

PRESIDENTS WORD

Troy Prichard
ASPG PRESIDENT



As we approach the end of 2022, we have been advised that guava root knot nematode (GRKN) has been confirmed around Darwin. This is the first time it has been detected in Australia. GRKN is a major sweetpotato pest and if it moves from the Northern Territory and infests our crops, it will severely reduce yields and increase production costs with the need for additional nematicide applications. Please see the GRKN article later in this newsletter for more information.

I have now been President for over twelve months, having been elected in November 2021 and recently re-elected at the 2022 Annual General Meeting. I thank you for your ongoing support and vote of confidence. I have learnt much this year hearing from you as growers and Association members and gained a better understanding of our important relationship with Hort Innovation, who invest and manage both our research and development (R&D) and marketing projects and investments.

In my memory, 2022 has been one of the worst years for sweetpotato growers with depressed farm gate prices, excessive rainfall, and the ongoing battle to attract and retain workers.

For those who have been in the industry for some time I am sure you can remember the tough times we had back around 2000 when prices were at an all-time low of \$8/10 carton, and we were producing poor quality. This time was followed by a

period of great R&D, led by Eric Coleman, who was then in the Department of Primary Industries. The research saw many improvements in both the quality and yield of crops with total industry volumes rising annually and prices remaining strong for around 15 years.

I also recall seeing 30 to 40 growers attending field days and farm walks and being open to sharing information and learning from each other. I would encourage all in the industry to return to the collaborative days where we constructively work together. Through uniting our industry, we should focus on putting quality sweetpotatoes into the market and work with our agents and supermarkets to share the good news story of sweetpotatoes with consumers. This will, in time, see a stronger price for growers and a more cohesive industry.

Part of the success in the growth of the sweetpotato industry has been the direct relationship we have with the Louisiana

State University (LSU) AgCenter, where all our improved varieties have been imported from. In August, Professor Don Labonte, from LSU visited Australia and shared their latest research and promising new varieties. Read more about LSU research and varieties later in the newsletter.

On a positive note, the management committee, with the support of Peter Long, is working hard to improve relationships with Hort Innovation and ensure we gain the greatest value from your grower R&D and marketing levies. Finally, a good news story for 2022, was 14 younger members of our industry undertaking a three-day supply chain study tour to Sydney as the first year of our Emerging Leaders program.

My door is always open if you would like to discuss an industry matter or have an issue the Association may be able to help with. Please give me a call.

Troy



Australian Sweetpotatoes Association Inc. 2022 AGM

The Annual General Meeting and a general meeting together with grower updates were held in Bundaberg on the 17th November with 24 attending two of whom dialed in via Zoom from Cudgen. It was great to see nine of our Emerging Leaders participate in the AGM. There projects updates from the Quality Project (Tristen and Andreas), Divya Vinod from Hort Innovation and the Department of Agriculture and Fisheries research team of Sandra Dennien, Jenny Cobon and Brett Day.

FROM THE EXECUTIVE

As the ASPG Executive Officer, the highlight for me this year was the three-day supply chain study tour of Sydney with 14 younger members of the industry. Looking at the sweetpotato supply chain was the primary activity in the first year of the three-year Hort Innovation funded Emerging Leaders Program. The young members saw firsthand, the Sydney fresh fruit and vegetable markets (the largest in Australia), spoke to agents including an off-site major agent and met with produce managers from the three major supermarkets. Please read the newsletter article later in this edition about the study tour.



Another positive for the industry is that Hort Innovation are now working to improve relationships with industries through new processes to identify and prioritise R&D projects, with sweetpotatoes chosen as one of the pilots. Whilst we had a successful grower workshop in October to identify projects and investments for 2023 and 2024, it was a little disappointing that only a limited number of growers participated. Another frustration was that planning for the October workshop commenced in February and we waited 7 months to hold the workshop due to Hort Innovation delays. We look forward to the industry taking greater control of the 2023 process with the potential of ASPG leading the process.

