

Inta-Ag Mag

JULY 2021



The Inta-Ag Agronomy team enjoyed a trip to visit our soya bean, onion, potato and carrot customers in Central North Island. A special thank you to Scott Young from Kim Young in Sons for hosting our packhouse and crop visit.



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POTATO REVIEW | MAY/JUNE 2021

Stronger armoury for cave-dwelling tubers

Waste issues addressed at 1,000-year-old potato store.

A DATA logger disguised as a potato is helping overcome waste issues for a Turkey-based company using a 1,000-year-old cave to store potatoes.

The mass importer and producer of seed potatoes, AR Tarim, imports up to 8,000 tons of seed potatoes and produces around 11,000 tons locally which are kept in the storage facility located in Kayseri. Minimal waste is central to its aim to become more efficient.

AR Tarim's 1000-year-old cave storage facility is a natural way of storing potatoes. With little energy demands, the cave's unique design naturally provides ideal storage conditions throughout the year. Ambient temperatures of 4°C in winter and 14°C in summer are easily achieved, even when outside temperatures can reach up to 35°C.

However, Managing Director Ekrem Suad Sadak said the company had encountered quality issues, with bruising being a big concern and the company. Like many growers and producers in the UK, waste is a key concern for the Turkey company.

Estimates by the UK's Waste and Resources Action Programme (WRAP) indicate that potatoes are one of three root vegetables that make up more than 50% of the overall food waste in primary production.

This leads to staggering financial losses and long-term effects on growers and producers.



Optimisation of food production has become of significant importance in recent years. Primarily driven by climate change, legislation and financial implications, growers and producers can no longer afford to be wasteful, according to the organisation.

UK crop quality and storage specialist Martin Lishman Ltd is amongst many within the supply chain looking at ways of minimising waste, and most recently worked with AR Tarim to look for a solution.

The TuberLog Electronic Potato, a data logger disguised as a potato, identifies the location and severity of damage-causing impacts in harvesting and handling machinery, enabling the user to carry out adjustments, and the HotBox, a sealed cabinet that exposes tubers ready for storage to both humidity and heat to test for disease, infections and bruising.

"The TuberLog has helped us to reduce mechanical damage, meaning the grading machine no longer causes any tuber bruising. The harvester seems to work better too, since the crop which arrives from the field shows less problems.

The Hot Box is now so well established in our process that it is unthinkable not to have it. It is essential for us in the early detection of seed tuber issues like Alternaria, Dry Rot etc," said Ekrem.

To further help improve the quality of the seed potatoes, the introduction of a soil testing kit has added to AR Tarim's quality control armoury. The portable SKW500 soil laboratory gives the growing team an insight into soil condition and highlights any requirements for healthy seed growth.

The introduction of 21st century quality control measures to complement the cave's effective storage conditions has given the AR Tarim team a reassurance boost, said Ekrem.

"Our investments in achieving a better-quality product, combined with before and after-sales service makes us stand out. We will continue to develop our company in this direction." ♦

"The TuberLog has helped us to reduce mechanical damage, meaning the grading machine no longer causes any tuber bruising. The harvester seems to work better too."



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Seed treatment options dwindle for rhizoctonia

FARMERS WEEKLY UK | 12 FEB 21

A further narrowing of the potato seed treatment options and application methods available to growers is putting a focus on liquid products where seed-borne rhizoctonia control is required.

While there are still both powder and liquid treatments on the market, changes to the line-up are ongoing, with another powder treatment disappearing this year.

As the options reduce further, growers will have to decide whether to have seed treated at source or on the farm, either by themselves or by contractors.

PRODUCT UPDATES

To re-cap, the abrupt withdrawal of Monceren (pencycuron) last year saw the end of manual application of powder treatments, as it was the only product permitted to be hand sprinkled on tubers.

This year will be the last for another powder product from Bayer, Emesto Prime (penflufen), following confirmation that final use will be by the end of June 2021.

An unchanged maximum residue limit means that any crops treated this year will remain marketable.

With its wider activity against seed-borne diseases, Emesto Prime had a place on potatoes destined for markets where better skin finish characteristics are important.

Applied with an on-planter applicator, it was reported to stick well and be retained on the tubers.

Its imminent departure means that after this season, the only powder on the market will be Rhino DS (flutolanil) from Certis, which is also applied on the planter with a specialist applicator to ensure good seed coverage.

Recognised for controlling more strains of rhizoctonia than Monceren did, Rhino DS costs around £15-18/t.

For those who don't want to change their application practice and move to liquids, it is fast becoming their only option.

LIQUID TREATMENTS

Where liquids are preferred for their better coverage, safety credentials and handling characteristics, the choice is between Rhino Flow and Maxim 100 FS (fludioxinil).

These differ in price and disease control spectrum, with Maxim from Frontier Agriculture being both a contractor applied material and available for treatment at source or on-farm.

Its higher price tag of around £25/t reflects its wider disease activity, which includes silver scurf and black dot along with rhizoctonia, while there is also a contractor application fee of around £10/t for those who choose that option.

