



ONIONS AUSTRALIA 2021

HIGH PRIORITY
ONION PESTS

ONION INDUSTRY
EXPORT STRATEGY

STRATEGIC
INVESTMENT PLAN
2022-2026



INTEGRATED PEST
MANAGEMENT PROJECT
PROVIDES INSIGHTS TO
ONION GROWERS

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ONIONS MARKETING UPDATE
2020-2021

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WELCOME

Welcome to Volume 38 of the Onions Australia annual magazine.

In what has continued to be a year of interruptions, we have slowly been creeping towards normalcy and remain focused on continuing to drive the Australian onion industry forward.

It's wonderful to be able to provide you with the updates of the sector through our 'industry bible'.

We have searched across the country to bring you the most important and informative news to keep you up to date with levy funded research and development and marketing.

Highlights within this edition include the announcement of the new 2022-2026 Onion Strategic Investment Plan, high priority onion

pests you need to keep an eye out for and the onion industry export strategy which aims to open new export avenues for our growers.

Considering the challenges growers have faced this year, we have plenty of stories throughout that show new growth and development opportunities, research findings, and highlight the success of levy funded projects.

As always, we encourage you to reach out to the OA office with any feedback, our doors and inboxes are always open.

We hope you enjoy the read and look forward to your support to continue publishing our industry's valued publication.

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Onions Australia Executive Committee

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Alan Thierry
Jason Daniell
Greg Bragg
Tim Groom
Jarryd Dolling
Lewis Lydon
Dean Metcalf
Mark Dobson

Chief Executive Officer

Lechelle Earl

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Hort Innovation
Strategic levy investment

ONION FUND

This project has been funded by Hort Innovation using the onion research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit horticulture.com.au

FROM THE CHAIR

As I sit here pondering the year that has been, it is perhaps difficult to see any positives from the past 12 months.

With the COVID-19 situation in Australia, we find ourselves in the same place a year ago, without a firm date of when we will exit lockdowns and border closures.

Prices for onions over the past year have been low. This is due to a number of factors including lower demand from decreased export volumes due to COVID-19, as well as strong supply from good quality yields. This continues to drive Australian farmers to be even more efficient with inputs and constantly looking at new technologies.

Labour shortages have also been a concern with not enough labour to go around and the ones that are available being able to pick their favourite or best paying jobs with many growers in our area forced to pay way above award wages just to keep them on farm.

On a brighter note the office is running well and continuing to bid for projects that will help all growers across Australia. A new strategic plan is almost complete with a focus on developing an export strategy to help Australian growers connect with key overseas markets.

Also, as I write this our Fusarium project has gone out to tender. This has been a project on the minds of all members of the OA Executive

Committee for quite some time as it benefits all growers to some degree either for now and/or possibly in the future.

Another important project Onions Australia has been busy doing is developing a Crisis Risk Management Plan to combat any crisis that may arise in the entire chain from growing and transport all the way to point of sale. What do we need this for you may ask? Think needles in strawberries and you get the picture. Make sure you have a read when it comes out later this year.

And finally, by the time you read this we should be beginning to see the start of the new season onions coming in from Queensland. Let's hope it's the start of a profitable, safe and successful season.



PETE SHADBOLT
Chair OA



FROM THE OFFICE

Funnily enough, I thought 2020 was a pretty tough year.

But it feels like 2021 watched what had been happening and said "here, hold my beer".

There's no doubt that this year has been the year of cancellations. Cancelled holidays, cancelled meetings and just generally cancelled plans.

Much of this year has seen me sitting in front of a computer screen, using Teams or Zoom to attend virtual meetings in a bid to make life seem normal in a COVID-19 impacted world.

One thing is for sure, my family has seen more of me this year than they have for the past decade, so it's not all bad from my perspective.

I'm not one to dwell on the negatives in life, instead I try to find the silver lining.

While life has been tough in the onion world, there have been some upsidés.

Prices have not set the world on fire, they've bobbed along, despite the domestic oversupply caused by the heavy restriction in export availability.

There's no doubt the closure of the hospitality trade had a huge impact on some sections of society. It has been incredibly tough to watch businesses struggle, and even fold, due to restrictions, and those ripple effects spread far and wide into the food industry.

While it seems ever so slowly we are coming out of this global pandemic, it's almost a three steps forward, one step backwards scenario.

One of our forward steps includes aiming to hold a face-to-face meeting of Onion Australia (OA) this year.

While the OA Executive Committee decided not to attend Hort Connections in Brisbane earlier this year, members were determined to push ahead with gathering before the end of 2021.

It will be nice to have everyone together and see faces we haven't seen since before the pandemic took hold.

There is a light at the end of the tunnel, with projects starting to come on line to address several issues within the industry.

Work is well under way on a crisis risk management plan for the onion industry, which will arm us as both an Executive Committee and an industry as a whole in the unfortunate instance of any negative occurrence.

OA has been working hand in glove with consultants Porter Novelli to develop the comprehensive plan to safeguard our growers.

Another positive to arise this year is the development of our industry's export strategy, which has been a long time coming.

OA has been pushing for such a strategy for several years, with the project coming to fruition.

We believe that our onion growers know how to grow the best onions in the world, and we now need to turn our attention to growing our international market access.

We hope this strategy will help to grow our overseas reach in a bid to supply more onions to the world, in turn increasing profitability for growers both domestically and internationally, and avoiding domestic oversupply in the future.

Work is also progressing on one of my personal passions, educating consumers about the health and nutrition benefits associated with onions.

For much of my 11 years working in the onion industry I have been



LECHELLE EARL
CEO OA

banging on about the need to educate consumers as to just how good onions are for you.

The motto in our household is to "make food your medicine" and I firmly believe that there are so many health benefits, predominantly gut health, that come from eating onions.

In today's society, much is made of the importance of gut health and the impact that can have on mental health.

It is so exciting to see this project finally getting off the ground and I can't wait to see our industry spread the message about the benefits of eating onions.

With that in mind I wish you a happy harvest.

May your yields be high, and your prices higher!

In coming to a close, I would like to genuinely thank all of our key strategic partners whose support has ensured the OA office remains open. I would also like to thank the OA Executive Committee for their hard work and dedication during a tough year.

FIGHTING ONION WHITE ROT

Onion white rot (OWR), *Sclerotium cepivorum*, is a soilborne disease which only infects allium crops.

OWR significantly impacts the production of onions, shallots, spring onions, garlic and leeks in south-east Queensland. Some producers have been forced to relocate elsewhere to find pathogen-free soil or tolerate the risk of crop losses during known infection periods.

THE PATHOGEN: SYMPTOMS AND CONDITIONS

OWR severely affects the winter production of shallots and onions in the Lockyer Valley, preferring temperatures between 10°C and 21°C for germination in the presence of a suitable host plant.

Infection can occur at any growth stage of the plant, but it is usually first visible on older plants, characterised by the yellowing of the leaves, starting from the tip and progressing downwards, causing wilting and later, dieback.

When above-ground symptoms are evident, OWR has already colonised the roots, bulb and leaf sheaths. White fungal growth is often visible at the soil line and is a sign of root decay. When harvested, the bulb shows white fluffy growth, often at its base, a sign of advanced rotting. Tiny black roundish specks can be seen amidst the white mould. The main roots are gradually destroyed and may be missing. Secondary roots may develop and extend horizontally, providing a direct path for the contamination of other plants.

Plants can decline over a period of days to weeks which is why the symptoms appear in clusters in the field. The pathogen persists as small, dormant structures (sclerotia) in the soil.



Sclerotia can remain dormant in the absence of a suitable host (garlic, onion, or other allium crops), and survive in the soil for up to 20 years. It can spread throughout a field, or from field to field, via flood water, soil on machinery or boots, or plant material such as wind-blown scales/leaves. Farm hygiene and biosecurity protocols are critical to minimising spread.

Substances secreted by allium roots, which may seep 12mm into the soil from the root, stimulate germination of the sclerotia which then infect and colonise nearby roots.

TRIAL

During the 2020 growing season, a trial was conducted to investigate the potential of using allium waste products (shallots, garlic and onions) to reduce infection levels by OWR. The aim was to assess whether the application of allium waste material to the soil could stimulate the germination of OWR sclerotes in the absence of a host crop, and without this host, result in death of the pathogen with lower levels of OWR infection in subsequent crops. The research involved a pot trial during the cooler months of the year when the disease was most active.

Control pots included a soil with no history of OWR or allium production plus an additional control where 10 OWR sclerotes had been added to the soil. All treatment pots also had 10 OWR sclerotes added to each

pot. The allium waste products and biofumigant plant material were applied and shallots planted five weeks after application. Allium waste products included a garlic powder and shallot powder from dried and ground garlic and shallot, respectively applied at the equivalent of 1t/ha and shallot cold press extracts, sieved and unsieved with two different application rates equivalent to 100L/ha and 1000L/ha. Shallot extract treatments involved three applications a week apart. A brassica biofumigant treatment was also included in the trial.

RESULTS

The trial was successful in using a cold press to generate a liquid extract from the shallot waste material. The most effective of these extracts reduced infection levels to 20 per cent of plants or a 55 per cent reduction of the infection levels seen in the control+OWR pots.

Drying the shallot waste and grinding it into a fine powder also resulted in reduced infection, with 15 per cent of plants showing infection or a reduction of 66 per cent compared with control+OWR infection levels.

A garlic powder was also very effective at controlling OWR with five per cent of plants infected or a 89 per cent reduction compared with the control+OWR.

The use of a brassica biofumigant was the most effective, resulting in no plants showing OWR infection or a 100 per cent reduction in infection compared with the control+OWR.

Pythium can also be an issue for growers with local species of this soilborne pathogen present in most soils. Up to 55 per cent of seedlings planted became infected with this pathogen with some treatments giving good control.

Garlic and shallot powder were a success with zero per cent and five per cent infection respectively and the brassica biofumigant BQ Mulch with five per cent infection of seedlings.

BENEFITS TO INDUSTRY

The key finding from this small pot study was that some plant-based options can reduce infection levels of shallots by OWR. The use of a powdered form of shallot waste resulted in a significant level of control as did the garlic powder. However, the biofumigant crop—in this case BQ Mulch—was the most effective at reducing OWR infection. However, given commercial fields with OWR would have a level of dormant OWR sclerotes in the soil, biofumigation combined with the application of allium waste products, could be most effective in reducing OWR infection levels. The allium waste would be necessary to break dormancy of sclerotes in the soil and stimulate germination before the biofumigant could suppress the actively grown pathogen.

Larger scale assessments are required as is a cost-benefit analysis. The analysis should consider the cost of processing waste material, the feasibility of producing enough powder to treat cropping areas, how the powder will be incorporated into the soil or how unsieved extracts could be applied, and potential disease reduction levels.

This work was funded by the Queensland Government. For more information contact John Duff, Plant Protectionist, Queensland Department of Agriculture and Fisheries on john.duff@daf.qld.gov.au or 0418 726 597.