With the incursion of GRKN I would encourage all growers to revisit your farm bio-security plans and processes. The critical action within your control is to ensure all farm machinery and equipment is clean and free from soil when you bring it onto your farm. The other priority is to ensure that plant material is not introduced from outside your farm, including from workers' boots, and vehicles as another possible source.

Finally, as 2022 draws to a close, I would like to thank all in the industry I have worked with this year for their time, knowledge and insights. As always, I enjoy learning, and hopefully contributing, to creating a better future for growers and the sweetpotato industry. As we approach the end of 2022, with GRKN on the horizon in the Northern Territory, we commit to doing everything we can to communicate to growers and minimise its spread and encourage all of you to act on-farm as a priority.

Peter Long - Executive Officer



ASPG MANAGEMENT COMMITTEE

There was one change to the ASPG Management Committee with Emily Zunker voted on. Emily is one of our Emerging Leaders.

Welcome Emily

PRESIDENT

Troy Prichard

VICE PRESIDENT

Matthew Pritchard

TREASURER

Eric Coleman

EXECUTIVE OFFICER/SECRETARY

Peter Long

COMMITTEE

Damien Botha

Rodney Wolfenden

Emily Zunker

Russell Mortimer

Russell McCrystal

Major sweetpotato pest detected in Australia for the first time



*In September 2022, guava root knot nematode (*Meloidogyne enterolobii*) [GRKN] was detected on a farm near Darwin, Northern Territory. Guava root knot nematode is listed as the number one threat to the sweetpotato industry due to its persistence and impact on crop production. GRKN has not previously been recorded in Australia.*



Meloidogyne enterolobii damage on storage roots. Camilo Parada and Dr. Lina Quesada, North Carolina State Vegetable Pathology Lab

Since the initial detection, it has been confirmed at several sites, suggesting it may have been present in the Northern Territory for some time. *M. enterolobii* is a highly pathogenic and invasive nematode species. It is a high priority pest for the sweetpotato industry and other Australian industries including ginger, papaya, and vegetables. Despite its common name, it has a broad host range including many vegetable crops, ornamental plants, and weeds. It can overcome genes that give resistance to other root-knot nematode species in several crops, including sweetpotato.

The pest is present in several southern states of the United States of America where quarantine zones are enforced to limit further spread to pest-free areas. *M. enterolobii* tends to be more aggressive than other root-knot nematode species, which can result in more damage on storage roots. Some sweetpotato plantings affected by *M. enterolobii* in the United States have been rendered a total loss due to severe damage.

At this stage the Northern Territory Government is conducting further surveillance on other commercial properties to better understand the distribution of the pest. This information will inform whether it is possible or cost effective to commence an eradication program.

Biosecurity Queensland is very aware of the outbreak and taking the matter seriously. They are currently reviewing movement controls on material and machinery from the Northern Territory. We remind growers that on-farm biosecurity measures are your front line of defence to keep this pest (and many others) out of your property. As is the case with other root-knot nematodes, *M. enterolobii* can easily be spread through infested soil and infected plant material. It is critical that growers are mindful of risk pathways and strive to avoid introduction to their property. Signage, restricted access (particularly to cropping areas), machinery wash-down and use of clean planting material are all measures which can help to reduce the risk. Simple, low-cost measures can make a big difference in keeping your farm safe.

Good information about farm biosecurity is available through the Farm Biosecurity website, including the Farm Biosecurity Action Planner. The Australian banana industry has also produced a number of resources (e.g. Better Bananas On-farm Biosecurity) to help growers protect themselves from Panama disease, and many of the same biosecurity principles can be used to prevent *M. enterolobii* spread and protect sweetpotato farms.

