

“As blight has evolved, we’ve had to evolve with it.”

# A crusade for control

**Pushing performance**

**Controlling evolving, aggressive blight populations in a wetter, warmer region has long been a challenge for potato growers in Pembrokeshire.**

**CPM finds out how agronomists and farmers are tackling the challenge head-on by using drift retardants.**

**By Charlotte Cunningham**

**With an annual average rainfall of 1080mm — according to Met Office data — the wetter, warmer weather in Pembrokeshire makes disease control a particular challenge for arable farmers.**

And as a disease which thrives on exactly those conditions blight has been a long-standing challenge for potato growers in the region. Late blight spreads rapidly through crop canopies and tubers causing severe yield penalties, explains

Dai Llewellyn senior agronomist at Agrii, who has been advising in the county for more than 20 years. “Historically, we’ve tended to suffer a lot more with blight here than much of the rest of the country, and I’ve been prescribing pretty robust programmes across the entirety of my career.”

## Sharper strategies

As well as historic challenge, the evolution and development of blight strains over recent years has only added insult to injury. “Ultimately it’s forced both agronomists and farmers to be sharper when it comes to blight control — which arguably, might not be a bad thing,” notes Dai.

“Aggressive populations like 36\_A2 are one of the biggest concerns, and with fluazinam resistance now well established, we’re looking at all the options and tools available to optimise control. As blight has evolved, we’ve had to evolve with it.”

While products have got better over time — with Dai noting offerings like Versilus (benthiavalicarb) and Ranman Top (cyazofamid) as providing good results — the key to good control of modern-day blight strains is the spray interval, he says. “When these get stretched, we quickly

start to see the blight coming in and causing issues — and there’s little even the best products can do then.”

As growers will know too well, unfortunately there is little they can do when it comes to the weather. However, what they can do to mitigate the effects of marginal conditions is consider the use of a drift retardant, says Dai. “Being on the coast, much of Pembrokeshire suffers from the effects of offshore winds — not what ▶



*Dai Llewellyn says the effects of Crusade are very visual.*



*Crusade is a drift retardant designed to reduce spray drift and maximise fungicide coverage on potato crops by removing the physical limitations on fungicides, explains Stuart Sutherland.*

▶ you want when spraying. However, a drift retardant can help to reduce the impact of wind and enhance the efficacy of the product being applied.”

And his product of choice? Crusade from Interagro. “This will be the third season I’ve used Crusade, and at first we started experimenting with it as a bit of ‘look-see’ drift-retardant product. But the benefits we’ve found go beyond just controlling drift.”

Dai says Crusade has helped increase spray days, as well as the ability to spray in marginal conditions, and push the performance of the products themselves. “When we first started out with it, some of the farmers were a bit sceptical, understandably. We’d give them a can and send them off spraying and they were astounded when they saw how much it improved spray pattern and drift control.”

He adds that the effects of Crusade are very visual. “On one farm, you could literally see the line in the crop where the farmer had added the Crusade. There was a clear visible difference.”

Dai believes the obvious return on investment comes via gaining an extra spray day a week. “I recommend it at any stage when the weather or conditions become a bit marginal and for many of our growers, using Crusade has become very much part of the routine.”

One of those growers is Patrick Elliot who grows 190ha of potatoes near Tenby on a contract with Puffin Produce who supply supermarkets across Wales. “Blight is something that’s always in the back of our minds here and we’re currently spraying every seven days to try and

stay on top of control. However, the wind and catchy weather along the coast just exacerbates the pressure, and it’s very rare that we get single digit wind speeds here.”

Patrick explains that he’s been working with Dai for the past four years and when Dai suggested using Crusade to alleviate some of the challenges associated with blight spraying, he was keen to give it a go. “We always find ourselves questioning whether or not we can go spraying, so the thought of being able to utilise something which could help widen our application window was a real winner.”

## Visible difference

In fact, he said the benefits with Crusade are so visible that he noticed the difference within 10 seconds of first application. “Dai advised just dropping a can in to test it as we were spraying, so we did and instantly saw the difference in how the blight spray was covering the crop.”

Patrick also believes that Crusade is not just useful with blight applications. “We’ve noticed this particularly at desiccation — for us, Crusade’s drift reducing ability clearly means more product is getting to the leaves, therefore enabling a faster burn-off. For anyone sat on the fence, it’s definitely worth giving it a go.”

Of course, even with the best product and an effective anti-drift agent, nozzle selection also plays an important role in keeping the product on the crop — even more important than ever with challenging diseases like blight.



*Patrick Elliot is spraying for blight every seven days to help keep on top of the disease pressure in Pembrokeshire.*

Syngenta has been working on developments in spray nozzles for quite some time, leading to the development of 90% drift reduction nozzles for use across an array of crops and timings — including blight foliar treatments.