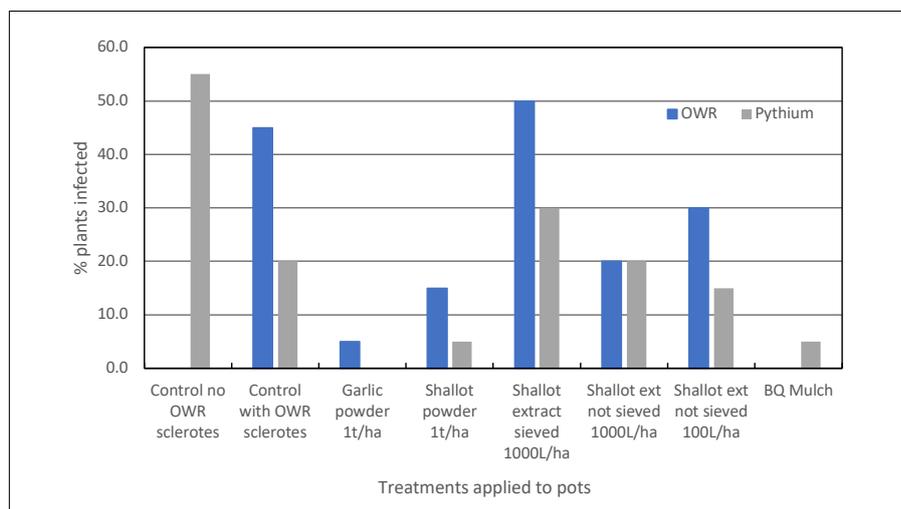


Figure 1. OWR and Pythium incidence in plants grown in pots treated with various allium waste products and BQ Mulch, compared with control treatments.

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ONIONS STRATEGIC INVESTMENT PLAN 2022-26

Hort Innovation is refreshing the roadmaps that will guide each industry's strategic levy investment over the next five years, including the onions industry.

UPDATE ON THE STRATEGIC INVESTMENT PLAN

The feedback period for draft Strategic Investment Plans (SIPs) has now closed for all industries except for the vegetable industry.

Hort Innovation has received a wide range of both positive and constructive feedback and is in the process of incorporating this into the final versions of the SIPs. For some industries, more consultation needs to be done to ensure the needs of these industries are reflected in the final SIPs.

Hort Innovation thanks all people who have provided feedback and who have been involved in the consultation process so far.

The SIPs will be published on the Hort Innovation website as they are finalised, and stakeholders will be notified via email and other communication channels.

The draft onions SIP is still in the consultation and development phase and will be published on Hort Innovation's website www.horticulture.com.au/sip-refresh, calling for stakeholder feedback soon.

If you would like to discuss the onions SIP, contact **Mark Spees**, Industry Strategic Partner at Hort Innovation on **0439 574 173** or email **Mark.Spees@horticulture.com.au**.

THE STRATEGIC INVESTMENT PLAN REFRESH PROCESS

During 2021, Hort Innovation has engaged with growers and industry stakeholders to develop a refreshed SIP for each levy-paying industry within the horticulture sector. Each refreshed SIP will lay the foundation for decision-making in levy investments, representing a balanced view of stakeholders from within the industry. The SIPs will also help Hort Innovation prioritise and implement relevant R&D, marketing and export needs over the next five years.

The refreshed SIPs will provide the investment roadmap for horticulture that will contribute to the sustainable growth of the sector. These plans have been built from the foundations of the current SIPs and will:

- Be harmonised across industries to identify opportunities for multi-industry investments across categories of supply, demand and extension to drive efficiencies in investment management.
- Instil commercial focus, appropriate measurement, evaluation and foundational investments to return benefit cost ratios of 4:1 across all funds.
- Be informed through existing data, knowledge, regional stakeholder and grower networks, establishing broad industry support and relevancy of investment opportunities.
- Draw upon international linkages and networks to ensure alignment, investment currency and leverage to mitigate duplication and maximise collaborations.
- Embed sustainability principles to demonstrate commitment to underpin sector growth of \$20 billion by 2030.

Each SIP articulates how strategies contribute to outcomes and broader industry goals. The refreshed SIPs will instil a heightened degree of accountability across delivery partners in future investments.

Finally, to ensure consistency across all 37 levied industries, each SIP has four key outcome areas which are relevant to all industries:

- Demand creation
- Industry supply, productivity and sustainability
- Extension and capability
- Business insights

ABOUT ANNUAL INVESTMENT PLANS

Whilst each industry's refreshed SIP will provide the strategic oversight of investment over the next five years, its Annual Investment Plan (AIP) will detail how levy funds will be invested over a 12-month period.

The AIPs for 2021/22 are currently being developed by Hort Innovation. The development is being informed by the SIP and industry consultation. They will then be discussed with each industry's Strategic Investment Advisory Panel for feedback and prioritisation.

All investments will need to link to the industry's SIP by addressing a minimum of one KPI against a strategy under one of the four outcomes.

Hort Innovation will continue to report on fund performance regularly, with more focus on reporting on outcomes and the impact of investments.

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Peloton

- Mid - intermediate maturity
- High yield potential and excellent uniformity
- Golden brown skins that colour early
- Excellent globe shape with good bolting tolerance.



Trekker

- Extra firm bulbs with good early, dark skin colour development
- Highly uniform globe shaped bulbs with excellent yield potential
- Good bolt tolerance
- Strong vigour and uniform top fall
- Partial resistance to Basal Rot and Neck Rot
- Intermediate storage type, best suited to sowing late August – mid Sept in southern states.



Pendarves

- Early over-Wintering type
- Very strong bolt tolerance
- High yielding; bulbs late in the cycle
- High globe to slight grano in shape
- Very good skin retention
- Mid brown in colour
- Fresh market type
- Sow late April to mid-May in Southern regions.



Overlander

- Mid - intermediate variety with exceptional bulb quality
- Bulbs are firm, globe shaped with very dark glossy brown colour
- Excellent skin retention, highly single centred and very uniform
- Very high percentage of first grade pack outs.



Rubillion

- Early long day red with very long storage potential
- High yielding and extremely uniform globe shape
- Glossy, attractive red skins with good retention
- Highly single centred
- Adaptable with good anti bronzing characteristics.

Terranova
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ONION INDUSTRY EXPORT STRATEGY

The Hort Innovation levy funded project VN20003 was completed by strategic planning consultancy McKinna et al.

The Onion Industry Export Strategy (VN20003) provides the Australian onion industry with a strategic five-year export plan from 2022-2026.

The purpose of the project is to have a well-informed onion industry with a strategic road map to guide the industry's export development investment decisions that will ultimately result in greater export success.

The Export Strategy was developed after a stage of detailed market and competitor analysis (reported separately in a comprehensive Market Mapping Report). The methodology also included consultation and a workshop with the leading onion exporters and marketers. The project has resulted in:

1. a clear understanding of which export markets offer growth opportunities and
2. industry consensus on export development and growth priority activities and investments.

The Export Strategy recognises that the global market for onions is highly competitive and dominated by India and China, who set price expectations in many of the markets in which Australia competes. Therefore, Australian exporters must compete on the basis of premium quality and product integrity.

New Zealand is the leader in the southern hemisphere seasonal window competing head-to-head with Australia and having a similar season to Tasmania. New Zealand's industry is highly focused on exporting with 85 per

cent of its production exported, totalling 200,000 tonnes of export onion trade (source:www.rnz.co.nz), compared to Australia's 40,000 tonnes.

It is estimated that there are fewer than 10 major grower/exporters in Australia that produce the bulk of Australia's export onions. Tasmania, South Australia and Western Australia are producing 97 per cent of the export volume. Tasmanian onions account for 52 per cent of the total export trade.

Although around 15 per cent of Australia's onion volume is exported, it used to be a much higher proportion of total production.

Brei Montgomery, Head of International Trade at Hort Innovation, says a strong business case can be made for the onion industry to invest a greater share of its limited levy funds on export market development, because the whole industry benefits when exports are a greater share of total production and there are fewer incidents of oversupply on the domestic market.

"Characteristically, in good production seasons the pricing in central markets drops significantly," she said.

"The folklore is that 'a 10 per cent oversupply results in a 50 per cent drop in market prices'.

"The strategy outlines target markets and activities that can be undertaken by the onion industry to ramp up its export volumes and provide a greater return to growers.

"This involves really understanding market preferences (varieties, size, etc.), focusing on product integrity and cold chain management, and shifting from opportunistic trading to programmed supply," Ms Montgomery said.

Copies of both the Market Mapping Report and Export Strategy are available to onion growers and related supply chain members by contacting Onions Australia or Hort Innovation.



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options that
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NEW PROJECTS FOR THE ONION INDUSTRY

A number of new projects have been contracted by Hort Innovation to assist the onion industry with new research, education and risk management strategies.

VN20008: Onion-specific Phenomenom resource creation

Delivered by Edible Adventures Productions, the aim of this project is to further educate school-aged children about Australian onions, especially their nutritional benefits in order to overcome the many barriers to consumption.

The scope of this project includes onion-specific materials uncovering new research demonstrating the link between soil health and gut health, and umami and satiety for primary and lower secondary year levels. This will be achieved through the creation of three new animated podcast episodes and will be supported with downloadable resources, and an animation.

Research into the impact of Phenomenom concludes that through Phenomenom, Hort Innovation has generated an effective, widely adopted program that will increase the consumption of vegetables by children aged 8 to 12 years with a benefit-cost ratio of 3.30 (MT18011). Using the success of the Phenomenom methodology and brand, the intended outcomes of this project are to further contribute to a change in children's attitudes and their influencers' attitudes towards Australian onions, and positively shape the next generation of consumers.

VN20001: Risk and crisis management planning for the onion industry

Reputation is critical to any organisation or industry. It can be damaged or lost rapidly and must be protected continuously. Any industry body must be equipped to respond to issues.

With this context, Hort Innovation and Onions Australia have engaged communications specialists Porter Novelli to support risk and crisis management planning for the onion industry.

The overarching goal is to protect and enhance the reputation of the Australian onion industry by ensuring the industry is equipped and ready to confidently respond to an issue in a planned, coordinated and unified manner.

The program will identify key risks facing the industry and the pre-emptive measures and mitigation strategies to help reduce the risk of a crisis occurring. Porter Novelli will also provide practical steps required to manage any issue – small or large – and provide training to key industry spokespeople.

This program commenced in June 2021 and activities will span until October 2022. Over the coming months, Porter Novelli will work with Onions Australia and the broader industry to conduct research, planning and training.

If you believe something is happening on your farm that has potential to damage reputation, you are encouraged to call Onions Australia for support. Issues relating to food safety, environment or sustainability, product quality or workforce are all areas with potential to impact the industry.

This expertise is available to support farmers and the industry. If you require further advice, please contact Lechelle Earl, CEO of Onions Australia at lechelle@onionsaustralia.org.au

VN20007: Optimising chemical and cultural control of onion white rot

Onion white rot (*Stromatinia cepivora* syn. *Sclerotium cepivorum*) is a highly destructive fungal disease of onion crops. It can infect onion roots, kill seedlings, cause root rot and affect marketability and storage of onion bulbs. The disease is widespread across Tasmania's coastal production areas, forcing producers to move to less productive in-land regions. Once established, the fungus can persist in the soil for many years, making it nearly impossible to eradicate.

Tasmanian onion growers are facing major constraints in onion production for export as disease pressure increases, as current fungicide control strategies are not effective when disease pressure is too high. The development of a more effective integrated disease management strategy for white rot control is urgently required by the industry.

