

# techtalk

## Tackling umbelliferous weeds

Pressure on an ever-dwindling armoury of broadleaf weed herbicides, essential for keeping a plethora of common and unfamiliar species in check, is putting increasing pressure on growers and agronomists to deliver cost-effective control solutions. FMC manufactures many of the leading SU products with a proven track record, enabling the industry to keep one step ahead of this growing problem.



# Robbers with umbrellas

There's a family of weeds on the increase across the country and they're very competitive if left unchecked. *CPM* finds out how to prevent the umbellifers from stealing your yield.

By Lucy de la Pasture

**More often than not it's grassweeds that dictate herbicide programmes and any surviving broadleaf weeds are mopped up in the spring. That approach has led to a spectrum of broadleaf weeds that has changed in response to herbicide use and the development of herbicide resistance in some broadleaf species.**

The result is a swing in the spring weed population towards certain weed species that are able to capitalise on holes in autumn herbicide programmes and exploit the gap left by the successful control of other weed species. Most notably on the increase are weeds from the

*Apiaceae* family, better known as the *Umbelliferae*.

FMC's commercial technical manager, Jeff Fieldsend, shares his knowledge on the best tactics to get on top of these very competitive weeds.

### What are umbelliferous weeds?

Important arable weeds within this family are bur chervil (*Anthriscus caucalis*), wild carrot (*Daucus carota*), shepherd's needle (*Scandix pecten-veneris*), spreading hedge parsley (*Torilis arvensis*), cow parsley or wild chervil (*Anthriscus sylvestris*), hemlock (*Conium maculatum*) and fool's

parsley (*Aethusa cynapium*).

Identification of the different umbelliferous weed species can



Jeff Fieldsend says a predominance of winter cereals and oilseed rape has caused umbelliferous weeds to increase.

“Early control is the best approach.”



be tricky, with several looking very similar at the cotyledon stage. Bur chervil, shepherd's needle and cow parsley are particularly hard to tell apart at early growth stages.

But it's important to know exactly which species you're dealing with because some are more problematic than others. Bur chervil is becoming a particular headache in some regions and is extremely competitive, as well as being difficult to control.

### Why are they a problem?

In many areas of the UK, it's blackgrass that dictates autumn weed control programmes, with broadleaf weeds assuming a

lesser importance. Strategies for blackgrass hinge around delayed autumn drilling and building a stack of residuals, largely based around flufenacet since the demise of the substituted-ureas (such as IPU and chlorotoluron).

As a result, a spring tidy up of broadleaf weeds that have survived the stack, or weren't

targeted in the first place, has become the norm. Over the past decade umbellifers have increased in arable rotations in response to this change in herbicide practices and tillage regimes.

Competitive umbelliferous weeds, such as bur chervil, have a prolonged period of germination (autumn to spring),

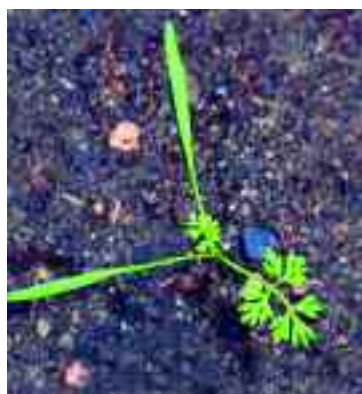
which means there's more than one flush of weeds, and they grow away very quickly in the spring — two factors which make timing critical for good control. Each weed plant has the ability to produce 500-600 seeds, so in situations where they're poorly controlled, problems can escalate very quickly.

It's a weed that's extremely competitive with the crop for resources such as water, nutrients and light because of its growth habit, which can be up to 1m tall.

## Where are they prevalent?

Traditionally these umbelliferous weeds have been found on sandy soils but are now being widely reported on heavier soil types.

Bur chervil began as a regional problem in the eastern counties but it's becoming more widespread, spreading further north and west. There's a link with rotation and the prevalence of winter cereals and winter oilseed rape has favoured a build up of umbelliferous seeds in the seed bank, although the balance is ▶



*Umbelliferous weeds can look very similar at early growth stages – wild carrot (left) and bur chervil (right).*

## How 'difficult' weed species have changed in time

Decade	Troublesome weed species
1960s	Charlock
1970s	Cleavers
1980s	Pansy
1990s	Cranesbill
2000s	Groundsel, hedge mustard
2010s	Umbellifers

Source: FMC

## Broadleaf weeds set agronomist challenge this spring

Changes in rotations and cropping strategies, coupled with product loss and herbicide resistance, may be contributing to agronomists facing increasing pressure to prevent yield loss though weed competition.