If you see any unusual or particularly severe nematode damage to crops, contact Biosecurity Queensland on 13 25 23 or via <https://www.daf.qld.gov.au/contact/report-a-biosecurity-pest-or-disease>

VISITORS

PLEASE RESPECT FARM BIOSECURITY

Please phone or visit the office before entering



Do not enter property without prior approval
Vehicles, people and equipment can carry weed seeds, pests and diseases



World leading sweetpotato plant breeder visits Australia



In August Professor Don Labonte, from the Louisiana State University (LSU) AgCenter visited Australia at the invitation of Eric Coleman of Aus Sweetpotato. Eric and his family have been growing virus free sweetpotato plant material on their Gracemere property since 2003 and distribute the LSU varieties in Australia. Don visited farms at Rockhampton, Bundaberg and Cudgen and presented workshops at Bundaberg and Cudgen.

Don's key messages

Plant breeding is by nature a cooperative endeavour. The sweetpotato scientific and extension group at the LSU AgCenter is closely involved in the evaluation and development of new cultivars. Don estimated the research and development costs to develop a new variety reached around US \$300,000. Don explained the painstaking work required each year as they planted out and assessed approximately 35,000 true seedlings. The team screens and selects varieties for pest and disease resistance and the original pool of 35,000 candidates is reduced to one or two, over five consecutive years. It then may make the cut for release as a commercial variety, and in time, to us here in Australia.

The Louisiana breeding program developed Beauregard in the early 1980's, and 40 years on, there is a new generation of varieties, with improved characteristics and disease resistance, that are replacing Beauregard around the world and in Australia. In the last 15 years there has been the development and release of Orleans and Bellevue, which we grow. Another new variety, Bayou Belle, is setting a new yield benchmark for the processing sector and is now widely used for french fries and canning. Other specialty lines have also been developed for California, including Murasaki, Bonita and Vermillion. Of these specialty lines, only Murasaki has gained popularity in Australia.

Don shared that since the release of Orleans and Bellevue there had been a drought of new varieties showing good potential. However, they now have several lines with great promise after, including LA 18-100 (high yielding) and LA 19-13 (looks like having less skinning). LA 19-42 is good in sandy soils) and a promising new purple skin purple flesh variety is LA 18-115p.

The US market for sweetpotato french fries is approximately 35% of US production and there has been significant growth in other processed sweetpotato products, particularly since COVID. A canned mashed product is popular in the US for the catering sector (A10 size which is approximately one gallon US) and a canned sweetpotato, cubed in pineapple juice, is also available. (It is very sweet). The mashed product is the Bayou Belle variety that 'holds' together. It is not suitable for the fresh consumer market.

Don summarised sales in California, which are the most diverse market in the US:

- 15% Japanese varieties (Murasaki type)
- 10% white flesh (Bonita type)
- 40% gold (Bellevue, Orleans)
- 35% red (Vermillion red skin gold flesh)

Harmonised Australia Retailer Produce Scheme (HARPS)

HARPS released a new version of their program 2.0 in October 2022. All Tier 1 suppliers will have until 17th April 2023 to transition to Version 2.0. The Version 2.0 Standard will assist suppliers in meeting retailer requirements, and relevant Australian Laws.

The revised standard is accompanied by additional support tools for growers and suppliers, including guidance for each element and how to achieve compliance. The standard also incorporates guidance developed by the Fresh Produce Safety

Centre. HARPS have developed step-by-step guides to assist in the transition. Read the linked articles to find out more.

Overview - <https://www.aspg.com.au/wp-content/uploads/2022/11/2022-10-12-Media-Release-Overview-FINAL.pdf>

Full article - <https://www.aspg.com.au/wp-content/uploads/2022/11/2022-10-12-Media-Release-Long-Version-FINAL-1.pdf>



Project: PW17001 - Integrated Pest Management of Nematodes in Sweetpotatoes funded by Hort Innovation supported by grower levies and matching Australian Government funding.



This project aims to extend existing knowledge and develop new knowledge on soil health and nematode management, specific to sweetpotato farming systems. A range of management options are being investigated such as: volunteer and host weed control, suitable summer and winter cover/rotation crops, low/minimum till, long term beds and nematicide efficacy. Surveys conducted across production areas are being used to identify nematode species present. The latest milestone (109) was completed in August and has now been approved by Hort Innovation.