VN20007 will be led by Arvensis Research and will focus on the development of effective integrated disease management strategies. This project aims to develop a pre-plant PCR test in collaboration with South Australian Research and Development Institute (SARDI), to determine disease levels before sowing. Various management strategies will be developed for use by growers, depending on disease pressure in soil. Under low to medium pressure, the project aims to provide a range of treatment options and to improve their delivery methods for optimum disease control in soil. Under high disease pressure, various potential sclerotia germination stimulants will be evaluated for use to reduce disease pressure prior to sowing of onions.

This project has been funded by Hort Innovation, using the onion research and development levy and contributions from the Australian Government.

VN20006: Epidemiology and management of Fusarium basal rot in onions

Fusarium basal rot has become a disease of increasing importance in South Australia. Infection of bulbs that occurs in the field has resulted in substantive losses in storage from this soilborne disease, with incidence of up to 30 per cent in paddocks in some years.

This project aims to reduce the impact of Fusarium basal rot on the Australian onion industry, particularly in South Australia where it is most damaging. To achieve this aim, the primary action will be to develop a best practice cost effective integrated pest and disease management (IPDM) strategy. This will involve:

- improved understanding of the pathogen and drivers of disease development.
- evaluation of existing and new chemical, bio-stimulant, biological and cultural controls and refinement of associated rates/methods.
- development of a disease risk-based decision model for management.

Despite the importance of Fusarium basal rot, our understanding of which Fusarium species contribute to disease is incomplete. In addition, other drivers of disease, including conducive environmental conditions and cultural practices are not well characterised. This limits capability to develop an IPDM strategy. To formulate a cost-effective strategy the epidemiology of Fusarium basal rot in South Australia will be determined, and cultural, chemical, bio-stimulant and biological management options evaluated.

If you are interested in discussing the project and how you can be involved contact Michael Rettke at the SARDI on 0401 122 124 or email michael.rettke@sa.gov.au

SAMPLES REQUESTED - KNOWING THE ENEMY IS CRITICAL TO WIN THE BATTLE

Growers who have experienced problems with Fusarium basal rot are encouraged to make contact to discuss their experiences with the disease and submit samples for identification. This will inform trials to be conducted within the regions most impacted by Fusarium basal rot, with growers able to observe trial outcomes in the context of their production systems. Samples are required to isolate the causal Fusariums.

Fusarium oxysporum f sp cepae is suspected as the main causal agent of fusarium basal rot (FBR) in Australia. Other species, including F. proliferatum and F. redolens have also been associated with Fusarium basal rot and both these species are known to be present in South Australia. What is effective to manage one Fusarium sp. may not be effective for another.

VN20002: Onion nutrition education program for health professionals and the food service industry

This investment is delivering evidence-based information about the health benefits of Australian onions to health and food service professionals in Australia.

Delivered by Bite Communications, the project aims to educate health and food service industry professionals about the health benefits and culinary uses of Australian onions through an engagement and extension program informed by credible science.

The project will increase health professional knowledge about the

role of onions in disease prevention and management, as well as increase food industry knowledge about the role of onions as an important component of a healthy diet. It aims to showcase the unique value proposition of onions by supporting health and wellness, particularly as consumers become more interested in gut health and foods that play a key role in supporting immunity.

This project will build upon Hort Innovation and industry's science-based onion digital platform housing research and resources so it can be shared with health and food service professional stakeholders.



BIOLOGICAL SERVICES



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iMapPESTS: A CROSS-INDUSTRY PLANT PEST SURVEILLANCE NETWORK

Pest and disease incursions cost the horticulture industry millions each year in damaged crops, making a plan of action to monitor pest levels integral to ensuring business profitability and productivity.

iMapPESTS is led by Hort Innovation, and funded by the Australian Government Department of Agriculture, Water and the Environment as part of its Rural R&D for Profit program, with contributions from 17 partner organisations including Plant Health Australia.

iMapPESTS monitors airborne pests and diseases to aid on farm pest management decision making through mobile surveillance units called 'sentinels', which incorporate a number of smart trapping devices. Equipped with a power supply, climate sensors, telemetry & unit remote control, it analyses data and runs molecular diagnostic tests to rapidly detect incursions.

A recent trial in the Adelaide Hills, South Australia looked at the effect of Onion Thrips and successfully tracked pest levels to give farmers insight into pest management.

A five-year program has started to lay the foundations for a national cross-industry surveillance system that can rapidly monitor and report the presence of airborne pests and diseases that affect the agricultural sector. This is hoped to be achieved through surveillance, diagnostics and engagement and adoption activities.



iMapPESTS could potentially enhance pest management decision making by providing recent data on high priority, cross-sectoral pest and disease abundance and spread, potentially improving profitability, and improving crop yields.

This information could be crucial in guiding industry and stakeholders, leading the direction or intensity of scouting and pest control efforts. iMapPESTS could facilitate a co-ordinated response to biosecurity pest and disease incursions if implemented country wide.

Register to find out more on the iMapPESTS website.



HOW TRICAL HAS HELPED ONION GROWERS



Case study results from TriCal's innovative approach to soil health fumigation and biologicals.

Western Australia

TriCal Australia knew it could help solve yield problems on an onion farm in Myalup, WA. Soil health was deteriorating, with higher rates of Pink Root, Rhizoctonia, Fusarium, Verticillium wilts, Sclerotinia, Pythium and parasitic nematodes all being detected in soil DNA tests. Not surprisingly, this was having a profound impact on the produce harvested on the farm.

In a short amount of time, a unique trial was designed with two aims:

1. Explore the extent to which soil fumigation and soil biological products complement each other.
2. Assess the economic benefits of a two-crop cycle, specifically onions followed by potatoes.

Trial Results

The farm manager's attention to detail throughout the trial made the crop an outstanding success. Soil tests were done before and after fumigation by TriCal's Agronomist. The results helped to prescribe the necessary products and fumigation rates, and demonstrate to the grower the reduction pathogen levels.

The results were that soil fungal diseases, specifically Pink Root, were very well suppressed, allowing for a great improvement in yields.

Variety	Delgado (Brown)	Redwing (Red)
Yield - No Fumigation	106 mt/ha	104 mt/ha
Yield - Fumigation	153 mt/ha	128 mt/ha

South Australia

TriCal Australia fumigated a 20ha trial in the Murray Bridge area where a grower's yield was suffering due to Pink Root in older cropped onion soils. The soil was fumigated and two weeks later the variety Redwing was planted on half of a centre pivot. The other half was not fumigated and sown to Redwing.

Trial Results

Pink Root was suppressed by the fumigation treatment and tracked using SARDI's DNA diagnostic soil tests. The unfumigated crop was severely infected with Pink Root and yields suffered with a 20mt/ha reduction to record 70mt/ha. The fumigated crop yielded 90mt/ha.

The quality of the fumigated onions was higher and kept their quality after storage.

The grower maximised the benefits of the onion fumigation by following up planting a seed potato crop.



HIGH PRIORITY ONION PESTS

Earlier this year RMCG hosted a webinar that focused on emerging and established pests.

Within the webinar, three key pests were identified as high priority for the onion industry: the vegetable leafminer, the serpentine leafminer and fall armyworm. These pests are now classed as non-eradicable.

Below is a summary of the pests covered in RMCG's webinar, which was delivered by Dr Doris Blaesing, from RMCG and presented by Callum Fletcher, Biosecurity Coordinator from AUSVEG.

THE VEGETABLE LEAFMINER

Scientific name: *Liriomyza sativae*

About: The vegetable leafminer (VLM), a native of the Americas, has spread to most parts of the world. It has established in the Torres Strait region and recently spread to Cape York in far north Queensland in 2015, where it is under government monitoring to contain it.

Features: VLM are about 1-2mm long with a small, dark body. They have areas of bright yellow cuticle on their head, upper body and abdomen. VLM don't often fly far, and in crops showing active mining, many flies may be seen walking rapidly over the leaves with only short jerky flights to adjacent leaves.



Liriomyza sativae by Pest and Diseases Image Library, Bugwood.org

Found: Currently present in Australia in the Torres Strait and Northern Cape York region.

Lifecycle: Eggs are laid just beneath the leaf or stem surface and hatch about three days later. The larvae then tunnel or 'mine', through the leaf, feeding on green material under the leaf surface for one to two weeks. Larvae emerge from the leaf before forming a pupae in the soil. Pupae hatch into adults in one to two weeks.

Monitoring: Mines are usually white when new with moist black and dried brown areas as they age. They are typically snake-like and tightly coiled. In larger leaves, the mines often form an irregular 'U' shape. The frass is deposited in black strips alternately at either side of the mine.

Damage: Egg laying from adult females can cause a stippled appearance on leaves. Major damage is caused by the larvae leaf mining, causing thick, white spirals from tunnelling. Leafmining of photosynthetic tissue disrupts ability and when too many mines are created a plant may drop leaves and die. Damage to the plant tissue may mean that it is also more prone to fungal infections.

Control Methods: Using sticky traps is another useful way to monitor leafminer populations, because they attract adult leafminers and may give an indication of when leafminer flies are moving into the crop. Pupa trays identify whether active fly populations are present around leaf mines – these are also an important and easy-to-use monitoring tool.

The most effective natural control of leafminer is parasitoid wasps. Australia has at least 50 species of parasitoid wasps that attack native leafminer flies, and many are known to attack exotic leafminers overseas. If exotic leafminers establish in Australian

production regions, they should be managed using an integrated pest management approach, which will allow parasitoid wasp populations to build up.



Liriomyza huidobrensis Central Science Laboratory, Harpenden, British Crown, Bugwood.org

THE SERPENTINE LEAFMINER

Scientific Name: *Liriomyza huidobrensis*

About: The serpentine leafminer (SLM) is an exotic leafminer species that poses a significant economic threat to Australia's onion industry. It was recently detected in Western Sydney, NSW and South-Eastern Queensland in 2020.

Features: SLM adult flies are about 2mm long and are easily distinguished from beanfly and soybean stemfly by the yellow patch between the base of their wings, and their yellow face and underbody (bean fly and stem fly adults are mostly black). SLM is wind borne and its eggs, larvae and pupae can be spread through the movement of plant material, soil, clothing and equipment.

Found: In Western Sydney in NSW and Kalbar in the Fassifern Valley and surrounding regions of Queensland.

Lifecycle: Four stages including: egg, larval, pupal and adult stage. Many generations can be produced in one year.

Monitoring: The distinctive leaf mines should give early warning of

pest presence. Adult flies can be monitored with sweep nets or sticky traps. Also look for SLM activity in earlier-planted crop hosts and nearby fields.

Damage: Damage is primarily caused by larvae feeding under the surface of leaves. Typically, this feeding causes long, narrow, serpentine-shaped 'mines' which appear as white or grey lines on leaves with dampened black and dried brown areas. High levels of infestation affect the plant's ability to photosynthesise, reducing plant growth and crop yields. Damage to the plant tissue may mean that it is also more prone to fungal infections.

Control Methods: SLM is most damaging when beneficial parasitoids are removed due to the use of non-selective insecticides (Cesar Australia 2018; Murphy and LaSalle 1999). For the ongoing management of leafminers it is important that chemicals are selected that are reasonably selective and have low toxicity towards key beneficial parasitoids.

