3. Write the relevant score (1, 3 & 5) for each risk factor in the right hand column (use the intermediary values 2 and 4 if necessary)
4. Calculate the sub-totals for cultural and chemical control and add them together for the final score to find out how big a risk herbicide resistance is on your farm

	Risk Factor (Score)	Low (1)	Medium (3)	High (5)	Your score
	Cultural				
1	Crop rotation	More than 3 different crops in the rotation	2-3 different crops in the rotation	Single crop – no rotation	
2	Spring sown crops/set-aside	Comprise more than 25% of crops in the rotation	Comprise 25% or less of crops in the rotation	None	
3	Cultivation system	Plough used more than non-inversion tillage	Non-inversion tillage and ploughing used to about the same extent	Non-inversion tillage used more than ploughing	
4	Autumn cereal drilling date	After mid October	Mid September-mid October	Before mid September	
5	Other cultural control methods (see other side)	Many	Some	None	
6	Weed infestation	Low	Medium	High	
				Sub-total (A) =	
	Chemical				
7	Grassweed herbicides used	Less than 1 per year	1-2 per year	3 or more per year	
8	'Fops' and 'dims' (see other side)	Used less than 1 in every 3 years	Used 1 to 2 times in every 3 years	Used every year	
9	Grassweed sulfonylureas (SUs)	Used less than 1 in every 3 years	Used 1 to 2 times in every 3 years	Used every year	
10	Other modes of action effective against grass weeds comprise	More than 50% of your herbicide programme	About 50% of your herbicide programme	Less than 50% of your herbicide programme	
11	General herbicide efficacy	Good	Mediocre/variable	Poor	
12	Resistance in locality	None	Some	Common in similar cropping systems	
				Sub-total (B) =	
				Grand Total (A+B) =	

Max grand total score = 12 x 5 = 60; Minimum score = 12 x 1 = 12
 Interpretation of herbicide resistance risk score: 12-24 = Low; 25-48 = Medium; 49-60 = High

- Aim to reduce the risk of herbicide resistance imposed by *both* your cultural system *and* your current herbicide strategy
- Consult the Weed Resistance Action Group's Resistance Guidelines

Weed Resistance Action Group's Guidelines

Copies are available from: HGCA, Caledonian House, 223 Pentonville Road, London N1 9HY Tel: 020 7520 3920 E mail: publications@hgca.com
 An online version (pdf) is available on the Weed Resistance Action Group's website: <http://www.pesticides.gov.uk/rags.asp?id=714>
 This site also has a pdf version of this risk audit document.



Managing and preventing herbicide resistance in weeds
 Weed Resistance Action Group's (WRAG) Guidelines