Black-grass control in sugar beet – is there a problem?

United Phosphorus Ltd (UPL) technical support manager UK & Ireland, **Pamela Chambers**, provides an insight into black-grass control in sugar beet.

In an extreme situation in 2014, a grower resorted to spraying off part of his sugar beet crop due to the high levels of black-grass present.

Historically spring cropping has always been seen as a key factor in keeping fields clean of weeds such as black-grass, but in recent years the level of black-grass observed in the sugar beet crop has raised concerns. When asked at the BBRO 2014 winter conference if black-grass was an issue in sugar beet, nearly all of the audience responded with a waving of their hands. There is concern as the spend on herbicides to attempt control of black-grass in sugar beet can be adding over £100/ha, and in conjunction with reduced levels of control and a lower price for the end crop, black-grass could potentially be more threatening to the future of sugar beet growing for some growers than pests and diseases.

The main emergence period for black-grass occurs in the autumn, from September to November, and in cereals populations of over 500 heads/m^2 are not uncommon. In comparison black-grass infestations in sugar beet appear relatively low, with plant numbers/m^2 often in single figures, although some are considerably higher.

Current advice

Key points to consider for the control of black-grass in sugar beet are:-

- Use ethofumesate pre-emergence as a straight or in a formulated product such as ethofumesate + metamitron.
- The rate of ethofumesate that is applied pre-emergence should be at least 400g ai/ha, remember to check labels for maximum individual dose of product.
- Include metamitron in the pre-emergence mix as this will have some activity on black-grass and may help with resistance management.
- Do not exceed 1kg ethofumesate per hectare in any three year period.
- Allow for the use of ethofumesate post-emergence to help with broad-leaved weed control.
- Apply graminicides eg clethodim, tepraloxydim or cycloxydim early in the herbicide programme either as the first or second post-emergent spray before the black-grass starts to tiller and when it is actively growing.
- Consider using higher water volumes and water conditioners with graminicides.
- UPL trials suggest that graminicides should not be mixed with other herbicide products.
- Triflusulfuron-methyl should not be relied upon for black-grass control, but in some cases it may have a useful effect depending on the sensitivity of the black-grass.
- Trials using tri-allate have not given conclusive results but it should not be dismissed as an option for pre-emergence use.
- Example products for actives mentioned above are shown in Table 1.

The future?

The loss of plant protection products available for use in sugar beet, although not as serious as in some crops, is also of concern; an example is the active tepraloxydim which is being withdrawn in the UK with the following expiry dates:

Expiry date for sale and supply: 30 November 2015.

Expiry date for disposal, storage and use: 30 November 2016.

Independent research to ascertain the impact that black-grass will have on the future of growing sugar beet crops on some farms, and information on the optimum use of herbicides available in combination with cultural control, is required to help growers and agronomists make informed decisions.

**In 2013 and 2014 UPL Europe carried out a number of trials looking at herbicide programmes for black-grass control in sugar beet. A summary of this work can be found in the booklet 'Black-grass Control in Sugar Beet' available electronically from www.uplsugarbeet.co.uk or as a hard copy by emailing: info.uk@uniphos.com.* ■

Table 1. Herbicides approved for use in sugar beet that have activity on black-grass

Group	Mode of action	Chemical family	Active	Product
A	Inhibition of acetyl CoA carboxylase (ACCase)	cyclohexanediones (dims)1	e.g. cycloxydim tepraloxydim clethodim	Laser Aramo Centurion Max
B	Inhibition of acetolactate synthase (ALS)	Sulfonylureas	e.g. triflusulfuron-methyl	As in Debut and Safari WSB
C1	Inhibition of photosynthesis at photosystem II	triazinones	metamitron2	Bettix Flo Goltix Flowable
N	Inhibition of lipid synthesis	thiocarbamates	triallate	Avadex
		benzofurans	ethofumesate2	Ethosat 500 Ethofol 500SC

1 The level of activity from 'dims' will vary depending on resistance status of the black-grass.
2 Oblix MT, Volcano and Torero contain ethofumesate + metamitron and can be used pre-emergence in sugar beet.