That's certainly the experience for Agrii agronomist David Clark, based in Yorks. He advises over a range of soil types, from the heavier clays of the Holderness region to the loamier soils and lighter sands of the Yorks Wolds, in predominantly arable rotations with potatoes.

With 40 years of experience behind him, David's very aware that weed profiles have changed significantly over the years and with many effective products no longer registered, it means his toolbox has had to adapt.

SU chemistry has traditionally played a major role in post-emergence contact weed control, in conjunction with a broad-spectrum residual herbicide programme. Where gaps in the latter exist, he's finding it harder to achieve the control he requires, especially late in the season where dry spring conditions followed by late rain can often alter the look of a previously clean crop.

He highlights bur chervil as a particular challenge, which although historically sporadic, is now appearing to be more widespread and turning up in fields with no previous record of the weed.

"It's really bizarre," he says. "20 years ago bur chervil would never have appeared, but this is one weed which is unpredictable and very difficult to manage. It's not only erratic, but very invasive."

Having used a pendimethalin-based residual product in the autumn for grassweeds and broad-spectrum weed control, his winter cereal crops can appear very clean apart from patches of bur chervil. These can smother crops and grow very quickly throughout the spring if left unchecked.

"Whereas cranesbill and cleavers are usually quite predictable in their distribution, the bur chervil is now probably our number one problem weed. SU's are still effective but timing of application is crucial and without any compromise on dose rate.

"I also prefer to use the SX formulated SU products, such as Ally Max SX or Harmony M SX which although they carry a premium, mean that you have

the best possible chance of control without any worries of contamination in the spray tank."

Fool's parsley can also be an issue, he says, often requiring applications as late as flag leaf to deal with late weed emergence, especially in a dry spring. Another headache has appeared in recent years with advent of Clearfield OSR, which has become more popular year by year.

"The Clearfield volunteers have now got to significant levels and conventional SU chemistry has little or no effect," he says. "With the acreage doubling every year in response to the ease it offers in overcoming brassica weed issues in OSR, it's a problem that certainly isn't going to go away."

Other volunteer weeds that cause problems in David's rotations include volunteer potatoes and borage — the latter grown historically for the pharmaceutical industry, but still a perennial problem.

"Once you've grown borage you've always got it," he admits. "It's controllable with the SU products, but again it can appear quite late and needs extra treatment and that adds extra cost. Volunteer potatoes have to



*David Clark says timing of application is crucial to get good bur chervil control, and without any compromise on dose rate.*

be factored in, although they are usually well controlled where we include fluroxypyr in with the mix."

David also faces challenges on his sandier soils, where *amsinkia* and *bugloss* are species which can be hugely competitive in situations where the crop might be struggling due to dry conditions, though they're controllable using SU chemistry.

"We really do have specific weed threats right across our whole area. The spectrum is continually evolving and, with little or no new products on the market, stewardship of actives coupled with accurate and targeted advice is of paramount importance. It can be difficult, but it's achievable with products that have integrity."



## Tackling umbelliferous weeds: top tips

- **Identify the weed correctly** – bur chervil is more difficult to control and many umbelliferous weeds look similar at early growth stages.
- **Target umbelliferous weeds early** – aim for mid-March to early April.
- **Use a mixture of chemical groups or fluroxypyr** – best control is achieved using a SU herbicide containing a high level of thifensulfuron plus a phenoxy herbicide.



*Prolific seed production means umbelliferous weeds can build up quickly if not well controlled.*

▶ being slightly redressed since the spring cropping area has increased in response to the blackgrass epidemic.

There's also a link between the increase in the umbellifers and a change in tillage practices, with the move away from inversion tillage probably favouring the survival of their seeds within the seed bank.

## What approach works best?

Since the withdrawal of Lexus SX (flupyr-sulfuron) in Dec 2017, the only option for the control of the umbelliferous weeds is in the spring. Although there can be some activity from autumn-applied residuals, these run out of steam and weeds start to grow away.

It's important to target these umbelliferous weeds when they're small for complete control because later applications to larger weeds will only result in some top-growth burn down.