FALL ARMYWORM

Scientific name: *Spodoptera frugiperda*

About: The fall armyworm (FAW) is a destructive exotic moth. It attacks more than 350 plant species in several families, including onions.

Features: FAW can look similar to other armyworms already in Australia. However, a good way to differentiate FAW from other armyworms is to look at the larvae. A FAW larva has four dark spots towards the end of its abdomen, arranged in a square. Eggs cluster together in groups of 100-200 on the underside of a leaf, encased in a silky, furry substance.

Found: A pest native to tropical and sub-tropical regions of the Americas. In 2016, it was found in West Africa. Since then, it has spread to sub-Saharan Africa and several countries across Asia, including China, India, Bangladesh, Sri Lanka, Thailand and Indonesia.



Spodoptera frugiperda by Russ Ottens, University of Georgia, Bugwood.org

It was first detected in Australia in 2020.

Lifecycle: The FAW life cycle is completed within 23-27 days and has an egg stage, five to six caterpillar (larval) stages, a pupal stage and an adult moth stage. The larval life cycle stages cause widespread damage to onion leaves through feeding.

Monitoring: If you find damage symptoms, carefully examine onions for larger fall armyworm larvae as they often produce similar symptoms on leaves to those caused by other caterpillars and chewing insects.

Damage: FAW causes damage by consuming onion leaves and attacking onion shoots. Distinctive damage includes pinholes, windowing, tattering or complete defoliation. Overseas, packs of FAW have stripped entire fields and cost industries millions.

Visit the Department of Primary Industries website and Plant Health website for more information on exotic pests.



Spodoptera frugiperda by Lyle Buss, University of Florida, Bugwood.org



AUSTRALIAN ONIONS MARKETING SUMMARY FOR 2020-21

Hort Innovation is responsible for investing the onion marketing levy into a range of activities to drive awareness and consumption of onions on behalf of all levy-paying growers, under the Hort Innovation Onion Fund.

In FY21, the marketing levy was efficiently invested to encourage demand through a range of channels and projects, including PR activity, social media activity, website management, participation in The Good Mood Food campaign and retailer engagement.

STRATEGIC APPROACH

The campaign aimed to increase the frequency of purchase of Australian onions in families with parents aged between 25 and 54 years, and children under 17 years in the household. The strategic pillars to achieve this were:

- 1. Inspire:** Inspiring content which encourages families to use onions more frequently and/or in greater amounts.
- 2. Remind:** Reminders to keep Australian onions top of mind, by reaching the target audience frequently through social media, earned media and influencers.
- 3. Educate:** Ensure the target audience know the true benefits of Australian onions (including health benefits) and best ways to prepare and store them at home.

PR AND SOCIAL MEDIA

Recipe Development

Seventeen onion recipes were developed in written and video format under themes which bring to life the unique selling points of onions. This included recipes that are on-trend (i.e., plant-based),

healthy, family favourites, quick (under 15 minutes), use pantry staples and are budget-friendly.

These recipes were used across the campaign and resonated with families and consumers visiting the Australian Onions website (australianonions.com.au) for recipes such as Onion Shakshuka and Onion, Pumpkin & Cannellini Pie.

Social Media

Australian onion recipe inspiration was shared through Instagram (www.instagram.com/aussieonions) and Facebook (www.facebook.com/australianonions) channels, and supported by paid advertising. Social media users were further engaged through a competition to win a Ninja Food Multi Cooker by creating dishes with Australian onions. This rewarded fans and helped drive love of Australian onions.

By posting twice a week and boosting the social media posts on both Instagram and Facebook, the channels achieved an average engagement rate of 16 per cent and 7 per cent, and 1.4 million and 553K impressions, respectively. With a focus on community management (responding to comments and questions on the platform) the Australian Onions messaging effectively reached consumers through Instagram (most reached was the 25-44 years age group) and Facebook (most reached was the 34-54 age group).

The social media competition received 115 entries across the two social platforms, resulting in more user-generated content and online discussion about onions. This activity also provided insights into the types of most-loved onion dishes (e.g., onion tarts, onions on burgers, crispy onion rings, sausage sizzle with onion, onion soup).

PR Influencers

Australian Onions collaborated

with popular, relatable and trusted cooks to increase media appeal, as well as appeal to families. The influencers delivered both Australian Onions messaging and exciting new takes on onion recipes.

The influencers secured were Simon Toohey (MasterChef grand finalist and vegetable advocate, (@[simon.toohey](https://www.instagram.com/simon.toohey))), Helen Tzouganatos (gluten free cook book author and television presenter, @[helentzouganatos](https://www.instagram.com/helentzouganatos)), and Cherie Tu (plant-based recipe developer, @[thrivingonplants](https://www.instagram.com/thrivingonplants)). With a combined following of 500K people, the influencer activity resulted in 1.6 million opportunities to see.

The influencers promoted their onion recipes through their social media channels, directing them to the Australian Onions website. Two of the influencer recipes, roast onion dal with tempered onion and cumin, and double vegan "beef" burger with spicy onion rings, were particularly successful, being two of the top traffic drivers to the website. This demonstrates the recipes resonated with fans and encouraged them to see how they could easily cook more often with Australian onions.

Media Hampers

To amplify messaging, media pitching began by reaching out to top-tier media and key food influencers with Australian onion hampers. These hampers aimed to surprise and delight media



influencers and included premade Australian onion relish, fresh bread, all the ingredients to make their own and a media kit with new Australian onion recipes.

The media hamper outreach delivered total opportunities to see over 5.6 million, from the resulting social media activity and media articles. For example, off the back of the hamper send outs, an article was posted in the Daily Mail Australia.

Media Relations Results

The new recipe content (owned and influencer-led) and media hampers delivered high-impact, earned media coverage. The two bursts of media outreach resulted in 37 pieces of coverage across traditional and social media, resulting in a total of 11.5 million opportunities to see.

The key messages that were picked up and amplified by media were taste, followed by versatility, and lastly health. The media KPI of reaching at least 70 per cent coverage in top-tier media was achieved, with 82 per cent of coverage reached in top-tier

media such as Daily Mail Australia, Westfield Online and Kidspot Australia.

THE GOOD MOOD FOOD PARTICIPATION

The Good Mood Food was a new cross-horticulture behaviour change campaign promoting the mood boosting benefits of Aussie fruit, vegetables, and nuts. As a direct-to-consumer marketing initiative, it was supported nationally by a range of channels, including TV, OOH, print, radio, digital and social media.

Australian onions participated in the Good Mood Food campaign in FY21, to leverage the efficiencies of the campaign to reach more Australians. Australian onions were featured in their own animated videos (15 and six second videos), advertised through YouTube, Facebook, Instagram, and catch-up TV channels. The catch-up TV channels included 7Plus and 10Play.

There were a number of highlights from the Good Mood Food campaign:

- The overall campaign reached 20.3 million Australians (96 per

cent of the population) at least 13 times

- The campaign drove more than 79,000 users to The Good Mood Food website
- The campaign delivered \$18.6 million in media value (632 per cent ROI)
- Two in three consumers claim they want to buy more Australian fruit, vegetables and/or nuts after seeing the Good Mood Food campaign (vs industry norm of 52 per cent. Source: FiftyFive5 consumer and brand tracking research, 2020).

Also, there are now dedicated webpages for Australian onions on the Good Mood Food website, providing nutritional substantiation of why brown, red and white onions are Good Mood Foods: <https://www.thegoodmoodfood.com.au/food/brown/onion/>

RETAILER ENGAGEMENT

Australian onions had a full-page advertisement in the May edition of Coles Magazine. The printed and online magazine is a great way to reach consumers across Australia, with the free magazine reaching 4.4 million readers each month. The advertisement featured an onion breakfast recipe, which communicates the versatility of onions across meal occasions and the health benefits. The magazine advertisement can be viewed online at: <https://www.coles.com.au/magazines/coles-magazine/issue#view=catalogue2&saleId=38658&page=65>

FY22 MARKETING CAMPAIGN

The FY22 marketing campaign is currently in development and will be presented to the Strategic Investment Advisory Panel for their input and advice. The marketing strategy is based on the most recent consumer usage and attitudes research, which can be viewed on the Hort Innovation webpage for project VN20005.



MINOR USE PERMITS

The Hort Innovation Onion Fund supports the submission of applications for new and renewed minor use permits for the industry, as well as data generation activities to support chemical permits and registrations, and strategic agrichemical reviews.

Together these efforts provide industry access to safe, relevant, and effective chemicals for the management of pests, weeds, and diseases.

Below is a list of minor use permits for the onion industry, current as of 8 July 2021.

CURRENT PERMITS

Permit IDS	Description	Date Issued	Expiry Date	Permit Holder
PER13119 Version 5	Diazinon / Onions / Onion thrips (TAS only)	06-Mar-12	31-May-23	Hort Innovation
PER14602 Version 4	Boscalid (Filan), Iprodione (Rovral Aquaflor) & Chlorothalonil (Bravo) / Onion seed & onions / Neck rot (<i>Botrytis alli</i>)	24-Jul-14	30-Sep-23	Australian Onion Industry Association (AOIA) C/Hort Innovation
PER13698 Version 3	Phosphorous acid / Lettuce (leaf and hydroponic), fennel and bulb (Alliums) vegetables – bulb onion, garlic, leek, shallot, spring onion and tree onion / Downy Mildew	01-Oct-12	30-Sep-22	Hort Innovation
PER14773 Version 3	Bentazone-sodium (Basagran) / Onions / Broadleaf weeds	16-Apr-14	31-Jan-23	AOIA C/Hort Innovation
PER80282 Version 3	Alpha-Cypermethrin / Onions / Onion thrips	16-Dec-14	30-Nov-25	Hort Innovation
PER84734 Version 2	Haloxypol (Verdict) / Bulb onions / Storksbill & various weeds	19-Dec-17	31-Dec-24	Hort Innovation
PER84808	Ethofumesate (Tramat) / Bulb onions / Broadleaf and grass weeds as per product label	20-Feb-18	28-Feb-23	AOIA C/Hort Innovation
PER80060 Version 3	Dimethenamid-P (Frontier-P Herbicide) / Bulb onions / Nutgrass / Purple nutsedge (suppression only) WA only	31-Aug-15	31-Jul-21	WA Aust Vegetable Growers Ass
PER81876 Version 3	Abamectin / Vegetable Leafminer (suppression only) / Various vegetables including bulb onions	24-Jun-16	30-Apr-24	Hort Innovation
PER87914	Emergency permit – use and supply of an unregistered agvet chemical Bromoxynil (Nufarm Maya Herbicide) Unregistered / Onions / Broadleaf weeds	22-May-19	31-May-21	AOIA
PER89331	Spinetoram (Success Neo Insecticide) / Bulb onions / Fall armyworm (<i>Spodoptera frugiperda</i>)	23-Mar-20	31-Mar-23	Hort Innovation
PER89293	Methomyl / Bulb onions / Fall armyworm (<i>Spodoptera frugiperda</i>)	10-Apr-20	30-Apr-23	Hort Innovation
PER89185	Flonicamid (Mainman) / Bulb vegetables (onions, shallots, chives, leeks, fennel (bulb) and spring onions) / Suppression only of: onion thrips & western flower thrips	6-Aug-20	31-Aug-23	Hort Innovation
PER89991	Dimethenamid-P (Outlook Herbicide) / Onions / Annual ryegrass	5-Feb-21	28-Feb-24	Hort Innovation

If it's onions and shallots you need,
Magnus Kahl Seeds has you covered.



www.magnuskahl.com | james@magnuskahl.com | emma@magnuskahl.com



For more information, please contact:

Tom Shearer
M: 0417 043 795
E: tom.shearer@elders.com.au

Matt Wetherall
M: 0438 997 155
E: matthew.wetherall@elders.com.au

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Thinking Quality Onions? Think **Terranova** & **Enza Zaden**!