The second commercial crop (12,869 roots) in the Extensive trial was assessed in March. Analysis of nematode counts showed no significant difference between treatments for root-knot, reniform nematode and free-living nematodes. However, the long-term trends for this trial show lower root-knot and higher free-living nematodes at every sampling for all amended plots, compared with nematicide and untreated controls. These trends correspond with some yield and quality improvements for amended treatments.

The third commercial crop in the Intensive trial was harvested in June 2022. The analysed data from 5582 roots, show that organic matter (chicken manure + sawdust) and compost treatments had significantly less root-knot nematode than other treatments, including the nematicide treatments. The organic matter treatment also had significantly more free-living nematodes than all other treatments. However, Reniform nematode is now well

established in both trial blocks despite initially being present in less than a quarter of the plots. The average population across the trials has increased from 140 per 200g of soil in June 2020 to 1335 per 200g in June 2022.

Maintenance and cover crop rotations continue in both long-term trials along with a range of soil sampling (nematode surveillance screening, physical soil properties, microarthropods and NTF). The next commercial sweetpotato plantings are scheduled for January 2023.

The Intensive survey is ongoing throughout the major Australian production regions. Nematodes, both plant parasitic and free living, are being monitored in selected on-farm blocks over time. This survey will continue for the life of the project to understand how on-farm practices influence nematode populations. Free diagnostic sampling is also available to growers who want ad hoc information about nematode numbers in particular blocks. This service will be available until the project concludes in August 2023. Host range and pathogenicity trials are ongoing.

Two long term pot trials have been established at Bundaberg Research Facility (BRF) to investigate root damage caused



by root-knot nematodes and reniform nematodes. The replicated experiments will look at skin lesions occurring in Beauregard (control) and Bellevue. They will be harvested in autumn 2023.

The second nematicide trial will be planted this summer. A suitable block at the Bundaberg Research Facility was identified and planted with a mix of nematode susceptible crops in May. Over 1300 root-knot nematode inoculated tomato plants raised at Gatton and Bundaberg were planted into the block in August and September to promote high nematode numbers before trial installation.

We would especially like to thank McCrystal Ag, Windhum Farms and Mortimers Farms for their assistance with the long-term trial in Bundaberg. Please call Rach on 0436 928 512 if you would like a block sampled for nematodes.



Project: PW21002 - Causes and management strategies for skin loss in Sweetpotato funded by Hort Innovation supported by grower levies and matching Australian Government funding

Sweetpotatoes are harvested year-round in Australia. However, some popular sweetpotato varieties are prone to skin damage leading to dehydration when harvested during the cooler months. Skin damage is the major contributor to loss of quality causing downgrading of 10-30% of harvested product and resulting in economic losses.

This collaborative DAF, Louisiana State University (LSU) and Australian Sweetpotato Growers (ASPG) project builds on pilot studies (project PW18001) to investigate the role of nutrients in skin hardening of sweetpotatoes. This project will expand on previous work to further validate the role of nutrients and test the findings under field conditions. At the same time, this work will address significant fundamental knowledge gaps on periderm development in sweetpotato.

The project team will work together with growers to collect data on field characteristics, production practices, environmental variables, and post-harvest practices and to identify management options to reduce skin loss. Results will be collated to produce a comprehensive best practice manual for reducing sweetpotato skin loss which encompasses pre- and post-harvest practices and is validated for Australian commercial production systems.

During the first reportable period, an initial project planning meeting and formation of the project reference group, took place on the 10th of June 2022. A monitoring and evaluation plan including the program logic, a risk register, a stakeholder engagement plan and a communications plan have been developed. Farmer field and packing shed surveys have commenced, with 17 growers from the Bundaberg and Cudgen regions surveyed to date. Glasshouse trials and a literature review draft commenced earlier in 2022, however these activities are now experiencing delays due to ongoing sub contractual negotiations. Soil moisture and environmental monitoring sensors for long term data collection at three field sites have been purchased. Three SmartSpud™ sensors to determine impacts and drops across three packing sheds have been procured through the DAF scientific funding program. The three field and packing shed sites will be identified through the collation of survey data.



