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Title of Entry: META MEASURES MUST GET BETTER

Name of Publication / Station / Website: CROP PRODUCTION MAGAZINE

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State briefly why you are submitting this particular piece and what impact has it made?:

I am submitting this article because it presented a timely warning over the future use of a widely applied pesticide which has come under increasing scrutiny in recent years. I believe it has contributed to a greater awareness among growers of the threat of further restrictions on metaldehyde applications and their potential impact on slug control.

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Meta measures must get better

Metaldehyde pellets must be used more carefully if further restrictions on their use are to be avoided, warn industry specialists. CPM relays their concerns and looks at the prospects for controlling slugs this autumn.

By Andrew Blake

'Kill slugs, not metaldehyde'. That's the message from the Metaldehyde Stewardship Group (MSG) which urges all users of metaldehyde-based slug-control products to stick to its Get Pelletwise campaign advice (www.getpelletwise.co.uk).

Until last autumn it seemed that the campaign had, at least in part, contributed to a downward trend in the number of times that metaldehyde had been detected in raw and treated water, says Water UK's policy and business adviser Dr Jim Marshall.

However, the slug control challenge posed by last autumn's sodden conditions resulted in the chemical being found in rivers, reservoirs and canals across large parts of England at levels well above the drinking water standard.

"Some catchments recorded the highest concentrations since intensive monitoring began," he says.

Legal limits

Metaldehyde can't effectively be removed by conventional water treatment processes and has been detected in some drinking water supplies above legal limits for pesticides, confirms the Environmental Agency's Jo Kennedy.

"The levels found don't pose a risk to human health, but they put the UK at risk of not meeting the requirements of the Water Framework (WFD) and Drinking Water Directives."

Metaldehyde is a particular problem, explains NFU plant health adviser Don Pendergast. "The current water treatment processes that are in general use can't remove the metaldehyde effectively, which results in non-compliances at the tap when it's present in water at the abstraction point."

While fully supporting the voluntary ▶

“It's not good enough to put the season down to being 'exceptional' and continue as usual.”

Autumn action advice

As last autumn proved, weather is the key when it comes to controlling slugs, says Dr David Glen of Styloma Research and Consulting. "Everything depends on the weather."

This year's hot dry July kept slugs in check and populations were lower than at the same time last year when the pests were exceptionally active and abundant because of wet weather, he explains.

"However, slugs are enormously resilient and numbers will increase quickly when wet weather returns.

"It's essential to anticipate problems, assess the risk, and as far as possible prepare fine, firm seedbeds. Then, where the risk justifies using slug pellets, apply them soon after drilling and rolling — before damage is seen."

Jo Kennedy urges growers to determine whether they're within a surface water catchment used for drinking water supply.

"Growers can find this out and identify whether metaldehyde is an issue within that catchment from the Environment Agency's "What's in your backyard" WYBY web page.

"There, by typing in their postcode, they can see if they're in a Drinking Water Protected Area or upstream Safeguard Zone — i.e. a catchment area where water is abstracted for public drinking water supply. By double clicking on the red area, they can see whether metaldehyde — or other pesticide — is a risk in their locality.

"In these metaldehyde-risk areas it's very important that growers' slug control strategies consider water protection and all the measures that can be taken to keep metaldehyde out of water. That's not to say that in other areas stewardship advice can be ignored — it's important for everyone to use pesticides responsibly so risks to water are minimised and deterioration is avoided."

Paul Fogg stresses that the MSG guidelines still apply in all areas of the UK, and integrated controls remain important for everyone.

"But by using WYBY it's possible to drill down and assess the individual farm level of risk, which is really important in taking the MSG's Get Pelletwise campaign to the next level, and making sure those in critical areas sit up and take note.

Trapping slugs helps assess the extent of potential control problems.



"The three most important action points from the guidelines are then:

- Ensure the minimum amount of active per ha is applied to avoid drainage and run-off losses
- Not to use metaldehyde when soils are at full water-holding capacity, or when heavy rain is forecast
- Know when to stop.

"Once the metaldehyde top limit is reached (max is 210g/ha of active between 1 Aug and 31 Dec) don't use metaldehyde but switch to an alternative if needed."

Many factors need to be considered when determining slug control strategies, says Andrew Crossley. "They include the weather, previous cropping, cultivation type, crop residues, buffer strips, watercourses, soil conditions, and when to stop using metaldehyde and switch to another product.

"Certain locations represent a greater risk because of soil type, slope and proximity to a watercourse, and there the use of alternatives may be appropriate as a standard measure on the main crop or on the headland.

"The WYBY tool is useful in planning and helps identify whether metaldehyde is a risk to watercourses in your area.

"Seedbed consolidation is absolutely crucial before any chemical control measures are implemented."

The key this year will be determining the risk and pressure of infestations as early as possible, believes Dorset-based Velcourt farm manager Mark Edgecombe.

"The degree of risk, and therefore the associated ease with which slugs can be controlled, depends on a huge array of factors.