Deciding whether to have seed pre-treated, applied by professional contractors or to make applications on-farm will depend on the individual farm circumstances and previous practice.

Hutchinsons agronomist Andrew Goodinson, also points out that seed should be examined for disease when it arrives.

"Wash the sample off and do a visual assessment. You can also send samples off to NIAB for testing to see if treatment is needed."



Where it is required, he notes that all of the choices have good efficacy on black scurf but has a preference for liquid products, believing it is often better to treat potatoes before they go out to the field.

PLANTING PRESSURES

"The planter operator is already very busy and there have been issues in the past with contamination and poorer coverage with powders. Treating seed on the planter is not always straightforward."

He also stresses that all the seed treatments are ineffective against soil-borne rhizoctonia, which is where in-furrow applications of products such as Amistar (azoxystrobin) and Allstar (fluxapyroxad) have a place.

Nick Badger of Frontier Agriculture agrees that complexities at planting have seen a drive to get the treatment of seed done earlier, with growers moving away from powders and into liquids, being keen to get seed onto farm and manage their own stocks.



RHIZOCTONIA

Rhizoctonia solani is a fungal disease causing stem canker, damping off, black scurf, skin netting and tuber growth distortions in potato crops. Black scurf can be soil and seed borne and survives a long time in soil and on volunteers or crop debris.

SYMPTOMS

Affected roots, stems and stolons show reddish brown necrotic patches called cankers.

A stem canker can cause symptoms similar to those of blackleg, in that plants are stunted and develop a rolling of the upper leaves.

Brown, slightly sunken lesions with distinct edges develop on the stem base and on stolons.

If severe, lesions can merge to girdle the stem. Later a white collar can develop on the stems at soil level. The resulting pruning of the stem can lead to uneven emergence and gaps in crops.

On the tuber, black scurf is an entirely superficial black incrustation (sclerotia). It usually appears as small, irregular blemishes that can be extensive, but easily scratched off.

Affected tubers can show growth distortions that resemble glyphosate damage. Affected areas usually show retarded growth in association with thickened brown skin patches that are often referred to as netting or elephant hide.

Other distortions include dimples and trumpet shaped holes penetrating the tuber.

"With liquids, there are three main application options," he confirms. "Seed can be treated at source, before it is dispatched, if the seed house offers that service."

Alternatively, a professional contracting service can call at the farm to carry out the operation, with Frontier having a mobile application service operating in most parts of the country.

The third option is that the farm carries out its own treatment over the roller table, using a specialist applicator.

While this may require investment, installation of bespoke equipment often

coincides with an overhaul and re-design of the grading line.

"The loss of two powder products is concentrating minds and growers are looking at what's needed for using liquids."

Taking equipment off the planter is beneficial for many reasons, he notes, while the application characteristics of liquids are better for both operators and crop performance.

"There's been a lot of change, but there's also been greater sophistication introduced, which is no bad thing." ♦

TIMELINE: POTATO SEED TREATMENTS

25 JANUARY 2018

Ernesto Prime launched, the first potato seed treatment with an SDHI fungicide, with limited quantities available that spring. Its first full season was in 2019 due to its late approval

14 OCTOBER 2019

Agrochemical manufacturer Bayer halts sales of potato seed treatment product Monceren with immediate effect amid regulatory uncertainty about its future

25 MARCH 2020

The Chemicals Regulation Directorate (CRD) announces the immediate withdrawal of Monceren

9 JUNE 2020

The EU announces the withdrawal of Ernesto Prime with uncertainty over its availability for the 2021 planting season

30 JUNE 2021

Final use date for Ernesto Prime

Brown leaf spot of potatoes can be misidentified as early blight, potentially compromising disease control.



(A) Symptoms of early blight on potato leaves caused by *Alternaria solani* and



(B) Symptoms of brown leaf spot on potato leaves caused by *Alternaria alternata*.

Photo credit: Willie Kirk and Phillip Wharton, MSU

Early blight, caused by *Alternaria solani*, is a very common fungal disease present in most regions that produce potatoes. Brown leaf spot (*Alternaria alternata*) of potatoes has gained attention recently for its similarity to early blight. Just as common, yet underestimated, brown leaf spot presents symptoms that are often incorrectly attributed to early blight. Successful control of both pathogens depends on accurate identification and a tailored approach.

BROWN LEAF SPOT

The fungus that causes brown leaf spot, *Alternaria alternata*, is closely related to early blight (*Alternaria solani*). Like early blight, brown leaf spot overwinters as spores and mycelia on the infected tissue of various Solanaceous hosts. Warmer temperatures in spring trigger fruiting and the release of spores from both fungi, which are moved by wind and water onto potato plants. When moisture is available, the spores germinate and penetrate potato tissue, often through existing wounds. Initial infections of the two pathogens create similar symptoms: small, dark spots on lower leaves.