RESEARCHER PROFILE

Mary Firrell

Mary Firrell is a Senior Experimentalist with the Department of Agriculture and Fisheries (DAF) at Gatton and has extensive experience in vegetable research and crop production. She has worked in the areas of entomology, plant pathology, plant breeding and biofumigation. Mary studied Applied Science (Rural Technology) at the Queensland Agricultural College (now UQ) and is also a qualified food safety auditor.

In her pre-DAF life, Mary was a laboratory technician at the DPI Agricultural chemistry branch and then at a cyanide plant in Gladstone. Mary and her family have lived on a farm in the Somerset region since the late 1990s, where they grew tree crops until the 2011 floods. They now run a small herd of cattle.

Mary left brassica research and joined the sweetpotato team in 2018, bringing with her a wealth of knowledge and experience in applied horticultural research. Since then, she has thoroughly enjoyed the challenge of learning about the complexities of this crop and has developed skills and experience in agronomy, virus testing and plant propagation.

Mary has investigated sweetpotato virus transmission by



Silverleaf Whitefly and potential pathogen host plants in the sweetpotato family (check out Mary's Ipomoea weed identification poster on the ASPG website member's page).

With her chemistry background Mary currently co-ordinates the soil testing aspects of the long-term nematode project and is researching insect vectors for two endemic sweetpotato viruses as part of an Australian Centre for International Agricultural Research (ACIAR) project.

DAF purchases bed former for sweetpotato trials



This year the sweetpotato team were successful in obtaining DAF funding to purchase a new sweetpotato bed former for Bundaberg research station trials.

This is Rach's pride and joy and has been a long time coming. It is based in Bundaberg but is available for use across DAF research sites.

Thanks to Tony Denton for fabrication.

Sweetpotato Marketing Update October 2022

There has been significant work done by Hort Innovation on the sweetpotato levy marketing campaign. Follow this link to see more.
<https://www.aspg.com.au/wp-content/uploads/2022/11/Sweetpotato-Campaign-Update-October-2022.pdf>





Sweetpotato Industry Emerging Leaders complete a successful Sydney supply chain tour

In August, 14 emerging sweetpotato industry leaders travelled to Sydney to meet with major industry customers to better understand their needs and market dynamics. Troy Prichard, President of Australian Sweetpotato Growers, said the Emerging Leaders Program was strongly supported by the industry to develop the next generation of growers and equip them with the skills to succeed in their businesses and grow the industry.

The study tour is part of a three-year professional development program to which the industry is investing over \$180,000 to nurture and grow the industry's emerging leaders. The next generation of grower's hail from across the production regions of Bundaberg, Cudgen, and Rockhampton.

One of the participants, Ms Emily Zunker said: "The three days were filled with fantastic experiences that helped me develop an understanding of what happens to our sweetpotatoes once they leave the packing shed. It was great to meet like-minded people and develop an understanding of how it all works from the markets to the chain stores. It was an eye-opening experience."

Day one saw the growers start early with a tour of the Flemington markets, Australia's largest fresh produce market, which was a hive of activity at that early hour of the morning. Most on the tour

met with their market agents and heard from an exporter about the true costs and challenges of exporting.

Across the three days the growers also met in store with the national produce managers for Coles, Woolworths, and Aldi and completed a tour of the Aldi Minchinbury Distribution Centre. The growers then visited Hydro Produce's extensive vegetable packing facility at the markets and at Silverwater. This was followed by a visit to a Harris Farm store where they heard firsthand from the Area Manager about Harris Farms' marketing approach and the importance of shop presentation.

All produce managers welcomed the opportunity to speak with the young growers and stressed the importance of presenting quality sweetpotatoes to their customers and managing the supply chain to always have sweetpotatoes on the shelves.

As part of the tour, the growers visited Hort Innovation, the grower-owned, not-for-profit research and development corporation, for Australia's horticulture industry. Speakers provided updates on sweetpotato research projects. The growers now better appreciate the work Hort Innovation does and how their grower levies are invested.