COPPERHEAD Hybrid Brown Onion

Early short day type
Very strong bolting tolerance for its type
Uniformly globe shape with extra skins and firmness for its type
The Blue Green foliage has shown strong tolerance to downy mildew and field tolerance to herbicide applications.



GOBLIN Hybrid Brown Onion

Extremely good early vigour and strong tops
High yields from high proportion of large bulbs with single centres
Colours up early for supply to early domestic markets.



Proven & reliable performers from **ENZA Zaden**.

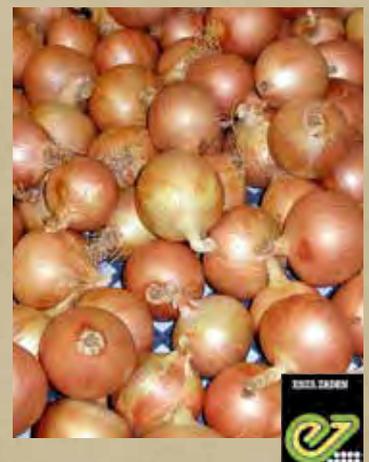
LUCINDA Hybrid Brown Onion

Consistent medium shaped onion with excellent colour
Improved skin retention and storage ability
Ideally sown mid / late May for good yield potential.



PYTHON Hybrid Brown Onion

Uniform globe, medium to large size
Thin necks
Very good storage for an onion in this timeslot.



Sales Orders: Phone: (02) 9616 1288 Fax: (02) 9616 1299. For production guides and cultural notes visit www.terrano vaseeds.com.au

National Sales Manager

Michael Sippel
0418 479 062

Nth Queensland/NT

Shaun Todd
0437 890 920

SE Queensland

Charles Grimes
0429 913 873

New South Wales

Charlie Vella
0419 286 370

Coastal SE QLD/ Nthn NSW/Wide Bay

Burnett Regions
Steven Williams
0407 256 521

South Australia

Greg Bragg
0419 635 548

Victoria

Nick Mitchell
National Product
Development Manager
Dry Seeds
0418 532 650
Henry Nellen
0417 227 873

Western Australia

Danie Oosthuizen
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Tasmania

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SEEDS



Thinking Quality Onions? Think **Terranova** & **Enza Zaden**!

CABERNET Hybrid Red Onion

High yielding, mid maturity red with extremely uniform globe shape
Solid foliar disease resistances, tight necks for fast curing
Highly single centred with early red bulb colour development
Great pack-out potential with medium storage.



OLIVINE Hybrid Brown Onion

Performs well in Murray Brown timeslot
Dark, glossy brown colour with excellent skin
Good vigour with high yield potential
Excellent storage potential.



Proven & reliable performers from **ENZA Zaden**.

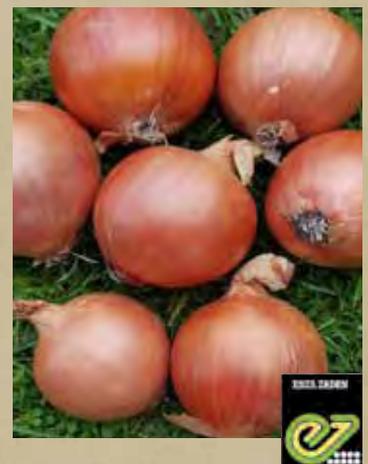
PLUTONUS Hybrid Brown Onion

Excellent dark brown colour
Produces very firm, uniform high globe bulbs
Extremely good storage potential
Foliage is large and vigorous and strong against Mildew
Should be trialed in the late part of the PLK timeslot.



SAMANTHA Hybrid Brown Onion

Uniform medium to large (70-100mm+)
Attractive dark golden brown skins
Excellent bulb firmness
Medium to long term storage
Sow mid September – early October for February – March harvest.



Sales Orders: Phone: (02) 9616 1288 Fax: (02) 9616 1299. For production guides and cultural notes visit www.terranoovaseeds.com.au

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INTEGRATED PEST MANAGEMENT PROJECT PROVIDES INSIGHTS TO ONION GROWERS

BACKGROUND

A research project focusing on integrated pest management (IPM) in the onion growing industry, IPM extension program – onions and potato (MT16009), is in its final year and providing practical insights for growers.

Funded by Hort Innovation and the onion growing and processing industry, the project is led by IPM Technologies Director, Dr Paul Horne.

Dr Horne said the project aims to support growers in adopting IPM on farm, by improving pest management with minimal pesticide use and reducing associated costs to create positive change on farm.

"Though information has been readily available on IPM for several years, grower uptake and general awareness of IPM techniques has been low in the onion industry," Dr Horne said.

"The project has involved creating awareness of IPM through training workshops, commercial crop demonstration sites and the production of materials such as articles, guides and case studies distributed to industry.

"It has also involved training local advisors in IPM, including agronomists, field officers from major processors and major reseller agronomy companies along with local independent advisors," he said.

What is IPM?

Most onion growers have relied heavily on broad spectrum pesticides to manage pests in onion crops. While helping to eradicate pests that attack onions, they can have a damaging impact on beneficial insects.

IPM uses chemical controls as a 'last resort' support tool rather than the main weapon.

To change perceptions of IPM in the onion industry, workshops have been carried out as part of the project to allow for grower learning and engagement. The workshops have connected growers with advisors to assist with awareness and education.

The workshops showcased the three controls implemented in an IPM approach: biological, cultural, and chemical.

1. **Biological:** utilising predatory mites and beetles to kill onion thrips.
2. **Cultural:** increasing organic matter in the furrows to provide a habitat for predatory mites.
3. **Chemical:** utilising selective insecticides.

RESULTS

Earlier this year project leads visited Tasmania, Victoria, and South Australia where onion growers have voluntarily signed up to trial IPM systems on their own farms.

Dr Horne said the project has yielded interesting results across the trial sites.

"Adding a cultural control in sandy areas, such as adding organic matter on soil surface like a layer of mulch, can create a home for predatory mites, beetles and bugs which feed off onion thrips. This is particularly useful in sandy areas like South Australia," Dr Horne said.

"During the trials, we had growers put down straw, chaff or chicken manure in the furrows between the rows of onions which also proved to be a good habitat for these predatory insects.

"When farmers had utilised all three methods for an IPM approach, they were able to remove the use of broad-spectrum pesticides, still killing onion thrips but not killing the insects like beetles that eat them as part of their diet."



Trialling additions of mulch to increase populations of predatory species provided by Dr Paul Horne

All the trails were completed by hand, with the general goal to increase IPM on farms over three years.

GROWER UPTAKE

Throughout the project there has been a positive uptake of IPM processes.

Project leads continue to speak with growers and advisors around Australia. Senior advisors to the onion industry in Tasmania have noted the change in approach to dealing with thrips in onions.

"We've seen the onion industry in Tasmania move away from routine spraying for thrips with synthetic pyrethroid insecticides to a strategic approach where spraying is only warranted where thrip numbers build up due to very dry conditions, or crops with compromised root systems due to disease, or those adjacent to recently harvested crops of pyrethrum where thrips incursions can occur. Healthy crops are rarely affected by thrips," Dr Horne said.

IPM helps Tasmanian growers with sustainability

James and Rebecca Addison grow a range of vegetables, including onions on their family farm in Moriarty, Tasmania, and have been committed to using sustainable production methods for many years. This includes an IPM approach on all their crops, limiting broad-spectrum insecticides as much as possible. As a result, they were interested in conducting trials with help from Dr Horne by using mulches to increase populations of beneficial insect species that help to control onion thrips in red onions. While healthy crops of onions in Tasmania are not often affected by thrips, they can be more of a risk in red onions by causing observable damage to the onion skins.

This project has shown the Addison family that additional cultural controls can sustainably control pests, to further reduce pesticide applications in some seasons.

For the Addisons, the choice to implement IPM came down to sustainability.



Onions and onion bin provided by Rebecca Addison



IPM trail landscape provided by Rebecca Addison

“We want to minimise pesticides as much as possible to encourage natural biodiversity to manage pests, reduce the risk of resistance and minimise chemical residues on our products,” Mrs Addison said.

“The change we have seen on our farm over the years since implementing more IPM has been significant.

“We have considerably reduced our use of insecticides and now know the benefit of using mulches in onions to create habitats for predatory bugs such as mites who eat onion thrips.

“In the past we would spray red onions for thrips at lower population levels but since looking into IPM we have come to understand the feeding habits of the thrips and have increased our tolerance for having some in the crop.

“In healthy non-moisture stressed plants, low populations rarely cause aesthetic bulb damage to effect market quality. Higher populations in some years do need to be sprayed, however we can look at an option in future to viably mulch rows to reduce this need,” she said.

Rebecca’s advice to growers wanting to implement IPM on farm is to find the right support, possibly through IPM Technologies or a local agronomist who understands IPM and is willing to think critically about a different spray schedule.

Additionally, growers within Tasmania have seen massive reductions in the use of broad-spectrum pesticides.

Reducing the use of broad-spectrum pesticides is helping growers to access EU markets through minimising paperwork resulting in easier international trading, along with reducing the possibility of creating pesticide resistance within pests.

“Having as much support as possible makes the transition and implementation of IPM on farm so much easier,” Mrs Addison said.

“Read the findings of previous IPM projects, seek out an agronomist who focuses on IPM and understands how your whole spray program may affect pest levels. It’s about using chemicals to your benefit in a targeted way to assist your crops.

“Once everything is in motion, even a small trial area to gain confidence, it’s worth it seeing the small wins IPM can bring to your farm,” Mrs Addison said.



The project is in its final stage with a final update to be released at the conclusion of the project in December 2021.

HORT CONNECTIONS 2021

Held at the Brisbane Exhibition and Convention Centre on 7-9 June, Hort Connections 2021 was hailed a success by more than 2200 attendees who went along to the event, as well as those who tuned in to watch the speaker sessions online.

A joint initiative between AUSVEG and the Produce Marketing Association Australia-New Zealand (PMA A-NZ), Hort Connections is the premiere event for the horticulture industry, encompassing the vegetable, fruit, cut floral and nursery sectors.

The conference catered to all members of the horticulture industry, from primary producers to retailers and the entire supply chain. It was an opportunity for growers and industry members to come together in one central location to build their knowledge and networks and find new ways to improve the productivity and profitability of their farms and secure the future of the industry.

Celebrating the UN declared International Year of Fruits and Vegetables, the event brought together industry stakeholders to focus on the importance of the horticulture industry and the valuable role fruits and vegetables play in human nutrition, health and global food security.

This year, Onions Australia was once again a proud sponsor of the event, with Hort Innovation a major partner.