“New designs of angled 90% drift reduction nozzles offer the potential to improve spray penetration throughout the crop canopy with larger, higher energy spray droplets,” explains Harry Fordham, New Farm Technologies lead at Syngenta.

“The spray patterns produced can significantly reduce the risk of drift that ensure more of the product applied stays in the field target.”

Harry adds that this is particularly important for potato blight, where any wind ▶

## Getting the best from Crusade

Crusade is a drift retardant designed to reduce spray drift and maximise fungicide coverage on potato crops.

In the case of blight, it does this by removing the physical limitations on fungicides, explains Stuart Sutherland, technical manager at Interagro. “It reduces the number of fine spray droplets, smaller than 100 microns, that are the most susceptible to drift. In turn, this effect increases the spray angle uniformity at the nozzle, helping to ensure the correct dose is applied to the target, while protecting the wider environment.”

The product has also been designed to reduce droplets at either end of the spray spectrum, he adds. “It coalesces ultra-fine droplets into small droplets so they are less prone to drift and it splits very coarse droplets

(a feature of low drift nozzles) into smaller droplets so they are less prone to bounce or run off from the leaf.

“Optimising droplet size in the upper end of the spectrum enables the spray droplets to penetrate the canopy lower down and be retained. The addition of Crusade to fungicide sprays helps to maximise coverage to all parts of the crop canopy, preventing scattered infection.”

All of this comes on top of Crusade’s ability to significantly reduce drift and can be used across the entire blight programme.

Recommended at a dilution rate of 0.25% of the final spray volume at each application, there are no restrictions on the number of applications or the latest time of application.

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*The addition of Crusade had a positive and significant impact on levels of disease control in Syngenta trials, explains Harry Fordham.*

► gusts that would shift the spray pattern of finer droplets could result in patches of the crop receiving less application and therefore lower protection from infection. Where weather conditions also interfere with crucial blight spray intervals, the adoption of drift reduction technology could help operators assure more timely applications, he reckons.

“Over recent seasons Syngenta research at the independent Eurofins trials site has shown the 90% drift reduction technology of the new 3D ninety nozzle, consistently outperformed conventional flat fan nozzles for blight control with Revus



*Nozzle selection also plays a role in keeping blight at bay.*

(mandipropamid) applications.”

With the aim of seeing if this performance could be enhanced further, Syngenta also looked at the effect of Crusade when applied with Revus and the 90% drift reduction nozzle. In each season’s trials, the performance of Revus was maximised where Crusade was used, explains Harry. “The unique way Crusade improves the consistency of size and quality of spray droplets means more product is available to reach the lower leaves.”

## Application research

Studies at Syngenta’s application research facility at Jealott’s Hill in Berkshire had previously shown the addition of Crusade typically produced more droplets per ml of spray in the optimum spectrum for potato leaf coverage. In conjunction with an angled spray pattern, this improves targeting of lower leaves and better protection is delivered throughout the crop canopy, adds Harry.

Last season, the Eurofins field trials were repeated, this time with Amphore Plus (mandipropamid+ difenconazole). The combination of 90% DRT nozzles and Crusade again providing the most effective overall results for blight control throughout the season.

“Close analysis of the results, three weeks after the blight programme had been stopped, showed Amphore Plus applied through the 3D ninety was performing very well, but when you added the Crusade in it had performed exceedingly well and better than the other nozzles on test.”

In the 17 September assessment, 21 days after the final Amphore Plus

application and when blight had reached 100% in the untreated plots, the addition of Crusade into the tank allowed the efficacy to be further maximised, with a clear reduction in disease severity when used with the 90% drift reduction nozzles on trial.

In other intrinsic activity research by Eurofins last year, the season-long applications of Revus and Crusade were the most effective straight CAA blight fungicide in the trials, as well as being inherently active on all common and aggressive blight genotypes.

“The 3D ninety was the best choice in achieving the best level of disease control,” he concludes. “The addition of Crusade had a positive and significant impact on levels of disease control.” ■



*More aggressive populations of blight have meant a change in strategy for many growers.*

## Pushing performance

At the heart of good crop production lies careful use of chemistry to protect the plant and maintain performance, right through the season. But optimising the efficacy of plant protection products can be challenging, while increasingly restrictive regulations limit just how far you can go.

This series of articles explores the science behind the use of adjuvant and biostimulant tools to help power both chemistry and crop performance, as well as increase understanding of why they’re needed and what they do. We’re setting out to empower growers and drive crops to reach their full potential.

CPM would like to thank Interagro for kindly sponsoring this article, and for providing

privileged access to staff and material used to help put the article together.

Crusade is a flexible anti-drift agent to maximise protection and prevent blight infection. For use with all potato blight fungicides throughout the programme, Crusade is designed to reduce spray drift and maximise coverage to all parts of the canopy, so you get the most from your spray and keep blight away.



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