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



Sweetpotato Quality Improvement Roadmap

PROJECT UPDATE (Hort Innovation Project PW20000)

Contributed by Tristan Kitchener (Kitchener Partners), Andreas Klieber (Quality Associates)

This project aims to improve the quality of sweetpotatoes by engaging key stakeholders across the value chain, including growers, wholesalers, processors and retailers, so quality can be monitored and maintained.

During the initial 12 months of the project, quality deterioration, particularly from skin defects and dehydration, has been worse than expected and is likely to be a purchase barrier for consumers.

Given the importance of supply chain timing and temperature management, the data logging component of the project was expanded in collaboration with six growers and the equipment provider Escavox. The aim is to gather approximately 900 traces from farm to retailer distribution centre to store, to fully characterise the conditions

experienced by sweetpotatoes throughout the national supply chain. This data gathering is still ongoing and will be used to refine recommendations to industry.

Following discussions with growers and retailers (ALDI, Coles, Woolworths), the causes and likely avenues for improvement of key quality issues were determined and summarised in a draft Quality Improvement Roadmap.

The high-level recommendations of this draft are:

A. Seed Stock

- Selection of gold skinned varieties less prone to skin damage, splitting and bronzing.

B. Production

- Minimisation of excessive in-ground holding of gold skinned varieties during winter.
- Sufficient pre-harvest topping period to allow skin hardening.
- Ground preparation and selection to minimise nematode pressure.

C. Harvesting

- Equipment design and handling practices to minimise skin damage during harvest.

D. Packing

- Wash process design to minimise skin damage.
- Wash water sanitiser and post-wash drying to control bacterial and other pathogens.
- Post-wash short-term holding prior to cooling to allow wound healing and/or application of edible coating to stop dehydration of skin.

- Optimisation of packaging material for pre-packed sweetpotatoes, including material, gauge and perforations, to minimise condensation and associated rots.

- Packing according to specification in relation to size, shape and defects such as nematode damage.

E. Road Transport

- Loading stock at correct temperature.
- Pre-cooling trucks to suitable temperature.
- Maintaining suitable airflows and consistently correct temperatures.
- Secure stowage to reduce mechanical damage.
- Transport with compatible co-loads (temperature, cross-contamination).

F. Cross-Docking and Wholesaling

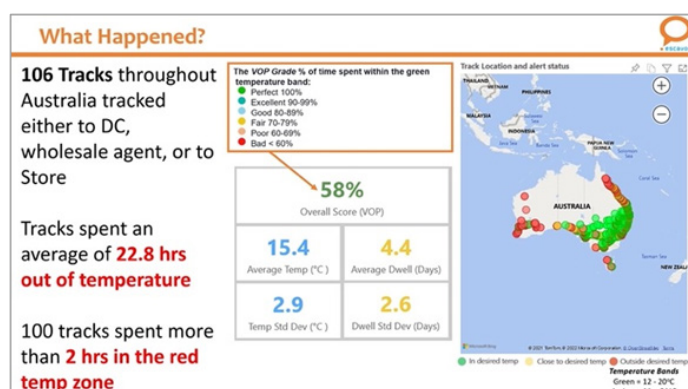
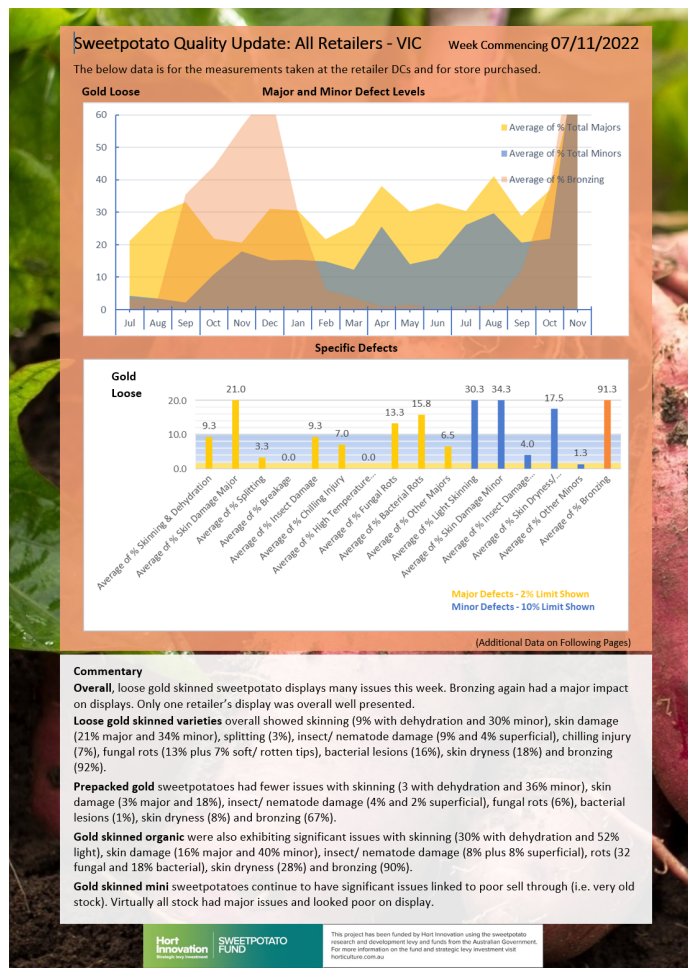
- Maintaining appropriate temperatures throughout and eliminating temperature fluctuations.
- Elimination of delays and storage at excessively low temperatures.

