

Companion conservation

Weed control

Is it possible to successfully companion crop oilseed rape to help control cabbage stem flea beetle and claim SFI payments, while keeping weeds firmly under control? CPM investigates.

By Janine Adamson

Planting a companion crop alongside oilseed rape is far from breaking news and is something growers have been exploring, often in a bid to overcome cabbage stem flea beetle pressure. But equally, the past season has caused mischief in terms of weed control. Can both objectives be achieved simultaneously?

Frontier's Dr Paul Fogg says companion cropping is of clear interest to growers especially since it can be financially rewarded through the Sustainable Farming Incentive (SFI), however, there are implications for wider crop management.

"Although it doesn't have to be present for the full duration of the OSR, the companion crop has to be around long enough to be eligible for the SFI payment of £55/ha, in that it achieves the action's aim and its intended purpose.

"In this case, that's supporting an IPM approach by acting as a mask which disguises the OSR from CSFB while

hopefully attracting beneficial predators. Unfortunately, depending on the species of the companion crop, some herbicides will prematurely take those plants out," he explains.

According to Paul, there are 'three OSR crops' across the country — growers who were able to drill early due to optimum soil moisture and therefore may have forward crops, those who planted in late August and are struggling with establishment, and then the late drilled crops which are seemingly okay but slow to grow. At the time of publishing, reports from the field suggest all are being hit by CSFB to some degree.

Prolonged emergence

Then there are the weeds, both grass and broadleaf. The wet summer not only caused havoc for harvest, but also prolonged weed emergence following what's already proved to be a challenging year.

ADAS's Dr Sarah Cook says although it's a case of the 'usual weed suspects', other problems could arise as a direct result of trying to maintain green cover. "Many varied species are being used as cover and companion crops and these may have been imported with additional weed species.

"It's always important to keep an eye out for any survivors so potential problems can be nipped in the bud. Umbellifers (for example hemlock, wild carrot and cow parsley) remain an issue but greater knowledge has improved their control. Look out for them and target early before they grow too big," she stresses.

But bearing in mind Paul's advice, which OSR herbicides can be applied, if any, that

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support the retention of a companion crop for as long as possible until it reaches its natural conclusion? ▶



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According to Dr Bill Lankford, Falcon presents good selectivity for linseed and buckwheat which are commonly used as companion crops.

▶ The first watch-out is residual herbicides and the subsequent impact of whether they're used or not. This is because difficult weeds such as poppy, chickweed and groundsel are usually kept under control through residuals which prevent them from growing to a significant size.

But unless a companion crop is already established and robust prior to planting the OSR, products such as metazachlor can prove too much, meaning growers could be reticent to use them therefore unintentionally allowing weeds to proliferate.

Equally, Adama's Dr Bill Lankford says it's often later season herbicides which hit companion crops the hardest, however, it

does depend on the species. "Clovers (for example berseem) are an interesting group because if they establish well, they're incredibly resilient to being knocked back. Conversely, all herbicides seem to affect them if they aren't up and away.

"Falcon (proprazinefop) offers some selectivity on clover when targeting volunteer cereals, ryegrass and brome, but there is a risk of damage. It's not solid on everything, but presents good selectivity for linseed and buckwheat which are commonly used as companion crops," he says.

With wet weather conditions continuing into autumn, Bill says there's a high risk of rapidly emerging cereal volunteers, which in OSR, can prove deadly.

Volunteer impact

"These are a priority and have to be taken out as soon as possible, even when there's a companion crop in place. Volunteers have a significant impact on OSR yield, particularly in less vigorous crops. Falcon can be applied before flower buds are visible and 90 days before harvest."

Another option for weed control is Fox (bifenox) which has an EAMU for the control of geranium species in OSR, however has recently been granted a full label in readiness for 2024/25. For this season, product with the existing MAPP number (11981) and associated EAMU (20142318) must be used.

According to Bill, Fox has a good profile and offers selectivity on N-fixing companion crops such as clovers, vetch and lupin.



It's important to consider the wider benefits because companion plants aren't just in the ground to deflect CSFB, says Robert Nightingale.

"Trials in Europe have shown great promise so it's encouraging to have this product which tackles the likes of cranesbill. Being pragmatic, I imagine there will be a slight knock-back on the companion, but it shouldn't be significant," he says.

