Real Results Pioneers

BASF
We create chemistry

An honest approach

The risks of growing specialty crops like potatoes are on the rise and the mitigations available are decreasing, meaning tools to help growers maintain yield and marketability of crops are vital. *CPM* finds out how a Scottish grower is tackling costly potato skin blemish diseases.

By Charlotte Cunningham

Potatoes can be a tricky crop to perfect, with producers often facing a plethora of challenges during the growing season, from drought to disease.

With the marketability of crops significantly affected by damage or blemish, it's estimated that rhizoctonia, silver scurf and black do, blemish diseases, are together estimated to cause annual losses in the region of £5M to the industry — according to figures from Fera Science — with losses occurring due to both lack of marketability and reduced yield caused by these diseases.

J & E Smillie know these challenges all too well, growing over 280ha of seed potatoes in Perth, Scotland. Founded by the late Gordon Smillie, the potato growing and merchant business is now headed up by Alistair and Fraser Melrose.

Having grown vastly from humble beginnings, the business is now producing everything from their own pre-basic seed to new varieties for both the UK and export markets.

Good skin finish

Potatoes for export is a huge part of the business, with seed crops destined largely for North Africa and the Far East. While this is a lucrative market, it also has a very high requirement for a good skin finish, explains Fraser.

What's more, the Canary Islands have recently announced nil tolerance on imported soil — meaning potatoes can't be imported if there is surface dirt on the tubers. "With that, you're obviously exposing the skin totally to a full visual inspection. So again, skin finish is very important."

And with varieties for export often unable to find a domestic home, there's no Plan B, meaning it's vital to protect and prioritise skin finish right from planting, adds Fraser. "We're interested in providing high grade seed to high grade markets. So, with that the pressure is on to get that crop in the ground, up and away and stay healthy."

With disease being one of the biggest threats to skin finish, the farm has been ▸

> *"If you start even, you'll stay even."*

Containing the active Xemium (fluxapyroxad), Honesty is an SDHI fungicide providing activity against rhizoctonia, silver scurf and black dot, and has incidental activity against dry rot, gangrene and other key potato challenges, explains Paul Goddard.

Paul Overton has been overseeing the trials as a consultant for BASF, testing Honesty extensively over the past three seasons in varied climatic conditions and soil types.

▸ hosting trials with BASF to test out its new liquid tuber treatment, Honesty. Containing the active Xemium (fluxapyroxad),

Trials work has shown that Honesty can bring additional physiological benefits to the crop, by boosting stolon initiation which results in even, good looking potatoes, resulting in more marketable grade out.

Honesty is an SDHI fungicide providing activity against rhizoctonia, silver scurf and black dot, and has incidental activity against dry rot, gangrene and other key potato challenges.

Strategic decision

While Honesty has been approved for almost three years now, BASF's Paul Goddard says a strategic decision was made to delay its launch until this year. "At the time of approval, the market was in a state of change. In the past, we were heavily leaning on powder treatments, but these were being lost and liquid treatments were coming in to replace them," he explains. "With it being a completely new area, we wanted to invest time into the product and understand fully its capabilities before we put it onto market, and working with growers, like J & E Smillie, has been an essential part of those trials, research and development work."

Independent agronomist, Paul Overton, has been overseeing the trials as a consultant for BASF, testing the product extensively over the past three seasons in varied climatic conditions and soil types.

The trials have looked at a wide range of factors including any varietal differences when Honesty was applied, he explains. "We spent two years running variety screens, applying Honesty to the top 30 seed varieties to see if there was any varietal sensitivity.

"Two years of results showed that Honesty actually had a positive effect on every variety. Sometimes it's quite difficult when you're trying to prove a negative," he laughs.

J and E Smillie produce seed potatoes for UK and export markets, with the exports requiring a particularly high skin finish.

They also ran grower trials with J & E Smillie, doing commercial applications comparing it with untreated crops, adds Paul Overton. He says the Honesty treated crops consistently had low — or no — presence of costly skin diseases and very clean, smooth skin finish.

As well as its disease control activity, the trials work has shown that Honesty can bring additional physiological benefits to the crop by boosting stolon initiation — which results in even, good looking potatoes, resulting in more marketable grade out.

"These new generation treatments — which I class Honesty to be — also give a nice evenness to the crop," says Paul Overton. "You tend to see more even emergence, even stem numbers, good stems and stolon health. And if all the tubers are even and the same size, it makes that crop easier to manage into senescence and burn down."

Particularly for export crops, like J & E Smillie are producing, burn down can become a very pressurised time, he adds. "So if the crop is an even size, it's easier. There's nothing worse than sticking your fork in the ridge and thinking, 'I could do with some of the small ones getting a bit bigger and some of the big ones, not getting any bigger'.