G. Retailer Distribution Centres

- Engage on consistent use and enforcement of specifications.
- Review delays through minimising carry over stock and opportunities for holding temperature optimisation.

H. Retail Stores

- Reviewing purchasing practices that impact on stock returns, suitable range and quality.



The project will further monitor sweetpotato quality of product in store to determine progress, in light of the Quality Improvement Roadmap. **For more information and a copy of the Quality Improvement Roadmap, please contact Peter Long on 0490 324 671.**



Rotation Crop Resistance Ratings

To support growers, included is a complete list of rotation crops screened for resistance to root knot nematode. Follow this link to view the comprehensive list.

<https://www.aspg.com.au/wp-content/uploads/2022/11/UPDATED-SUMMARY-OF-RESISTANCE-RKN-Rotation-crops-complete-list-top-logo-July-2022.pdf>

Rotation Crops with Highly Resistant or Resistant Rating to root knot nematode. This list only includes the cover crops that are Highly Resistant or Resistant to RKN. Follow this link to view the list.

<https://www.aspg.com.au/wp-content/uploads/2022/11/UPDATED-RKN-Resistant-or-highly-resistant-Rotation-crops-top-logo-July-2022.pdf>

Rotation Crops Resistance to Reniform. Cover crops and their resistance ratings to reniform nematode. Follow this link to learn more.

<https://www.aspg.com.au/wp-content/uploads/2022/11/UPDATED-SUMMARY-OF-RESISTANCE-Reniform-Rotation-crops-top-logo-July-2022.pdf>



Nematicide Fact Sheets

Fact sheet 12 - Nematicides and Sweetpotato

This factsheet provides an overview of nematodes, the available nematicides, and their mode of action in controlling plant parasitic nematodes. To learn more about the nematicides available to sweetpotato growers follow this link.

<https://www.aspg.com.au/wp-content/uploads/2022/11/Nematicide-FS-V2-Sept-22-PW21002.pdf>

Renewal of a minor use permit



A minor use permit has been renewed through to 2027 for the insecticide BENEVIA (APVMA No. 66684) which contains 100 g/L CYANTRANILIPROLE as the only active constituent. It is marketed by FMC. It provides cross spectrum protection against vegetable pests and cucurbit pests.

The permit holder is Hort Innovation Australia, and the permit can be found here:

<https://www.horticulture.com.au/contentassets/3255fa9c07ee4c1ba480d8cbfda2b4be/per84805v2.pdf>