FARMERS WEEKLY UK | 5 FEB 21

Focus on seed and nitrogen rate to limit spring barley lodging

Spring barley growers are being urged to focus on seed rates, along with nitrogen fertiliser rates and timings, to avoid lodging and big yield loss this season.

Pete Berry, head of crop physiology at crop consultant Adas, looked at root and stem lodging in 2018 and 2020, examining four factors: variety choice, seed rate, nitrogen rate and nitrogen timing.

"It is often a balancing act between yield and lodging risk, but a drilling rate of 300-400 seeds/sq m would seem to be optimal, and assessing residual nitrogen and matching that with what is applied is important," he says.

Lodging results in crops leaning and even falling flat on the ground due to a weak root structure or weak straw strength. This leads to reduced yields and causes harvesting difficulties.

VARIETY CHOICE

All spring barley varieties on the AHDB Recommended List have a score of 7 for resistance to lodging, except for Sassy (6), on a 1-9 scale where a high figure shows good resistance to lodging.

Those scoring 7 include popular varieties such as Laureate, Diablo, Planet and Propino, so there is little difference between varieties.

SEED RATE

Dr Berry looked at four different drilling rates: 100, 200, 400 and 600 seeds/sq m. He showed that increasing the seed rate gives a weaker stem strength, while higher seed rates reduce slightly the crop's height.

Increasing seed rates by 100 seeds/sq m was equivalent to reducing varietal lodging resistance to stem/root lodging by 1.5 to 2 points, and vice versa.

So by reducing the seed rate by 100 seeds/sq m, the equivalent lodging rating would increase, for example, from 7 to 8.5-9.

NITROGEN RATE

The trial demonstrated that raising the nitrogen rate by 50kg/ha was equivalent to reducing the varietal lodging resistance score to stem lodging by 1 point, and cutting the resistance score to root lodging by 0.5 points

NITROGEN TIMING

The work illustrated that delaying the first nitrogen split from applied in the seed-bed to the end of tillering (GS30) was equivalent to increasing the varietal lodging resistant score to stem lodging by at least 2 points, but it also reduced yield.

In addition, Dr Berry found that using a plant growth regulator (PGR) to reduce

the crop height by 5cm increased the varietal lodging resistance score by almost 1 point, while larger crop canopies at GS30 were associated with greater lodging risk.

BRACKLING RISK

In a further 2019 trial looking at brackling – or when barley heads bend over or snap off altogether – he found that a 10% increase in this condition was associated with a yield reduction of 0.11 to 0.14t/ha, and a crop with 100% brackling could lose more than 1t/ha in yield.

Dr Berry found that PGRs Terpal (mepiquat chloride + 2-chloroethylphosphonic acid) and Medax Max (trinexapac ethyl + prohexadione) applied at GS37, or when the flag leaf is just visible on the main stem, were very effective at reducing brackling in 2019. In the 2020 trials, brackling was seen very late in the season and had little impact on yield.

The 2019 trial showed that when Terpal was applied at 0.75 litre/ha it reduced the crop height by 14cm, while Medax Max applied at 0.4 litre/ha cut the height by 10cm.

All spring barley varieties on the Recommended List score an 8 for brackling resistance, except for Cosmopolitan (7), Sienna (7) Sassy (6) and feed variety Prospect (9).

Depak Jivan wins the Potato Yield Comp!

Congratulations to M Jivan Ltd Winner of this years Syngenta/Inta-Ag Potato Yield Competition



Dean McMiken (Inta-Ag Ltd) and Raeleen Watherston (Syngenta Ltd) presenting Depak Jivan with his winning vouchers



Second hand Potato machinery for sale ex Inta-Ag

Contact the team for details.



Trials on tuber moth

AS SEEN IN POTATO REVIEW UK

TWO Pukekawa trials in New Zealand are showing some early promise for potato growers when it comes to greater control of the potato tuber moth, *Phthorimaea operculella* (PTM).

Inta-Ag has been running a trial on a potato grower's land at Pukekawa using straw mulch to see what effect it can have on PTM. The one hectare trial site had 10 tonne of straw mulch applied in October last year with several traps set up to catch PTM as well as TPP. Full results from the Pukekawa trial are expected when PTM damage can be fully assessed after the potato crop has been in the ground for some time but weekly visits to the trial site showed it already appeared that nightshade, potato growers' worst weed threat, was being kept at bay.



Report into processing dumping

AS SEEN IN POTATO REVIEW UK

THE Ministry of Business, Innovation and Employment (MBIE), the public service department of New Zealand, issued its interim report on Frozen Fries Investigation which revealed that processed potato dumping is an issue in New Zealand.

However, it goes on to say that the problem is not bad enough to apply tariffs.

The report investigates European dumping of frozen processed potato into the NZ market. Potatoes NZ, the industry association representing the interests of the New Zealand potato industry, is reviewing the report and will meet with processors to determine how to act.

Australia has contributed nearly half of the annual volume of imports since 2016 while latest data shows that import shares from Belgium and the Netherlands are at 11% and 18% respectively.