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| **New products provide promising future for control of late blight**  | 00/00/00 |

**Despite the continued rapid evolution of late blight populations and the potential loss of mancozeb, the future of late blight control in potato crops is promising.**

In a recent webinar on BASF’s Real Results Virtual Farm, Dr David Cooke, plant pathologist at The James Hutton Institute joined Dr Ruairidh Bain, potato pathologist at SRUC, and Paul Goddard, Stewardship and Value Chain Manager at BASF to explore the future of blight crop protection.

“Late blight populations are dynamic and the pathogen evolves rapidly,” summarised Dr Cooke.

“The latest EuroBlight research shows the rapid expansion of invasive clones such as 36\_A2 and 37\_A2 since 2017. As the latter is known to have reduced sensitivity to fluazinam, this change in the population has implications for crop protection management.

“13\_A2, the genotype known as ‘blue 13’ and known to be resistant to metalaxyl, is in decline. While 6\_A1, otherwise known as ‘pink A6’ is stable.”

All of these isolates were first seen in mainland Europe and is what makes the EuroBlight research so valuable. “It gives us a ‘heads up’ on what coming our way,” says Dr Cooke.

Today, researchers on the continent are keeping a close eye on the newly emerging isolate 41\_A2.

“What’s unusual about this isolate is that it is appearing where we’d normally find sexual clones and a relatively stable population,” explains Dr Cooke. “At the moment we don’t know much about it, but it is causing problems in Scandinavia. Fortunately for the UK it currently appears to be spreading East rather than West.”

Dr Cooke advises growers to take note of the dominant pathogen genotypes in their area, and volunteer to become a Fight Against Blight ‘Scout’, submitting samples from their crops. Not only are they valuable contributions to the wider Fight Against Blight and EuroBlight projects, growers will find out what specific genotypes they have within a couple of days, enabling them to plan the most effective spray programmes.

“Primary inoculum remains a major concern,” he says. “Manage volunteers in adjacent fields, check cull piles for growth and active blight, use long rotations to reduce oospores and consider cultivars with higher resistance.”

In light of mancozeb’s uncertain future and its recognised multi-site activity, Dr Bain’s presentation explored fungicide resistance and its prevention through late blight fungicide programmes.

“The first time we saw fungicide resistance in the late blight pathogen was in the early 1980s. The fungicides affected were the phenylamides. In the 40 years that have followed, we’ve only had one further example, i.e. fluazinam. That certainly doesn’t mean we can be complacent, but it helps put the resistance issue into perspective,” he said.

Mancozeb was approved for used in 1960 and has a low EuroBlight efficacy rating of 2.0, on the 2.0 to 5.0 scale. In contrast, all the products approved for use in Europe since 2005 have EuroBlight efficacy ratings of more than 3.5.

“Over the years products approved in Europe have been generally increasingly effective. Today growers have a large number of modes of action and there are more in the pipeline. So, when it comes to managing resistance, as long as we are responsible in how we use those modes of action, there’s no reason to be overly concerned about the loss mancozeb.”

Responsible use of fungicides, according to Dr Bain, includes limiting the number of applications of individual modes of action to any crop by using mixed modes of action either with co-formulations and/or tank mixes, and alternating between different modes of action. Limiting the occurrence and severity of late blight as much as possible through IPM strategies, Dr Bain said, will further reduce the likelihood of the pathogen developing fungicide resistance.

Designing diverse spray programmes, however, isn’t easy, as Mr Goddard explained.

“A main crop emerging the first week of June has 18 weeks of foliage to be protected before burndown. An average potato crop, in an average year will have 12 late blight sprays. In a difficult year, that could be increased by another 50%.”

“While in theory there are 207 available products with 12 modes of action between them, many are being challenged by resistance or by the reapprovals process. Add in the fact that many are co-formulations, and the challenge of protecting the crop without exceeding maximum applications of a given product, or of an active ingredient dosage, becomes apparent.”

It is why, he says, BASF have developed Enervin SC® as a straight formulation.

“It is the first straight formulation of ametoctradin, which is QoSI chemistry. It offers growers flexibility and potentially, simplifies programme planning for growers and agronomists. It’s well suited to the stable canopy slot and potentially frees up CAA and QII chemistry for use elsewhere in the programme.”

A 2019 Eurofins trial, demonstrated Enervin SC®’s efficacy; providing outstanding control despite the artificially high disease pressure. It worked well in partnership with propamocarb, mandipropamid and mancozeb. In 2020, BASF repeated the trial replacing mancozeb with a cymoxanil/propamocarb co-formulation. Again, all treatments stood-up to the challenge well.

BASF has another blight spray in the pipeline, BAS657. “It’s systemic, multi-site chemistry and, like Enervin SC®, it is regarded as one of the strongest products in the Eurofins and SRUC trials,” notes Mr Goddard. “It’s a co-formulation with two unique modes of action in ametoctradin and potassium phosphonate. The latter triggers host plant defences and works in synergy with the QoSI chemistry. Positioned early in the programme, it offers protection when the crop is at rapid canopy development, protecting the foliage.”

While mancozeb may be missed by some, new chemistry like Enervin SC® and BAS657, with increased efficacy and flexibility will undoubtedly help growers and agronomists further control late blight.

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**About Enervin SC®**

Enervin SC® is a registered Trade Mark of BASF. Enervin SC ® contains amectoctradin. For further product information including warning refer to [agricentre.basf.co.uk](http://agricentre.basf.co.uk/%22%20%5Ct%20%22_blank).

**About BAS657**

BAS657 is pending approval. BAS657 contains ametoctradin and potassium phosphonate.