The three-day conference featured a trade show with around 200 local and global supply chain partners and presentations from the industry's leading thinkers.

A feature event of Hort Connections 2021 was the National Awards for Excellence Gala Dinner,

which was held on Wednesday, 9 June.

This year, 95 growers, marketers, businesses, researchers and industry representatives were nominated from every sector of Australian horticulture celebrating the significant contributions of the industry and its members.

Former AUSVEG CEO, James Whiteside, said the National Awards for Excellence was an excellent opportunity for the industry to come together and recognise the outstanding achievements of leading growers and industry members.

"It was more important for the industry to meet up and reconnect with each other this year than ever before after the unprecedented challenges over the past 18 months due to the pandemic, and it was pleasing that so many people could come together, celebrate the industry's successes and provide support to peers and colleagues," he said.

"Everyone who was nominated for an award this year has demonstrated their passion and commitment to the industry and has made a valuable contribution to its ongoing growth and success.

"I'd like to congratulate every individual and business who won an award at this year's National Awards for Excellence and thank them for their continued dedication to our industry," Mr Whiteside said.

Congratulations to the onion industry's Jake Shadbolt (Scotties Point Farms) and Renee Pye (Zarella Fresh) who were nominated for Young Grower of the Year, and Neil Armstrong (Harvest Moon) who was nominated for Syngenta Grower of the Year. The onion industry was thrilled for Andrew and David Moon of Moonrocks who took out top honours winning Syngenta Grower of the Year.

Kees Versteeg of Qualipac Farms and Jim Ertler of Premium Fresh Tasmanian must also be commended for being nominated for Hort Innovation Exporter of the Year.

Congratulations to all those involved, and we hope to see you all there again next year in 2022.

(L) Grower of the Year, Andrew Moon and (R) Paul Luxton, Syngenta Australia - New Zealand Managing Director.





WINNERS OF THE HORT CONNECTIONS 2021 NATIONAL AWARDS FOR EXCELLENCE:

Andrew and David Moon, Qld
Syngenta Grower of the Year

Xavier Toohey, Vic
Corteva Agriscience Young Grower of the Year

Catherine Velisha, Vic
Boomaroo Nurseries Women in Horticulture Award

Steven Moffatt, Qld
Hort Innovation Exporter of the Year

Dr Jenny Ekman, NSW
Bayer Researcher of the Year

East Gippsland Vegetable Innovation Days (EGVID), Vic
Visy Industry Impact Award

Andrew Smith, Tas – E.E. Muir & Sons
Community Stewardship Award

Mark and Darren Todaro, Vic
Butler Market Gardens Environmental Award

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BIOSECURITY PLAN SAFEGUARDS ONION INDUSTRY

A robust biosecurity plan is crucial to safeguard Australia's \$197 million onion industry from exotic pest incursions. As Australia's fourth largest vegetable crop, more than 230,000 tonnes of onions are produced annually of which almost 40,000 tonnes are exported.

Although Australia's onion industry is currently free from exotic plant pests, an incursion can potentially decrease production, which will result in limited market access and increased management and biosecurity costs.

Biosecurity planning provides a mechanism for the onion industry, government, and other relevant stakeholders to assess current biosecurity practices and future biosecurity needs.

Plant Health Australia (PHA), Onions Australia, Hort Innovation and state and territory governments, have worked collaboratively over the past five years to annually review the Biosecurity Plan for the Onion Industry. The plan includes a comprehensive national approach to managing onion biosecurity risks and improving industry preparedness.

The biosecurity plan outlines key threats to the industry, risk mitigation plans, identification and categorisation of exotic pests and contingency plans. It focuses on five key areas:

1. High priority exotic pests, and established pests and weeds of biosecurity significance.
2. Implementing biosecurity for the Australian onion industry.
3. Threat identification and pest risk assessment.
4. Risk mitigation and preparedness.
5. Response management.

The updated biosecurity plan details current mitigation and surveillance activities being undertaken and identifies contingency plans, fact sheets and diagnostic protocols that have been developed for pests relevant to the onion industry. The biosecurity plan also provides strategies to manage and respond to incursions.

While exotic pests and diseases pose a constant threat, growers also need to remain vigilant of endemic pests present in other parts of Australia. An example of this is onion smut, a soil borne disease that re-emerged in 2019 after being absent for 15 years. The disease attacks onion seedlings

with affected onion crops usually wilting and dying.

In addition to the updated biosecurity plan, another key deliverable of the project was the development of an Onion Growers Biosecurity Manual - a practical guide for growers and their employees, contractors, researchers and consultants working in the industry.

The manual, available online, outlines simple procedures to minimise the risk of introducing and spreading pests, diseases, or weeds on-farm and between farms. It also contains an overview of biosecurity, fact sheets to identify the high priority pests, tips on crop management, and how to manage people, vehicles, and equipment to minimise biosecurity risks. In addition, it provides a biosecurity self-assessment list, and templates to record pest surveillance records and visitors.

The importance of managing plant biosecurity risks cannot be understated with many stakeholders working tirelessly to protect agricultural industries from exotic pests and diseases to secure the future of this million-dollar industry.

Growers and their employees are at the forefront of managing pests and diseases in the field and are encouraged to report any suspicious symptoms to the Exotic Plant Pest Hotline on 1800 084 881.



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- ▼ Increase in quality specifications for harvested crop = improved price of harvested products

Possible crop rotations

- ▼ Onions followed by seed / fresh potato crop
- ▼ Onions followed by carrots
- ▼ Onions followed by garlic
- ▼ Onions followed by melons or pumpkins

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ROAST ONION DAL WITH TEMPERED ONION AND CUMIN

INGREDIENTS

- 3 large red onions
- 1 cup orange lentils
- 2 l water
- 2 cloves garlic
- 1 thumb ginger
- 3 tbsp vegetable oil
- 2 tsp cumin seeds
- 1 tbsp coriander powder
- 1 tsp turmeric powder
- 2 medium tomatoes chopped
- 2 tsp Kashmiri red chili powder or 1/2 tsp paprika
- 2 tbsp chopped coriander
- Salt and pepper to taste

Tempering

- 1 red onion
- 4 tbsp vegetable oil or ghee
- 1 tsp cumin seeds
- 10 curry leaves (optional)
- 2 dried long red chillies (optional)
- 1 tbsp Kashmiri red chili powders (optional)

METHOD

- 1 Preheat the oven to 200 degrees.
- 2 Chop two of the red onions into quarters. Toss in a little vegetable oil and place in the oven to roast for 20 mins.
- 3 In the meantime, add the vegetable oil to a pan on medium heat. Chop the final onion into rough small cubes and fry on medium heat until they become translucent.
- 4 Finely chop or grate the ginger and garlic (finer the better) and add to the onions. Cook for a minute until everything becomes fragrant.
- 5 Add the spices and cook for 30 seconds.

- 6 Add the chopped tomatoes and cook until they become soft and broken down (feel free to add 50ml of water here just to stop the ingredients from burning or sticking to the bottom).
- 7 Finally, add the dal and the water and cook on medium low until the lentils are soft. Add more water if the mixture becomes too dry.
- 8 In a separate small pan, add the vegetable oil and bring to smoking. While that is coming to temperature, dice the red onion finely and place in the pan. Cook until they are roasted dark brown in colour. Just before it turns this colour, add the cumin seeds, curry leaves, dried chilli

and dried long red chillies. Cook until the onion is dark and then pour everything into the dal mixture. Season with salt and pepper.

- 9 Serve with rice, Naan or Idli.

YIELDS: 4 Servings

PREP TIME: 10 mins

COOK TIME: 30 mins

Recipe created by Simon Toohy for Australian Onions

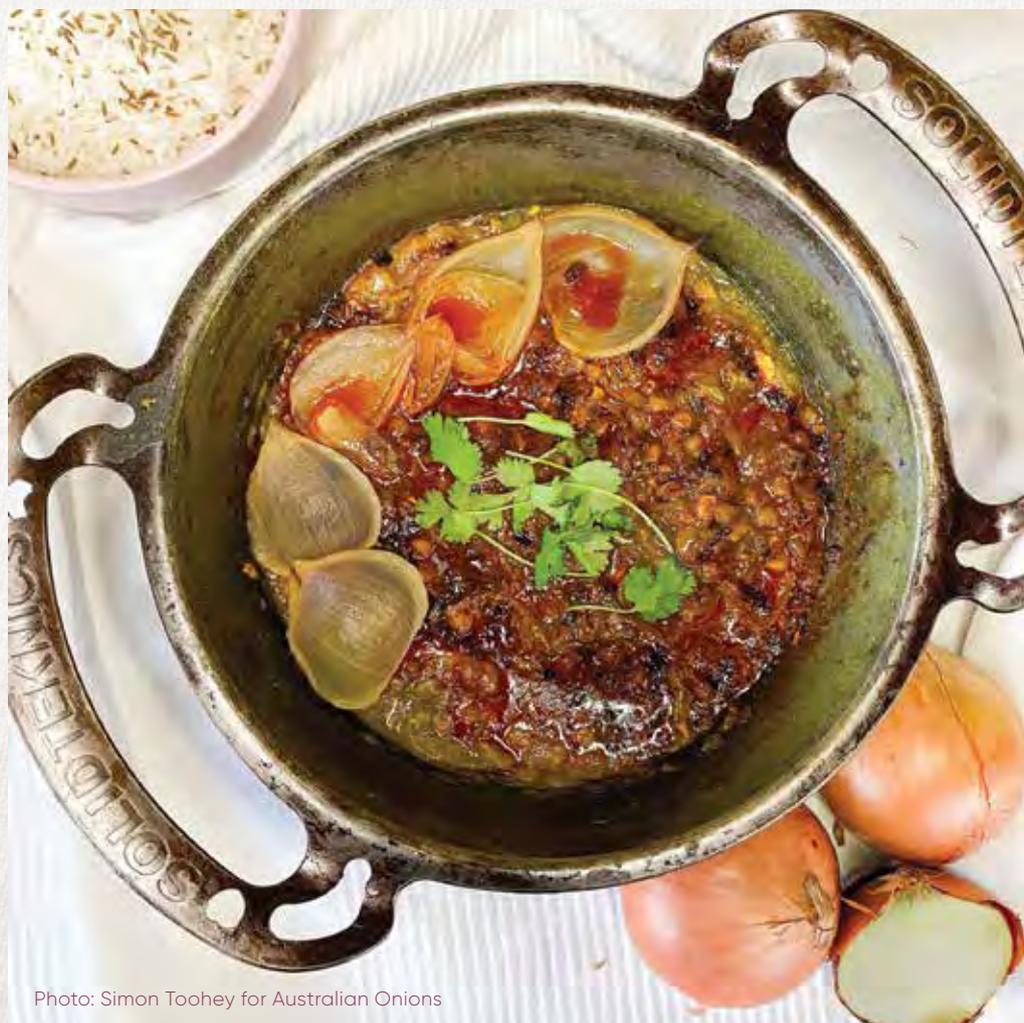


Photo: Simon Toohy for Australian Onions

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STATE ROUND UP 2020/21 SEASON

NEW SOUTH WALES

Frank De Marco

Our crop was similar to last year with the harvest beginning in November 2020 and ending in March 2021. We experienced another successful growing season despite the limited to no rainfall.