"Weather, soil type, rotation, cultivations, seedbed quality, drilling date and chopping quality of the combine are all factors you need to try to digest and use to make a judgement on the day, based on experience.

"The current worry is that with a protracted harvest, establishment of 2014 crops may be delayed, in turn running the risk of some of those factors not being ideal.

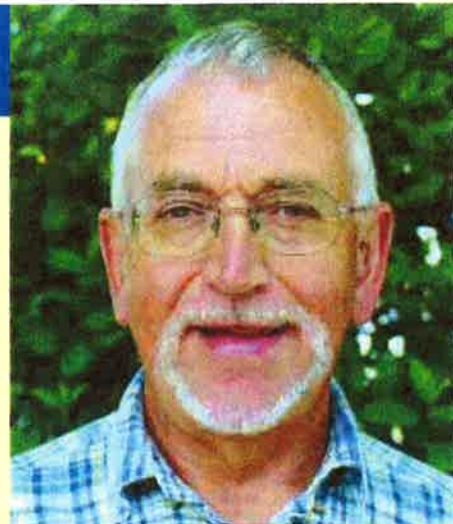
"I believe it's better to be on top of slugs early in the autumn, rather than chasing the problem through the early winter in less than ideal conditions.

"If all cultural controls and the weather aren't on your side, the chemical options are usually very effective.

"It would be a huge blow if there were product shortages, or further forward, metaldehyde was lost as an active ingredient."

Trapping slugs is widely advocated to help assess the extent of potential control problems.

"Trapping, I always find, is like soil mineral



Despite this year's hot dry July, slugs are resilient creatures, notes David Glen.

nitrogen testing," says Mark Edgecombe. "It gives you a good 'feel' for the level within a given year, but you perhaps wouldn't make too many large-scale decisions on the results of the test.

"We generally try to trap in two or three previous crop cycles in fields of high, medium and low risk. From this you can begin to build a picture of the risk of the season and make decisions from the results.

"In my opinion it's better to trap before cultivations so you don't impede visible signs of surface activity. Also, the faster you realise the scale of any potential issues, the easier it is to deal with in a sustainable and best-practice way."

Growers should plan slug control in much the same way as they do nitrogen and fungicide use, he believes. "Gone are the days when the quad bike went out to blanket treat everything in Oct when the problem was already too great.

"I don't think growers necessarily misused metaldehyde last year. It's just that the areas and volumes of product applied were significantly higher than in a 'normal' year."

He thinks more growers should use a decision-tree system for choosing products in various circumstances. He uses both metaldehyde and ferric phosphate for control depending on specific circumstances. "It's almost like a mycotoxin risk assessment in wheat."

Mark Edgecombe reckons the sooner any potential issues can be identified, the easier it is to deal with them in a sustainable way.





Last autumn's sodden conditions resulted in metaldehyde being found in water bodies at levels well above the drinking water standard.

► MSG campaign and the statutory metaldehyde application limit of 700g of active substance (a.s.) per ha per calendar year, Jim Marshall says: "The measures taken to date have shown benefits, but they may be stretched in certain conditions to meet the drinking water standard."

"If a voluntary approach doesn't generate sustainable reductions in levels in drinking water sources then it may be necessary to introduce tighter environmental restrictions."

Growers' actions this year will be particularly important, stresses Don Pendergast.

MSG guidelines

"Since the first detections in 2007 and the introduction of MSG guidelines there had been a downward trend in metaldehyde exceedances, but in 2012 this trend went into reverse in an extremely difficult season."

While regulators accept that this was driven largely by the weather, they expect growers will have learned lessons and be prepared to modify their approaches to slug control where necessary, he adds.

"Farmers need to adhere strongly to the guidelines this year and discuss strategies with their agronomist, where appropriate, to demonstrate good stewardship."

The MSG's Dr Paul Fogg notes that stewardship is an evolutionary process. "It takes time to fully understand the issue, develop the mitigation strategy, achieve a high level of uptake and then monitor its effectiveness. The entire industry has achieved a great deal in terms of promoting sustainable use. However, under high

pressure conditions it's clear that more needs to be done.

"Also, we're coming to a turning point in the next two to three years, where decisions will be made as to whether what is being done is sufficient. The status quo is unsustainable and it's not good enough to put the season down to being 'exceptional' and continue as usual — but nor should metaldehyde be considered a lost cause.

"The MSG is firmly committed to metaldehyde and we continue to invest heavily, both in terms of stewardship but also re-registration. We're working closely with water industry, Defra and regulators to develop the next steps and secure the ►

Reliance on two actives to control agriculture's number one crop pest would not be a good position to be in.



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If a voluntary approach doesn't reduce levels in drinking water, it may lead to tighter environmental restrictions.

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Although metaldehyde poses no human health risk, the task of defending its continued use will become harder if concentrations in water sources continue to exceed the 0.1 parts-per-billion EU standard for pesticides in drinking water, warns Andrew Crossley, Farms Director at Thurlow Estate Farms in Suffolk.

