

More thoughtful weed control

“We still have essentially the same set of active ingredients we’ve had for decades.”

Roots Sugar beet weed control

This spring the desmedipham co-formulations that covered a lot of the bases when it came to making weed control recommendations are no longer available, so it’s back to basics. *CPM* looks at the take on the situation from industry and in the field.

By Lucy de la Pasture

There’s a lot of talk from the manufacturing side of the industry about the loss of the contact herbicide desmedipham, which is now beyond its use-up period after its withdrawal was announced in 2019.

Dr Bill Lankford, herbicides technical specialist at Adama, believes 2021 could be the year when there’s a resurgence in the use of pre-emergence herbicides such as Goltix (metamitron) and Goltix Titan (metamitron+ quinmerac).

“With desmedipham no longer available, sugar beet growers aren’t entirely able to depend on post-emergence treatments alone to achieve the necessary level of weed control,” he suggests.

“Herbicide programmes will therefore

need a little more thought this year. Unfortunately, the choice of pre-em herbicides is currently somewhat limited as a result of the revocation of chloridazon and the removal of pre-em usage from the lenacil label.

Filling the gap

“Thankfully, Goltix and Goltix Titan are more than capable of filling the gap, with the inclusion of quinmerac in the latter providing excellent protection against several of the more difficult to control weeds such as cleavers, orache and bindweed.”

Because modern sugar beet varieties are so quick to germinate, pre-em herbicides should ideally be applied within 24-48 hours of drilling and certainly within an absolute maximum of five days post-drilling, he adds.

Bill recognises there might be some reticence in terms of adding a pre-em to spring herbicide programmes — due to the additional input cost, extra workload and the need for adequate soil moisture to make pre-em work effectively — but he believes that the pros often outweigh the cons.

“Crucially, the inclusion of a pre-em treatment as part of a wider weed control programme can significantly improve final crop yields,” he explains.

He suggests considering a pre-em

treatment to provide flexibility to post-em applications and on land with a high weed burden (either in terms of difficult to control species or sheer population of weeds).

Bayer launched Betanal Tandem (phenmedipham+ ethofumesate) last month, though to many agronomists it’s a product that’s already extremely well-known having been originally launched in 1986 and used for a good number of years before being superseded by several co-forms which included desmedipham.

“Betanal Tandem offers greater ease of use over straights and is approved for use with Dow Shield (clopyralid) and Goltix, which will help to extend its flexibility in tackling volunteer potatoes and mayweed,” ▶



Bill Lankford reckons the use of pre-emergence herbicides may see a resurgence this season.



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Bayer is reintroducing old stalwart Betanal Tandem to take the place of its coforms which contained desmedipham.

► says Lizzie Carr-Archer, Bayer campaign manager for root crops.

“Trials demonstrate that Betanal Tandem gives better control of a range of weeds than a comparable mix of straights and is also safer to the crop. It has outperformed other two-way formulations in trials, most notably on fat-hen, black-bindweed, small nettle and annual mercury.”

Bayer recommends the addition of an adjuvant oil such as Mero, a methylated rapeseed oil, and a first application timed for when the majority of the crop plants

have reached fully expanded cotyledon stage.

“The need to control flowering weeds such as field pansy should not be overlooked. We expect most growers to deploy Betanal Tandem across two or three applications and, in some cases, with a residual, so this should give growers good opportunity to comply with the conditions of the emergency authorisation for Cruiser, if it comes into effect,” she says.

Bolster control

Where mayweed is present, Bayer advocates the addition of Goltix in a mix with Betanal Tandem plus oil. “This will also bolster control of other weed species, such as runch, cleavers, hemp-nettle, annual meadowgrass, pale persicaria, redshank and ivy-leaved speedwell.”

The view from the field doesn't necessarily reflect the same concerns about weed control without desmedipham co-forms, which have historically been used more by service distribution agronomists, says AICC member Andrew Wells of Arable Alliance.

“There may be a lot of wringing hands in anguish at the loss of products which provided broad-spectrum weed control



Sugar beet weed control traditionally relies on phenmedipham for contact activity in tank-mix with low doses of residuals herbicides.

and good crop safety and life will get more complicated — it means thinking more about tank-mixing and the ratios of the different active ingredients required.

“Many agronomists in the independent sector have always used straights. Mike ►

More contact for fen soils

The loss of desmedipham from the sugar beet herbicide armoury has meant some growers and agronomists are reconsidering their control options. One of these is Lincolnshire farm manager, Terence Riley, who says keeping on top of weeds is a prerequisite to producing a profitable sugar beet crop.

The average yield across his farm is a respectable 80t/ha on soils ranging from heavy loams to black peat. As a result of the range in soil types, weeds are broad spectrum and high in numbers. A reducing armoury of products only exacerbates an already challenging situation, he believes.

Traditionally he would use the FAR approach to help tackle the plethora of weed species, particularly on the black organic soils where a protracted germination period makes some species particularly difficult to control.

“I'm not convinced residuals on our black organic soils don't get locked up and if it's dry too, then weed control can be seriously compromised. In the past we would always buy our sugar beet herbicides with all the actives necessary to control weeds in one can.

“It was easy and didn't take much thinking about. Because we have lost several actives — the most recent being desmedipham, a

component in Betanal MaxxPro (ethofumesate+ phenmedipham+ desmedipham+ lenacil) — planning herbicide strategies takes more thinking about,” he says.