This year's growing season in New South Wales has progressed well so far, with sowing taking place in May but at a reduced rate due to the continual effects of COVID-19 on the market.

The cost of production and crop yields is something growers are keeping in mind in this next sowing season due to low market prices.

A large area of onions has now been planted with a forward estimate of 5000 tonnes to be lifted in this coming season.

QUEENSLAND

The 2020 crop was well and truly wrapped up by January 2021. A milder summer, aided by good harvest conditions, ensured good quality onions were on offer to the domestic market. In saying that, most crops were grown on the least amount of in-crop rainfall seen in decades. Lack of available irrigation water led to lesser than expected yields across parts of the region. Whilst not ideal for the growers, it certainly proved to be ideal for harvest workers. Southern Queensland (QLD) onion growers experienced much heartache last season as field workers bartered their services to the highest bidder. Due to COVID-19 and other factors, worker availability was lower than usual leading to major contractors across the area raising their harvest rate. Some growers were forced to pay in excess of \$70/bin (400kg approx.) to get their onions harvested. As we all know, return on onion crops last season was below cost of production (and continues to be). Any profit made in 2019 was

certainly handed back last season.

The 2021 crop is 95 per cent planted at this point. Ideally these late crops would have been in the ground, but persistent wetter conditions are continuing to halt seeding. Area planted across all growing areas of Southern QLD looks to be slightly down on usual. This is due to several factors. Namely, we are experiencing an ongoing drought, albeit a green drought at the moment. The lack of underground water will be felt most when onions bulbs are filling in the spring. Growers weren't prepared to take the risk of running out of water when shorter term crops appeared a better proposition. Secondly, a lack of available harvest workers left a scar on many growers. This was unlikely to change this year as continued lockdowns and limitations on incoming workers from overseas appeared to continue. And thirdly, at the time of planting, growers in southern growing regions of Australia had excess in storages and were finding their onions hard to shift at profitable prices. These factors alone were always going to have an impact on area planted.

The current crops are looking excellent. Intermittent rain events have filled the moisture profile of the soil and onion crops are looking as good as they ever have. There has been some thought that the recently found serpentine leaf miner may enter the region in the near future. We are yet to fully understand the threat of this introduced pest. All that aside, we are hopeful for the good growing conditions to continue followed by a dry harvest and good prices. Not much to ask for!!

TASMANIA

Tim Groom

It has been a testing year for the Tasmanian onion industry.

In general, onion yields and quality varied from good to exceptional this season, although there was some bolting observed in some varieties as a result of a cold snap in late December.

Rain during February created some hold ups to lifting but for the most part the summer and autumn weather was kind for onion harvesting.

In regards to export, shipping can best be described as chaotic. All shipping lines have had issues with lack of containers, lack of space and schedule delays as a result of port congestion. There does not appear to be any relief to this situation for the foreseeable future, with Australia vulnerable to rapidly spiking freight rates being paid out of Asia to Europe and the USA.

Demand from Europe has been declining for Tasmanian onions for a number of years, with the exception of 2019 due to the European drought. The decline appears to have been accelerated by the COVID-19 pandemic as well as increasing awareness of carbon emissions and long distance transport, with a number of retailers aiming to stay on European crop for 12 months of the year. Demand from South East Asia has been sound although to some extent supported by a lack of freight capacity out of New Zealand.

The domestic wholesale market became oversupplied at an early stage and has not recovered, with very low prices prevailing. I cannot see exports being the panacea to local oversupply given the decline in European demand and whilst the difficult freight situation remains in play. There will only be more pain until there is a readjustment in production. We cannot be reliant on someone else having a crop failure to be profitable.

Continued page 32

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STATE ROUND UP 2020/21 SEASON

SOUTHERN VICTORIA

Frank Powell

Southern Victoria has continued to be bruised by COVID-19's effects on export markets due to container shortages and lack of trade.

Although we are seeing low prices for onions, the season has been fairly wet resulting in a reasonably good crop that we are packing 51 weeks of the year.

Earlies have been planted for an expected harvest in January.

We are hopeful if export markets open up in the next year, we will see healthier prices for onions.

NORTHERN VICTORIA

Pete Shadbolt

After a somewhat disappointing season last year, who knows what will happen come 2021-22.

Onions in northern Victoria are all planted with similar areas to previous years. Growing conditions up until now (late July) have been favourable with weekly falls of rain and minimal frosts.

Expecting yields and quality to be very good come November through to January and hopefully returns not just for Victoria but for all states more reflective of the effort that goes into growing a crop of onions.

SOUTH AUSTRALIA

Greg Bragg

Like everywhere around the country, we have experienced much milder growing conditions due to the La Niña weather event. However, we mostly seem to have missed out on the high rainfall, or any rainfall like what was experienced in the eastern states.

With the mild growing conditions there has been widespread bolting in both browns and reds, mostly in reds, but as you went further south there was some very bad bolting in browns as well. The cool mild

growing conditions led to strong generative growth, then early summer we had some very cold nights followed by a few hot days, then back to cold nights. I believe this caused the bolting issues.

Generally, where there were no bolting issues crops have yielded heavily, as there was very little in the way of heat waves to check the growth, resulting in quite a bit of large in crops around the state.

Aspergillus has once again been an issue this season, particularly in storage. Aspergillus is noticeably becoming more of an issue with each season. It is pleasing that Onions Australia has been able to get the epidemiology and management of Fusarium basal rot research project out to the tender stage. This project could become a game changer for Australian growers in helping to reduce the risk of Fusarium basal rot in time.

The markets at present are very challenging for South Australian growers, with an oversupply in an ever-changing COVID-19 market. I envisage that there will be growers that will have to dump perfectly sound onions due to low demand as a result of various lockdowns.

Cold stored onions could possibly stretch much later into the marketing season than normal. Let's hope the Sydney lockdown is the last, and next season we see a little more normality come back into the market.

WESTERN AUSTRALIA

Joe Castro

Western Australia had a hard season in 2020/21 due to the very hot summer and easterly winds which went for three weeks straight. It dried the onions out quickly, but early reds and browns were of an outstanding yield and quality (early January harvest).

When the wind stopped, we had six days of light rain and high humidity which caused problems on mid-season reds with internal issues.

Browns and whites weren't affected, and we had great yields and quality. Export was slow to start with but picked up later, but prices were average.

Planting has begun in WA but we are having to face gale-force winds and wet weather, with July experiencing 26 days of rain, which made seeding difficult.



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AGRONOMY SERVICES

Agronico Pty Ltd

Julian Shaw
175 Allport Road
East Leith TAS 7315
www.agronico.com.au
jrshaw@agronico.com.au
Phone 03 6428 2519
Fax 03 6428 2049
Mobile 0408 140 129

ASSOCIATIONS

Onions Australia

Lechelle Earl
PO Box 9420
Mount Gambier West SA 5291
www.onionsaustralia.org.au
lechelle@onionsaustralia.org.au
Phone 08 8725 8862
Fax 08 8725 8863
Mobile 0458 111 126

Onions New Zealand

PO Box 10232
Wellington NZ 6143
www.onionsnz.com
Phone 0508 ONIONS (664667)
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Paul Nott
2 Hovey Road
Yatala QLD 4207
www.agrichem.com.au
customerservice@agrichem.com.au
Phone 07 3451 0000
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Freecall 1800 654 758

FMC Australasia

Matthew White
12 Julius Avenue
North Ryde NSW 2113
www.fmcaustralasia.com.au
Freecall 1800 901 939
Fax 02 9887 0911

Nufarm Australia Limited

103-105 Pipe Road
Laverton North VIC 3026
www.nufarm.com.au
Phone 03 9282 1000

TriCal Australia

Robyn Beck
5 Chamberlain Street
Wingfield SA 5013
www.trical.com.au
rbeck@trical.com.au
Phone 1300 FUMIG8

EXPORTER

Wynyon Pty Ltd

Mr Tim Groom
62A Mission Hill Road
Penguin TAS 7316
www.wynyon.com.au
sales@wynyon.com.au
Mobile 0408 002 944

GOVERNMENT DEPARTMENTS

Department of Primary Industries, Parks, Water & Environment

Dr Ziqing Yuan
13 St John Avenue
New Town TAS 7008
www.dpipwe.tas.gov.au
Phone 03 6165 3238
Fax 03 6278 2716
Mobile 0417 104 747

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Fax 08 8303 9393

GROWER/PACKER

Bowhill Produce Pty Ltd

Kevin & Yvonne Smith
7335 Hunter Road
Bowhill SA 5238
bowhprod@bigpond.com
Phone 08 8570 4187
Fax 08 8570 4188
Mobile 0427 704 188 (Kevin)
Mobile 0407 608 238 (Yvonne)

Ciampa Produce

Daniel Mead
PO Box 50
Bordertown SA 5268
ciampaproduce@bigpond.com
Packing shed 08 8758 6223
Mobile 0427 587 226

Favara Farming Pty Ltd

Tony & Lucy Gurciullo
Oaklands Road
Jerilderie NSW 2716
favara@mcmmedia.com.au
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Forth TAS 7310
www.harvestmoon.com.au
mkable@harvestmoon.com.au
Phone 03 6428 2505
Fax 03 6428 2952
Mobile 0408 140 060

Just Onions Pty Ltd

Cory Kent
PO Box 832
Belmont VIC 3216
www.justonions.com.au
justonions@bigpond.com
Phone 03 5229 7499
Fax 03 5229 7101

LJM Produce Pty Ltd

Larry Maiolo
RMB 3555
Harvey WA 6220
ljm@netserv.net.au
Phone 08 9720 1338
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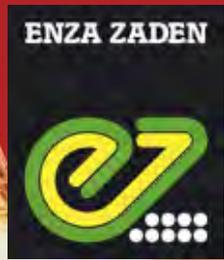
Moonrocks Aust

David Moon
PO Box 607
St George QLD 4487
www.moonrocks.com.au
info@moonrocks.com.au
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Fax 07 4625 3172

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ENZA ZADEN SOWING GUIDE | QUEENSLAND

Brown Onion		March	April	May	June	July	August	September	October	November	December	January	February
Copperhead	Commercial	■		■	■		■	■	■				
Manuella	Introduction		■	■	■				■	■	■		
Lucinda	Commercial			■	■	■	■			■	■		
Python	Commercial				■	■	■	■			■	■	
Red Onion		March	April	May	June	July	August	September	October	November	December	January	February
Malbec	Commercial			■	■				■	■			
White Onion		March	April	May	June	July	August	September	October	November	December	January	February
Pirineos	Commercial				■	■					■	■	

Sowing ■ Harvest ■

ENZA ZADEN SOWING GUIDE | SOUTH AUSTRALIA

Brown Onion		March	April	May	June	July	August	September	October	November	December	January	February
Shinto	Commercial			■	■					■	■		
Manuella	Introduction			■	■	■					■	■	
Lucinda	Commercial			■	■	■					■	■	
Python	Commercial				■	■					■	■	
Gobelin	Commercial						■					■	■
Olivine	Commercial	■	■					■					■
Piutonus	Commercial	■	■						■				
Samantha	Commercial		■	■				■	■				
Mindi (E613, 1942)	Commercial	■	■					■	■				
Red Onion		March	April	May	June	July	August	September	October	November	December	January	February
Malbec	Commercial			■							■		
Pinotage	Commercial					■	■	■				■	■
E61D (1044)	Experimental					■	■	■	■			■	■
Cabernet	Commercial					■	■	■	■			■	■
Barolo	Introduction	■	■					■	■				■
Tannat (E611, 1942)	Introduction	■	■					■	■				■

