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Magic of movement

Slug control

As drills start to roll signalling the start of another cropping cycle, CPM looks at what slug control learnings can be taken from last season when the pest wreaked havoc during crop establishment.

By Rob Jones

The adage of never making farming decisions based on the previous year could go out of the window this autumn, at least when it comes to slugs, as agronomists predict a repeat of 2023's severe pressure.

Advice is to be particularly hot on monitoring and risk assessments, while using all tools available including varying degrees of soil cultivation and slug pellet applications, to safely establish combinable crops.

AHDB figures recently published in July hint at what a challenging year it's been for arable growers, with wheat

and oilseed rape areas down 9% and 21% respectively, and the winter barley area also dropping by 11%.

It all began with a wet July 2023, when many growers gambled on OSR due to soil moisture being a prerequisite for rapid germination and growth away from pest pressure.

However, as Association of Independent Crop Consultants (AICC) member and NIAB southern regional agronomist Syed Shah explains, the damp field conditions that followed in late July and early August caused other problems.

Slug-central

“On heavier ground, growers lost crops completely from slug damage and had to re-drill, particularly where they were direct drilled and there was a lot of trash; it was a complete disaster,” he says.

When growers moved on to cereal establishment, winter barley crops drilled from mid-September onwards grew away well, but as rainfall set in during October, winter wheat crops were subjected to a perfect storm of three factors.

For one, waterlogging was common on heavier and/or poorly drained soils. Then, where residual herbicides were applied – particularly stacks containing cinmethylin – crop establishment was reduced.

Compounding these issues were slugs and Syed believes they were more of a factor in the establishment problems experienced last year than some believe. “Once drilled, it takes a long time for a seed to rot or crop to die from waterlogging. You could see a lot of seed hollowing and then grazing by slugs, which led to a lot of patchy and thin wheat crops,” he explains.

In the West, fellow AICC member David



AICC member/NIAB's Syed Shah says for those still to establish OSR, trash management is key including baling straw to reduce the amount of residue drills have to contend with.

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GROWING TOGETHER

Slug control

► Lines advises across Herefordshire, Shropshire and into Powys, and says his earlier drilled cereals that established and grew away before the rain fared okay.

However, where seed was pushed into poor seedbeds, which soon became too wet to consolidate with Cambridge rolls, he adds crops really struggled to survive the slug pressure that built during the extended period of wet weather.

"From my weather records, across the 155 days between 1 September until mid-February, I've totted up 39 days with no rain and in a typical year that would be the other way around. It wasn't that we've had horrendously wet months, more that we've had continuously wet weather and soils never dried out," says David.

Some of his growers fought against slugs with more applications of pellets than they've used for many years, which underlines the pressure which built over the autumn, he continues.

Since then, with no frosts or extended periods of dry weather to make a dent in populations, a huge number of slugs have been evident in standing crops right up until senescence.

"I think the slug pressure last autumn wasn't as high as it's potentially going to be this autumn. They've been allowed to breed and walking through crops recently, you ended up covered in slugs which is unusual."

So, what does this mean for growers as harvest reaches a crescendo and thoughts turn to 2024/2025? Syed says for those still to establish OSR, trash management is key, and he's been strongly advising



According AICC member David Lines, slugs have been allowed to breed and when walking through crops recently, he's been covered in the pest which is unusual.



Seed hollowing and then grazing by slugs led to a lot of patchy and thin wheat crops last autumn.

growers to bale straw to reduce the amount of residue drills have to contend with.

He also advocates a cultivation of some kind to manage trash and help reduce slug populations ahead of OSR establishment, as the crop is drilled at relatively low seed rates and can be wiped out incredibly quickly by the pest.

"It'll be disastrous if you spend money on expensive hybrid seed and multiple slug pellet applications and still lose the crop," warns Syed.

Soil movement benefits

ProCam agronomist Gareth Williams is based in Pembrokeshire and covers West Wales, advising on crops including winter and spring cereals, OSR, maize, potatoes, and field vegetables. He says last year, where cultivations were used, his clients were generally able to keep on top of slugs with ferric phosphate pellets and anticipates more soil being moved this year in order to relieve pressure ahead of drilling.

With populations already evident, he believes an application of pellets immediately after OSR is drilled is essential, alongside ensuring there's a high number of baiting points on the soil surface. This can be achieved using a mini pellet product such as Menorex (ferric phosphate), which offers 67 baiting points/m² rather than 42/m² offered by its standard sized equivalent SluXX HP (ferric phosphate).

"That'll help reduce the impact of the first wave of slugs. After that, closely monitor what's happening with the pellets and crop. If damage continues, then repeat applications are required until plants are beyond the vulnerable stage.

"The quality of the pellet is also important, as they have to last, particularly as we're in a high rainfall area," adds Gareth.

Looking a little further ahead to cereal establishment, cultivation and other stubble management measures are again going to be a key tool in trying to alleviate pressure in known high slug risk situations, suggests David.

A lot of soils have suffered structural damage, with some soil types capping off after the many months of persistent rain; sprayer and harvest traffic wheelings may also be deep in places. He says these areas may require remedial work and parts of fields that laid wet for much of the season should be assessed with targeted subsoiling and mole draining to help with the movement of water through the profile.

For direct drillers who are aiming to avoid any significant soil movement, David points out that the bare minimum should be the use of a straw rake – perhaps multiple times – ahead of drilling, or a light discing to around 30mm.

Furthermore, evidence from NIAB suggests such shallow cultivation after OSR harvest is particularly beneficial for the disruption of the cabbage stem flea beetle lifecycle. And given wheat after OSR experiences the highest risk from slug damage, this will have the additional benefit of alleviating that pressure by physically damaging slugs and their eggs.