"And in the past even with sulphuric acid and diquat, they were not hand brakes — you can't just pull the hand brake on and stop the crop. So starting and staying even just simplifies management hugely. If you start even, you stay even, and it's as simple as that because they will come in with a top-grade size."

Paul Overton says he has also noticed rooting benefits. "I think in the industry we underestimate the effect of early root development, health and stem numbers have on tuber initiation," he notes. "Something I've really been impressed

Product pipeline

As well as protectant activity from Honesty, potato growers can now also benefit from a newly launched fungicide which was debuted at the recent British Potato event.

Privest (ametoctradin+ potassium phosphonates) is designed to target late blight and provides a unique mode of action with the combination of ametoctradin and potassium phosphonates to trigger natural defence mechanisms within potato crops, explains Paul Goddard. "It's the first approved use of potassium phosphonates in a potato crop. Privest offers multiple modes of action because potassium phosphonate has both direct and indirect activity plus the activity of ametoctradin.

"In Eurofins trials over the past four years, Privest has consistently delivered 'top drawer' efficacy, as a standalone product and when compared to some of the top performing alternatives in this category."

What's more, the ametoctradin is unique as there is nothing else on the market classified under the QoSI group, he adds. "Being in a unique group means that the management of the active is easier and also simplifies inclusion in the programme.

"With the EU 43_A1 strain of late blight recently appearing in Denmark — which is resistant to CAA chemistry — this product fits very nicely where something like Revus (mandipropamid) would have been used in the past."

In terms of where it fits in the programme, Paul Goddard says Privest is best used early in the season, during the rapid canopy stage. "It's truly systemic and if you want to protect new growth then the way to do that is with a systemic product."

with the Xemium is this great big root ball that is created.

"We've seen it in some of the tests we've done that the eye opens, the shoots emerge and very early fibrous root is enhanced by the Xemium."

As well as in the field, this effect was seen within safety work carried out with Scottish Agronomy, explains Paul Overton.

J & E Smillie also trialled the Honesty Potato Pack system — which BASF is calling a two-can solution. "Honesty is applied using a roller table at a rate of 0.2 l/t, with 0.05 l/t of application enhancer, available as what we've called the Honesty Potato Pack," explains Paul Goddard.

"This pack pairs the Honesty with a blue colouring solution to ensure those applying the product and growers can readily see the fungicide coverage."

Paul Overton adds that this makes the product really usable for growers. "We tested it in the shed and it is very machine compatible and the formulation went down well — it holds in suspension nicely and makes it very obvious which crops have been treated, compared with some other products where you can barely tell.

"We did a couple of years of testing to ensure application was optimised not only via calibrating the nozzle and having the right rate but also so that retention on the tuber was high. This was something powders really failed on previously, so we've come a long way now with these new liquid treatments."

The Honesty Potato Pack pairs Honesty with a blue colouring solution to ensure those applying the product and growers can readily see the fungicide coverage.

Honesty treated vs untreated potatoes, illustrating the distinctive blue colouring.

Holistic solution

That said, Honesty isn't a silver bullet, concludes Paul Goddard, but instead part of a holistic solution. "The key thing with these new treatments is that growers will be able to use them to make a good seed better — it's not about saving distressed stock."

Paul Overton adds: "2024 is going to be a very difficult season because the seed grown in 2023 that we're going to plant next year has been exposed to quite a lot of bacterial problems and anytime you're harvesting warm and wet soils — and there's any amount of water logging — the bacterial load on seed increases.

"If you want to see the difference and impact this can make, I'd encourage everybody to keep back an untreated sample and a treated sample just to look at.

"Ultimately, if you get it right from the start, you're more likely to get the best performance from crops. Start right, stay right."

Looking to the future, Paul Overton says J & E Smillie are keen to continue with Honesty. "I think confidence with seed treatment is key and the trials give the grower experience to see how they and the crops handle them, as well as the opportunity to feedback on any issues."

Paul Goddard finishes: "It's vital that these products are tried and tested in the real world and having a network of growers like J & E Smillie to enable this is crucial when it comes to developing sustainable potato solutions for the future." ■

Testing of the Honesty Potato Pack in the shed showed it is very machine compatible and the formulation went down well with staff at J and E Smillie.

Field work has highlighted that more even emergence, even stem numbers, good stems and stolon health was seen where Honesty was applied.

The Real Results Circle

BASF's Real Results Circle farmer-led trials are now in their sixth year. The initiative is focused on working with more than 50 farmers to conduct field-scale trials on their own farms using their own kit and management systems. The trials are assessed using ADAS' Agronomics tool which delivers statistical confidence to tramline, or field-wide treatment comparisons — an important part of Real Results. The features also look at related topics, such as environmental stewardship and return on investment. We want farmers to share their knowledge and conduct on-farm trials. By coming together to face challenges as one, we can find out what really works and shape the future of UK agriculture

BASF
We create chemistry

THE REAL RESULTS CIRCLE