“Yield is king with sugar beet. We start lifting in Sept on the heavy land at JEG Farms, near Spilsby, when average yields are about 55t/ha. It's a compromise between losing some yield and being able to get back on the land in the autumn in good time to drill first wheat, before the wet weather stops land work. Black fen soils are the last to be lifted and yields on these can reach up to 105t/ha.”

The virus yellows situation last year had a big impact and reduced yields on one field to 22t/ha. “Clearly yield reductions at that level are not sustainable and so everything that can be done to protect yield must be done.”

The revocation of desmedipham has given Terence an opportunity to reassess and restructure the farm's approach to controlling weeds. This has seen a move away from his traditional system to a different approach using only two applications, based on Debut.

Historically, the herbicide programme was based on Betanal MaxxPro plus Goltix tank-mix. This provided the depth of actives to tackle most weeds, he says.



Terence Riley is adapting his approach to weed control on his black fen soils, which can lock up residual herbicides, to include Debut for more contact activity in his programme.

“This year we will apply Debut slightly later than before — just after cotyledon stage ideally — to ensure more weeds have germinated and that there's a bigger weed target area,” he says.

“Relying on contact material loses some flexibility, which makes timing more critical. In the past we used residual actives to sensitise and weaken weeds for the contact material to then kill them. But contacts used correctly can do a perfect job of taking out weed competition.”

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► May was inspirational when he was at Brooms Barn and gave us the confidence to put together tank-mixes that can be tweaked for a wide range of different conditions.”

The reality of the herbicide situation in sugar beet, as Andrew sees it, is that actually very little has changed. “We still have essentially the same set of active ingredients we’ve had for decades. Desmedipham had some quirky strengths on some weed species but didn’t really add much for the weeds in my Nottinghamshire area,” he comments.

“Sugar beet is a crop that’s

under pressure with decreasing profit margins so we have to do all we can as agronomists to keep input costs down while optimising yields to help growers generate more profit from the crop.”

Building blocks

As well as the same building blocks for herbicide programmes, the principles behind using low doses of herbicides for weed control in sugar beet also remain unchanged — with phenmedipham being the major component to provide contact activity and then a residual component, made up of actives

appropriate for the weed species present in field, being built up through the programme.

“I usually add a low dose of ethofumesate to the first herbicide application as it provides a little extra contact activity in addition to phenmedipham and metamitron is often my residual of choice. The second application is usually a similar mix, with lenacil where brassica weeds are present. I only tend to reach for Debut (triflusaluron-methyl) if the weeds present are bigger. Essentially it’s a FAR (phenmedipham — activator — residual) system but with doses adjusted for a 10-14 day interval rather than every 5 days as in true FAR style.”

Desmedipham also brought better contact activity than phenmedipham under cooler or drier conditions but Andrew has found that judicious use of an adjuvant oil aids penetration of the herbicide into the weed when that bit of extra activity is required, particularly when it’s dry.

“The biggest challenge can be fitting a graminicide into the programme, particularly when the timing is dictated by the



Andrew Wells says that by using straights it can help keep input costs down while optimising yields to help growers generate better profit from the crop.



Grassweed control can sometimes compromise broadleaf weed control timings but often fits in between the second and third post-em applications.

need to remove a barley cover crop before it gets competitive with the sugar beet,” he says.

“In practice, Falcon (propaquizafop) is tank mixable whereas Centurion Max (clethodim) has to go on alone and you need to allow a spray interval before and after application, which can compromise broadleaf weed control.” ■

Odds against for Cruiser derogation

According to BBRO, the wintry cold snap in Feb had a significant impact on overwintering aphid populations, both reducing their numbers as well as the date of their migration into the 2021 crop. It’s also expected that virus infection in 2021 will be significantly lower compared to 2020 as a result, proving that freezing weather is one of the best insecticides.

The trigger for an emergency authorisation for Cruiser seed treatment hinges on the outcome of the Rothamsted Research virus model, which predicts the proportion of the crop which will be infected by virus yellows at the end of Aug. The decision on whether the 9% threshold has been reached will be made on 01 March but the BBRO prediction is that there’s an 84% chance that the derogation won’t come into effect this season.

Historically, temperatures in Jan and Feb have been shown to be the most closely related to aphid numbers and virus levels. To date (mid-Feb), a current average temperature of <math><3^{\circ}\text{C}</math> has been recorded during Jan and

Feb, according to BBRO.

“This is one of lowest average temperatures on record for many years and below the average recorded in 2018 (‘Beast from the East’ year). 2018 is a good benchmark comparison for what we can expect in 2021. The virus yellows forecast (without neonic seed treatment) was for 6.5-9.8% of the crop to be affected, depending on drilling date and factory area. As 2021 is colder, there will likely be a greater suppression of aphid numbers than in 2018.”

Reacting to the news, Andrew Wells says he’s fairly relaxed about it. “Some of my sugar beet growers were going to go with 50% neonic-treated seed and 50% without, because of either following crop reasons or because the neonic treated seed is going to arrive so late on farm.

“We have to trust the science and the Rothamsted model has been well tested and very accurate over a good number of years. If we don’t need the neonic then that’s great. If we can get beet drilled during the first half of March on the



The latest from BBRO is that the Rothamsted model is looking unlikely to trigger the derogations for use of a neonic dressing on beet seed this season.

lighter land then we may or may not need an insecticide, depending on how much later aphid migration in to crops happens.”

The bigger issue will be to minimise the threat of virus carry-over from local sources, so good hygiene will be paramount, he says.