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Murphy Farms

Glenn Murphy
68 Saviges Road
Thorpdale VIC 3835
p.vmurphy@hotmail.com
Phone 03 5634 6267
Mobile 0428 779 931

Paleso Enterprises Pty Ltd

Frank De Marco
PO Box 529
Hanwood NSW 2680
frank@palesoenterprises.com
Phone 02 6968 5239
Fax 02 6968 5250
Mobile 0488 235 775

Qualipac Produce Pty Ltd

M S 437 Warrego Highway
Gatton QLD 4343
www.qualipac.com.au
admin@qualipac.com.au
Phone 07 5466 5441
Fax 07 5466 5196

Red Gem Growers & Packers

Robert Cerchiaro
63 Nar Nar Goon Road
Nar Nar Goon VIC 3812
www.redgem.com.au
robertc@redgem.com.au
Phone 03 5942 5205
Fax 03 5942 5448
Mobile 0419 105 259

Rowett Onions

Tony Rowett
Lot 22 Hutchinsons Road
Bordertown SA 5268
rowettonions@bigpond.com
tonyrowett@bigpond.com
Phone 08 8754 6130
Fax 08 8754 6131
Mobile 0428 854 147

Scotties Point Farms Pty Ltd

Peter Shadbolt
169 Scotties Point road
Beverford VIC 3590
scottiespointfarms@bigpond.com
Phone 03 5037 6742
Fax 03 5037 6512

Willow Produce

Clinton Griffiths
5536 Hunter Road
Nildotte SA 5238
www.willowproduce.com.au
hello@willowproduce.com.au
Fax 08 8570 8010
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MACHINERY

Dobmac Agricultural Machinery

Mark Dobson
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Phone 03 5820 5337
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MISCELLANEOUS

Barker Boy Fresh

Ken Borg
1 Secker Road
Mount Barker SA 5251
www.barkerboy.com.au
kenborg@barkerboy.com.au
Phone 08 8398 2767
Fax 08 8398 3122
Mobile 0408 434 801

Rathlyn Associates

Dr Richard Jones
1/30-34 Greenoaks Avenue
Cherrybrook NSW 2126
richjone@bigpond.com
Phone 02 9875 5997
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Fax 08 8347 4058
Mobile 0428 831 992

J-Tech Systems

Michael Williams
PO Box 5047
Murray Region MSC NSW 2708
www.jtechsystems.com.au
sales@jtechsystems.com.au
Phone 02 6049 5000
Fax 02 6040 1292

Pope Packaging

Mark Iadanza
Cnr Leeds St & Ninth Avenue
Woodville North SA 5012
www.popes.com.au
marki@popes.com.au
Phone 08 8243 3100
Fax 08 8445 6622
Mobile 0427 009 870

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Monaghan Fresh Produce

Steve Monaghan
8 Coragulac-Beeac Road
Coragulac VIC 3249
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- Smart easy to use interface.
- Large volume capacity, cleaning and grading up to 60 tonnes of crop per hour
- Gentle on product
- Energy efficient Blue Inverter technology with direct drive electric motors
- Versatile - capable of sorting onions, carrots, beets and bulbs
- Reputable UK company

NICHOLSON

Machinery Ltd



Nicholson Onion Topper

- Models to cater for feeds from 3-20 tonnes per hour
- Patented twisted stainless-steel shafts rotating against rollers
- Efficient clean yet gentle removal of tops and roots, display quality, no damage
- Eco Model features variable speed electric motors, quiet chain driven, low maintenance
- Quality UK design and manufacture

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BUSINESS DIRECTORY

The below listed members are paying members and have opted on their membership form to be listed in our OA magazine. If any of the below member details have changed and/or are incorrect, please advise OA. If you are a paying member and would like to be included in the business directory, please advise OA.

RESEARCH

AgNova Technologies Pty Ltd

Andrew Watson
PO Box 2069
Box Hill North VIC 3129
www.agnova.com.au
info@agnova.com.au
Phone 03 9899 8100
Fax 03 98998500
Mobile 0423 821 395

Crop Protection Research Pty Ltd

Dale Griffin
PO Box 4068
Mount Eliza VIC 3930
www.cpresearch.com.au
dgriffin@cpresearch.com.au
Mobile 0418 139 788

Metcalf Biocontrol

Dr Dean Metcalf
211 Wyre Forest Road
Molesworth TAS 7140
www.biocontrol.net.au
metcalf@tassie.net.au
Mobile 0409 054 323

SEED COMPANIES

Bayer Vegetable Seeds

Jason Cooper
PO Box 165
West Beach SA 5024
www.nunhems.com
jason.cooper@bayer.com
Phone 07 3908 5810
Mobile 0408 178 410

Bejo Seeds Pty Ltd

PO Box 5627
Cranbourne VIC 3977
www.bejo.com.au
info@bejo.com.au
Phone 03 9782 2811

Lefroy Valley

Nicholas Laminski
PO Box 2665
Seaford VIC 3198
www.lefroyvalley.com
nlaminski@lefroyvalley.com
Phone 03 8779 2121
Fax 03 8732 0308
Mobile 0409 962 902

Magnus Kahl Seeds

James Ryan
6A Dairy Drive
Coburg North VIC 3058
www.magnuskahl.com
james@magnuskahl.com
Phone 03 9354 5780
Mobile 0408 523 535

Seminis

Darren Wood
PO Box 6051
St Kilda Rd Central VIC 8008
www.seminis.com.au
darren.leslie.wood@monsanto.com
Phone 1800 364 846
Mobile 0428 673 802

Syngenta Seeds Pty Ltd

36 Newson Street
Keysborough VIC 3173
www.syngenta.com

Terranova Seeds Pty Ltd

Tony Higgs
Private Bag 118
Wetherill Park NSW 2164
www.terranoaseeds.com.au
tony.higgs@tnseeds.com
Phone 02 9725 1200
Fax 02 9725 1066
Mobile 0418 154 710

SERVICE & SUPPLIES

Biological Services

James Altmann
PO Box 501
Loxton SA 5333
www.biologicalservices.com.au
info@biologicalservices.com.au
Phone 08 8584 6977
Fax 08 8584 5057

E.E Muir & Sons Pty Ltd

1104-1110 Port Wakefield Road
Burton SA 5110
www.eem.com.au
Phone 08 8280 8079
Fax 08 8280 9506

EuroChem Pty Ltd

Matthew McAulay
9 Heales Rd
Lara VIC 3212
www.eurochem.com.au
matt@eurochem.com.au
Mobile 0247 453 101

Neutrog Australia Pty Ltd

Angus Irwin
288 Mine Road
Kanmantoo SA 5252
www.neutrog.com.au
info@neutrog.com.au
Phone 08 8538 3500
Fax 08 8538 3522

Southern Soils

Jarrad Simcock
www.southernsoils.com.au
info@southernsoils.com.au
Phone 1300 118 181
Mobile 0438 198 100

WHOLESALE

Garlic Farm Sales

sales@garlicfarmsales.net.au

Darren Rathjen, who with his family runs Delta Produce in South Australia is a fifth generation farmer growing 320 acres of onions at properties in Wall Flat and in the south east of South Australia. He is also on the Onions Australia Executive Committee as deputy chair, so he has spent a long time around onions.

Darren says the battle against onion thrips is a constant one. "An infestation during the bulb enlargement phase can have a serious impact on yield, with unhealthy plant tops reducing the bulb growth period. They can also breed in bulbs that have been harvested, causing skins to pop off reducing marketability. Onion thrips are also a vector of yellow spot virus which can cause issues too.

Controlling onion thrips is made more difficult due to the lack of chemical control options available.

"We have lost a number of products over the years due to health and safety concerns, residue issues or them just failing to control the pest" Darren told us "and those that are left we have been using for a long, long time which obviously raises the issue of resistance. This being the case, any new product in the shed is good news.

Success Neo, from Corteva Agriscience, has recently been registered for control of onion thrips in bulb crops. Success Neo is a group 5 pesticide which means a brand-new mode of action on onion thrips. It contains the active ingredient spinetoram, which is derived from a naturally occurring organism giving it a large margin of safety for users, consumers and the environment as well as short withholding periods. It is a highly selective product which has a powerful efficacy on thrips while leaving beneficial insects such as bugs, beetles and lacewings unharmed and able to aid in the control of thrips.

Chris Brown, Corteva Agriscience Customer Technology Specialist, said 'Success Neo is the standard insecticide option for western

flower thrip control across a wide range of horticulture crops and now bulb vegetable growers have Success Neo available to them to control both western flower thrips and onion thrips'.

The trial data is compelling. Success Neo provides excellent control of both nymph and adult onion thrips when used according to the label.

Vigilant monitoring and early control before thrip numbers build is the key to thrip management. Preventing physical damage and viral infection early will help maximise yield. Control of thrips is best achieved by applying three back-to-back applications of Success Neo at 7-day intervals. This label claim also complies with the required insecticide resistance management strategy. Thorough coverage is essential to control thrips. The addition of a wetting agent will also improve control.

Success Neo is compatible with most commonly used fungicides so can be applied in one pass in most cases. Bulb vegetable growers also have flexibility with the short 3-day harvest withholding period.

With older chemistry either no longer available or ineffective at controlling thrips, it is important that bulb vegetable growers have new insecticides to use against these damaging pests. Success Neo provides a strong option but must be used in rotation with alternative mode-of-action insecticides to remain effective for as long as possible.

In summary said Chris, Success Neo provides onion growers with a powerful new control option for thrips with a new mode of action that will kill thrips that are resistant to other chemistries. While highly efficacious on thrips it is soft on operators and other pests making it an ideal option for use in an Integrated Pest Management (IPM) program.



STRATEGIC PARTNERS



AgNova Technologies Pty Ltd
 PO Box 2069
 Box Hill North VIC 3129
 Australia
 Phone 03 9899 8100
 Fax 03 9899 8500
 Email info@agnova.com.au




Mark Dobson
 General Manager
 36-38 Industrial Drive, Ulverstone
 Tasmania, 7315 Australia
 P: (03) 6425 5533 Int: 613 6425 5533
 M: 0408 140 508
 E: mpdobson@dobmac.com.au
 W: www.dobmac.com.au



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- Remote support paired with local service
- Ability to integrate with existing packing equipment



Exigo Scale

- Highly accurate circular weighing scale comes in 12 or 16 buckets of 14L capacity
- Fast! Well suited for onions into 5-25kg bags
- Flexible options for infeed/discharge for easy integration and multiple crop use
- Perfect in combination with Baxmatic and sewing lane
- Remote support and integration with third party machines

Baxmatic & Sewing Lane

- Automatic wicket bag placer
- Separates bags, positions at the scale filling mouth and checks before filling
- Perfect for 5-25kg net, poly or hessian bags
- Sewing lane closes filled bags and stitches closed with options for label applicator
- Easily integrated with third party palletiser for a fully automated solution

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