"We can't assume that there'll be any further reprieves," he says. "Growers need to take the issue very seriously and ensure that everyone does their bit, or there's a real risk that we'll lose metaldehyde sooner rather than later."

Slug pellets are pesticides and must be afforded the same level of respect given to other pesticides, says Simon McMunn of metaldehyde manufacturer De Sangosse.

Potential effect

Baits containing the chemical account for 80% of the market for slug control products, he notes. "This is due to existing factory establishment and production capacity throughout Europe, and that wouldn't be easily replaced or converted if we were to lose the active. The potential effect on future cropping could be enormous."

There are only two other active ingredients recommended to control slugs in the UK within an integrated pest management programme, notes the AIC's Hazel Doonan.

"Reliance on two actives to control such a major crop pest would not be a good position to be in — particularly if there were supply issues with either of them or their increased use led to non-compliance under the WFD.

"Allowing metaldehyde to be withdrawn without efforts to improve stewardship around its handling and use would set a precedent for other actives which are also under the spotlight due to issues with drinking-water compliance.

"If regulators feel that stewardship doesn't work they'll be faced with no alternative but to regulate, and we'll see products withdrawn without the opportunity to initiate better stewardship and ensure they remain available."

There are just three effective chemical

The status quo is unsustainable, argues Paul Fogg.



Adhering to MSG guidelines

Metaldehyde doses

Using a typical 5kg/ha spreading rate, the metaldehyde dose will vary by product:

Product % metaldehyde	4%	3%	1.5%
g of metaldehyde	200g	150g	75g



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Maximum total application rate

The maximum kg/ha rate of metaldehyde products that can be applied as an individual dose and during the calendar year, and the autumn restriction period, are listed in the two tables below:

Maximum individual rate: per application		
% metaldehyde in pellets	Maximum dose of pellets to nearest kg of product	
	210g a.s./ha	160g a.s./ha
4%	5kg/ha	4kg/ha
3%	7kg/ha	5kg/ha
1.5%	7.5kg/ha*	7.5kg/ha*

*CRD approved maximum rate

Maximum total rates: per hectare			
% metaldehyde in pellets	Maximum total dose of product		
	Calendar year	1 Aug to 31 Dec 1	Aug to 31 Dec
	700g	210g	160g
4%	17kg/ha	5kg/ha	4kg/ha
3%	23kg/ha	7kg/ha	5kg/ha
1.5%	46kg/ha	14kg/ha	10kg/ha

Application restrictions: metaldehyde

- Use minimum active per ha to avoid drainage and run-off losses
- Maximum total dose from 1 Aug to 31 Dec: 210g metaldehyde a.s./ha*
- Maximum application rate: 210g metaldehyde a.s./ha*
- Note that for additional protection of water, suppliers or BASIS advisors may recommend these rates are reduced from 210g to 160g a.s./ha or less*
- Maximum total dose rate: 700g metaldehyde a.s./ha per calendar year*
- No pellets to be applied within 6m of a watercourse
- Don't apply when heavy rain is forecast
- Don't apply if drains are flowing

*from any combination of metaldehyde products

slug control options — metaldehyde, methiocarb and ferric phosphate, notes Bayer CropScience's Peter Stacey.

"A complete ban on metaldehyde would leave a large hole which the other suppliers would find hard to fill, especially in the short term. If the ban occurred in a wet year then it could be that the slug pellet market would be less than half supplied, and that'd mean many crops would be unprotected.

"In such a scenario growers would struggle to establish oilseed rape, and without that crop as a break, wheat would also be less profitable."

Robert Lidstone of Certis agrees, noting that while the company has interests in both metaldehyde and ferric phosphate slug pellets, there's a clear case for adopting a programmed approach, coupled with cultural controls. "This offers farmers a choice and will ultimately help preserve the range of treatments available."

Extra measures

Jo Kennedy says last autumn's experience showed that in order to secure and be confident of long term compliance, extra measures will need to be introduced in some catchments, above and beyond those already promoted by the MSG.

"The Environment Agency is encouraging the industry to look at what these measures might be, including reducing the quantities of metaldehyde applied to the land in highest risk areas, and implementing product substitution in a way which doesn't cause pollution swapping."

A reduction in the number of active substances available for tackling any particular pest or weed can result in greater use of those left, she points out.

Existing factory establishment and production capacity wouldn't be easily replaced or converted if the active was lost, warns Simon McMunn.



"It depends very much on the active substances that remain and their environmental profiles, but there's a risk in this type of scenario that we remove one problem but create another. That's something we always need to bear in mind when trying to identify the best overall solution.

"Targeted application of extra measures in highest risk areas, i.e. being more risk-based in our approach to managing non-compliance, is a way of avoiding the need for widespread product restrictions and keeping a wider range on the market."

Run-off from field drains is one of the biggest sources of watercourse contamination the industry faces, says Simon McMunn. "So the use of alternatives to metaldehyde is essential in problem areas. The water companies recognise the importance of metaldehyde to agriculture and aren't calling for it to be withdrawn." ■



Andrew Crossley urges every grower to do their bit to keep metaldehyde.

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