For bur chervil, in particular, early control is the best

approach. Target the weed in mid-March to April, when it has 3-4 true leaves and hasn't yet begun to extend away rapidly. The best performance is achieved using a sulfonyl urea (SU) product containing a high-loading of thifensulfuron — such as Harmony M SX (metsulfuron-methyl+ thifensulfuron-methyl) — with the addition of a phenoxy herbicide, such as CMPP or dicamba.

## What's best practice?

To get the best performance from any SU herbicide it's important that the weed is actively growing at the time of application and for most weeds this occurs when the temperature reaches 5-6°C. But when there's a large diurnal range, which can often happen in early spring, then conditions aren't ideal as the performance of SU's can be reduced.

In FMC trials, further improvements in performance have been seen where Fortune (75% methylated seed oil) is used with the SU, though it's important to be mindful of potential phytotoxic effects if using in a multiple tank-mix.

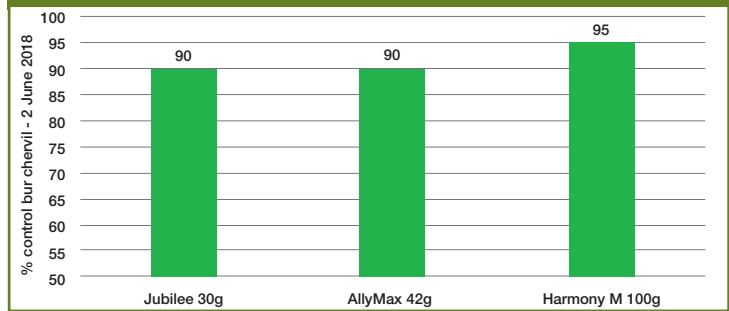
Phenoxy herbicides aid control of the umbellifers but watch out for their latest times of application to the crop.

Achieving a good level of control is all down to the spray coverage so a minimum water volume of 200 l/ha is recommended, with higher volumes advisable if the weed population is particularly dense. Using twin caps or forward and backward facing nozzles can also help achieve better spray coverage.

## What about sequences and mixtures?

SU herbicides should be added to the tank first when using in a tank-mix. The advice is to quarter fill the spray tank with clean water, start the agitation and add the required quantity of herbicide directly to the tank without prior creaming. Agitation should be continued while topping up the

## Relative activity of SUs on bur chervil



Jubilee (metsulfuron-methyl); AllyMAX (metsulfuron-methyl+ tribenuron-methyl); Harmony M (metsulfuron-methyl+ thifensulfuron-methyl) applied 12 April 2018 against small weeds in a competitive crop.

*Source: FMC trial at Avebury, Wilts in 2018.*

tank and during spraying.

Generally, only two applications of SU herbicides are permitted and there are also sequencing restrictions, dependent on individual product labels and tank-mixes. Sequences can be checked for legality using the FMC ALS-sequence app, which contains the most up-to-date information from CRD.

## What wash-out procedure is best?

Non-cereal crops, and sugar beet in particular, are very sensitive to SU herbicides. So it's important to follow the approved wash out procedure using All Clear Extra to avoid any possibility of crop damage caused by SU residues left in the sprayer.

All FMC SU cereal herbicides have the SX formulation which means they have a faster, safer wash-out procedure and pose less risk to the following crop. Always check the product label for the

correct washout procedure, but in general all equipment should be cleaned immediately after use by completely rinsing all interior tank surfaces (including lid) with water, taking care to remove any visible deposits. Then flush the pump, filters and boom after removing in-line strainers, nozzle tips and screens (clean separately). Finally drain the tank and repeat the procedure. ■



*Always use All-Clear Extra to clean the spray tank and lines after applying an SU.*

## Sponsor's message

For more than a century, FMC Corporation has served the global agricultural, industrial and consumer markets with quality products and innovative solutions.

In the UK, FMC is based in Deeside and is a leading supplier of both speciality, crop protection and foliar nutrition products, including a wide range of advanced micronutrients, soluble fertilisers and adjuvants to UK agriculture.

FMC recently acquired a significant proportion of DuPont's Crop Protection business including the well-known cereal sulfonyl-urea (SU) herbicides, sugar beet herbicides and DuPont's ground-breaking insecticide portfolio. In addition, FMC have also acquired DuPont's crop protection research and development capability, including an extensive pipeline of new and exciting products.



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