Corteva's Clare Stapley recommends sticking to a post-emergence approach with registered products from the company including Belkar (halauxifen-methyl+ picloram), Astrokerb (propyzamide+ aminopyralid) and Kerb Flo 500 (propyzamide). Korvetto (clopyralid+ halauxifen-methyl) can also be used from ▶

Impact of herbicides on companion crops (Corteva)

Companion crop	Belkar - halauxifen-methyl+ picloram	Astrokerb - propyzamide+ aminopyralid	Korvetto - clopyralid+ halauxifen-methyl	
Buckwheat	XX	X(X)	X(X)	Doesn't survive winter frost
Vetches	XX(X)	XX(X)	XX(X)	Frost tolerant
White mustard	X(X)	-	-	Mainly used in Clearfield varieties
Phacelia	XX	XX	X(X)	Doesn't survive winter frost
Beans	XXX	XXX	XXX	
Berseem/crimson clovers	XXX	XXX	XXX	Many don't survive winter frost
Oil radish	-	-	-	Mainly used in Clearfield varieties
Fenugreek	XXX	XXX	XXX	
Lentils	XXX	XXX	XXX	

XXX – 85-100% kill of the companion crop
 XX – 70-85% control
 X – less than 70% control



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Similar to a cover crop, companion crops improve overall soil health and function.

► 1 March onwards.

But again, it all depends on which species is being used as the companion crop, with guidance provided on the impact of the herbicides to assist decision making (see table).

For growers struggling with weed control due to the continued wet conditions and protracted germination, and in some cases ALS-resistance is present too, the time will come to weigh up the pros and cons of

Wider weed watch-outs

Due to robust herbicide stacks aimed at tackling blackgrass and Italian ryegrass, it seems the diversity of broadleaf weeds is declining, says ADAS' Dr Sarah Cook. "Broadleaf weeds have always been controlled well by grassweed herbicides, many of which have a wide spectrum of control, umbellifers being the notable exception."

While cultural methods such as delayed drilling and spring cropping may prove successful for grassweeds, Sarah says there's little or no chance of success with broadleaf weeds. However, of the species, a full year fallow gives a moderate chance of depleting the seedbank of cleavers.

"This weed has a shorter persistence than other weeds (2-3 years) and offers a peak germination period in October and November. Cultivations can stimulate emergence and delaying drilling will give time for the control of the plants," she says.

At the other end of the spectrum are poppy and fat hen



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— species with very high levels of seed production and long persistency. In fact, poppy seed can survive for more than 50 years in the seedbank.

"Repeated cultivations have only been shown to deplete the seedbank of these species by, on average, 31-32% annually," comments Sarah.

keeping the companion crop at all.

Robert Nightingale, national technical sustainability specialist at Frontier, says it's important to consider the wider benefits because the companion plants aren't just in the ground to deflect CSFB. "Similar to a cover crop, companion crops improve overall soil health and function, often through rooting and a capacity to break up compaction as well as providing a greater diversity in the field.

"They can also improve crop nutrition, for example, annual legumes begin to fix nitrogen within around 8-10 weeks. These should be destroyed in the spring to allow the nitrogen to be released to the OSR later in the season."

He says from a structural perspective, a companion crop can protect against pigeon damage, the idea being to create a canopy above the OSR. "This can be successful with very strong beans left as stalks but other species would have to be left until pigeons aren't a problem in the spring."

SAM2 eligibility

For those wondering whether a companion crop can count as a multi-species winter cover crop and therefore be eligible for SAM2 at £129/ha, it's perhaps unlikely. Firstly the companion crop has to protect the soil until February, therefore not be a species susceptible to frost and secondly SAM2 has a requirement for no fertiliser to have been applied.

Robert says some have tried using brassicas such as mustards which are difficult to control in OSR other than in Clearfield varieties. "Only the Clearfield herbicides will give good enough control of the brassicas to stop them being a problem in the OSR grain, even then it's still a risk.

"Brassicas are also very competitive for nutrients, particularly nitrogen, so these species should be controlled as early as possible, around the end of October," he explains.

Beyond the companion crop versus herbicide conundrum, Clare says a key consideration for weed control in OSR, whether companion cropping or not, is propyzamide stewardship. "The product should be applied in the right place, at the right time and at the right rate.

"Appropriate planning and ongoing management goes a long way towards mitigating the risk to water. Stewardship begins with field choice — before the seed is even sown consider where you'll be planting your OSR."

She explains that it's preferable to grow

the crop in a field which doesn't slope towards water, that is less susceptible to run-off, or is far away from any watercourses. Then, when putting in tramlines, ensure they don't create a direct route for water to leave a field.

"Use of buffer zones reduces the chance of run-off reaching a watercourse. The Voluntary Initiative recommends a six-metre buffer, and, if possible, wider buffers are advisable in particularly vulnerable areas such as at the bottom of a slope adjacent to a watercourse," explains Clare.

In addition, establishment technique, direction of working travel, soil type and topography are also important parameters. "Growers should avoid applications when heavy rain is forecast within 48 hours or when field drains are running," she concludes. ■



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