With a lot of hard ground from excessive rain, shallow cultivation and raking will also help disc drills to find some tillth and reduce the risk of leaving a slot for slugs to move along and

hollow out seed, comments David.

"It'll be important to get volunteers to chit in stubbles, too. I think we'll have a lot of shed seed in the barley after OSR. Those that kill their volunteers off quickly with either glyphosate or another cultivation will have less slug pressure. It's logical that if there's nothing for slugs to eat, it'll help starve them out," says David.

While moving soil is key to reducing slug pressure, good seedbed quality, correct drilling depth and re-consolidation are also important in restricting movement of the pest once crops are drilled.

Syed says at least 2.5-3cm of settled soil should be on top of cereal seed which will help to prevent residual herbicide damage and ease slug hollowing. "I'd advise higher seed rates in fields where you know slugs are going to be a problem and rolling at least once or even twice at different angles where conditions allow will help to slow movement," he adds.

Gareth stresses that early monitoring after harvest and before drilling will be as important as ever this year given the potential for extreme slug pressure – populations in stubbles and after primary cultivations should be assessed using traps.

He says the industry only has ferric phosphate and although effective, its activity isn't as fast as previously available active substances like metaldehyde, so identifying problems early and getting ahead with pellet applications is key.

"There was a tendency to press the panic button with metaldehyde because you know there'd be dead slugs

everywhere the next morning. We now have to be on the ball a bit more with timing and quality of pellet. I tend to keep Menorex for OSR and then use SluXX HP later on in cereals," explains Gareth.

Quality formulations

Last year, David says there were grumbles that pellets were disappearing too quickly, but he believes spending money on better quality pasta-based formulations like these should provide good results. "There has to be some common sense when applying any pellet – if you're going to get an inch of rain overnight, don't apply until after the event. The slugs aren't going to find them if they're covered in a layer of soil.

"The other thing that I'll raise, and it's a big bug bear of mine, is the insistence that applicators will spread any pellet out to wider distances. You can often walk out into a field and there are strips between tramlines where you can't find a pellet," he warns.

This is because slug pellets vary in their ballistic properties and applicators also have different capabilities in the distances they can spread to. As such, four years ago, Certis Belchim collaborated with SCS Spreader and Sprayer testing to evaluate different applicators with its range of products and subsequently developed the Calibration Wizard online tool.

The tool is designed to help slug pellet applicator operators to quickly and correctly set up their particular machines to ensure molluscicides are applied accurately. Users can enter the pellet product they intend to use along with applicator type, its



Being on the ball more with timing and quality of pellet is important following the loss of metaldehyde, says ProCam's Gareth Williams.

spread width and target application rate.

The Calibration Wizard then recommends disc speed, feed rotor settings and aperture settings, along with the expected baiting point density to take the guesswork out of slug pellet applications.

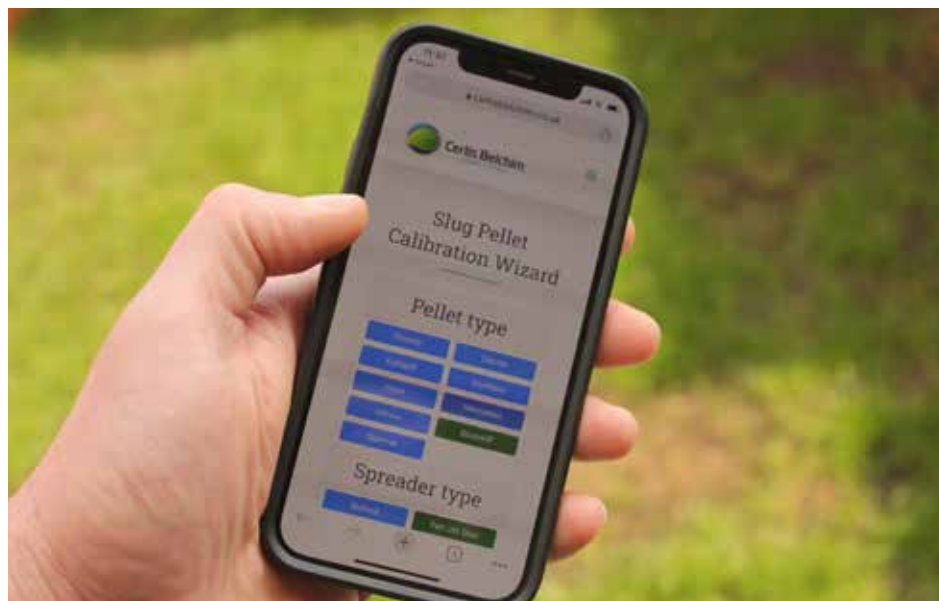
"Operators are able to see how far we back our products to spread using the given applicator, which is based on data we generated with SCS. This should avoid any striping you sometimes see from trying to spread pellets too far," says Certis Belchim's Nathan Whitehouse.

With the right setup, the company's standard pellet SluXX HP has good ballistic properties for wider spreading with the right applicator - a Stocks FanJet Duo mounted on a sprayer would be one example.

"As you may expect, a mini pellet like Menorex's spread width is slightly less. It just shows how important it is to understand the pellet's ballistics and applicator capabilities to reduce any issues with slug control, particularly in a potentially high-pressure autumn, and the Calibration Wizard helps with that."

David adds that operators should also be mindful of how the max rpm on a spinning disc applicator's motor can slow over time and see a diminished performance when considering spread width. "In any case, getting off the machine after a couple of passes to check spread pattern is important.

"Slug pellets aren't cheap now and they're there to protect the establishment of your crop so should be applied as carefully as any other product to ensure they work as expected," he concludes. ■



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