Nematode resistance screening

PW17001 Final report Appendix 12 Integrated pest management of nematodes in sweetpotato

Jennifer Cobon, August 2023

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The Department of Agriculture and Fisheries proudly acknowledges all First Nations peoples (Aboriginal peoples and Torres Strait Islanders) and the Traditional Owners and Custodians of the country on which we live and work. We acknowledge their continuing connection to land, waters and culture and commit to ongoing reconciliation. We pay our respect to their Elders past, present and emerging.

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Summary

Potential rotation crops and sweetpotato cultivars were screened in pot trials for their host status to the several species of nematodes identified in the survey and for their suitability in sweetpotato production systems. Growing a non-host rotation crop can reduce the numbers of plant-parasitic nematodes in the soil for the proceeding crop as the food source, on which the nematodes feed, has been removed.

Host range studies in the glasshouse screened 103 cultivars from 33 plant species for resistance to two species of root-knot nematode (*Meloidogyne incognita* and *M. javanica*), reniform nematode (*Rotylenchulus reniformis* - 7 cultivars screened from 7 plant species) and lesion nematode (*Pratylenchus zeae* - 10 cultivars from 2 plant species). Twenty-four cultivars of sweetpotato were screened for resistance to two species of root-knot nematode and six of the commonly grown cultivars of sweetpotato were screened for resistance to reniform nematode.

Susceptible crops can support the development of plant-parasitic nematode populations, with a reproduction factor greater than 1. Resistant crops are those that do not support the reproduction of plant-parasitic nematodes with a reproduction factor less than 1. For root-knot nematode, susceptible crops are further categorised as highly, moderately and slightly susceptible according to the reproduction factors.

Thirty-six varieties were resistant or highly resistant to *M. incognita*, *M. javanica* or both. This includes 2 brassicas, 13 legumes and 14 grasses resistant to *M. incognita* and 8 legumes and 14 grasses resistant *M. javanica*. Cultivars of eight legumes (ground nut, sunn hemp and pigeon pea), two oats, three grasses and three forage sorghums were resistant to both *M. incognita* and *M. javanica* making these cultivars excellent rotation crops to reduce root-knot nematode numbers when the species of root-knot nematode is unknown.

Additional information on the host status of these plant species to other plant-parasitic nematodes of concern for sweetpotato production can be found on the Lucid key developed during this project.

Conference presentations

Cobon, J.A., O'Neill, W.T., Shuey, T., Langenbaker, R., Dennien, S., 2021, Resistant Rotation Crops to reduce root-knot nematodes in sweetpotato production. Oral presentation at the 21st Australasian Plant pathology Society Conference, Tasmania (online conference), November 2021.

Cobon, J.A., O'Neill, W.T., Shuey, T., Langenbaker, R., Dennien, S., 2022. Glasshouse screening to identify rotation crops resistant to reniform nematode (Rotylenchulus reniformis) for the sweetpotato industry. Oral presentation at the 11th Australasian Soilborne Disease Symposium, Cairns, August 2022.

Cobon, J.A., O'Neill, W.T., Shuey, T., Langenbaker, R., Dennien, S., 2022. Plant-parasitic nematodes in sweetpotato production areas in Australia. Oral presentation at the 11th Australasian Soilborne Disease Symposium, Cairns, August 2022.

Lucid key development. This online key contains all information to date on crops and their resistance to several species of plant-parasitic nematodes.

Crop rotations and their resistance to plant-parasitic nematodes - Lucid4 Key Player (lucidcentral.org)

Up to date tables of possible rotation crops and sweetpotato cultivars and their resistance to several species of plant-parasitic nematodes have been published on the ASPG website.

Introduction

Growing a non-host crop as a rotation is a good management strategy to reduce nematode numbers in the soil before planting a susceptible plant crop. If plant-parasitic nematodes do not have roots on which to feed, their numbers will reduce.

Glasshouse host range studies screened 103 cultivars from 33 plant species for resistance to two species of root-knot nematode (*Meloidogyne incognita* and *M. javanica*), reniform nematode (*Rotylenchulus reniformis* - 7 cultivars screened from 7 plant species) and lesion nematode (*Pratylenchus zeae* - 10 cultivars from 2 plant species). Twenty-four cultivars of sweetpotato were screened for resistance to two species of root-knot nematode and six of the commonly grown cultivars of sweetpotato were screened for resistance to reniform nematode.

Possible rotation crops and sweetpotato cultivars can be distinguished into two groups. Susceptible crops can support the development of plant-parasitic nematode populations, with a reproduction factor greater than 1. Resistant crops are those that do not support the reproduction of plant-parasitic nematodes with a reproduction factor less than 1. For root-knot nematode, susceptible crops are further categorised as highly, moderately and slightly susceptible.

Thirty-six varieties were resistant or highly resistant to *M. incognita*, *M. javanica* or both. This includes 2 brassicas, 13 legumes and 14 grasses resistant to *M. incognita* and 8 legumes and 14 grasses resistant *M. javanica*. Cultivars of eight legumes (ground nut, sunn hemp and pigeon pea), two oats, three grasses and three forage sorghums were resistant to both *M. incognita* and *M. javanica* making these cultivars excellent rotation crops to reduce root-knot nematode numbers when the species of root-knot nematode in a filed/block is unknown or a mix of the 2 species .Two cultivars were resistant to *M. incognita* while 13 were resistant to *M. javanica*. One sweetpotato cultivar of the six screened was resistant to *R. reniformis.*

This resistance screening work has expanded the range of suitable rotation options for sweetpotato growers to help manage a range of plant-parasitic nematode pests. Available varieties may frequently change, especially for crops such as forage sorghum. This assessment of some new varieties, and some crop types which haven’t previously been screened, provides a useful update of resistant rotations for the Australian sweetpotato industry. Screening of sweetpotato cultivars for nematode resistance under Australian conditions using locally sourced nematode species provides valuable information on varietal selection for growers.

Materials and methods

General methods are described in detail in appendix 2.

Meloidogyne javanica and *M. incognita* experiments

Seeds of each plant cultivar or vines of sweetpotato variety were sown directly into 1.5 L pots filled with pasteurised sand mix and pots of each cultivar tested were inoculated with 10,000 eggs of both nematode species.

The nematode treatment was replicated five times for each species and maintained in a glasshouse with plants fertilised fortnightly with a liquid fertiliser (Aquasol®). Tomato cv. Tiny Tim was grown and inoculated as the susceptible control.

At harvest, nematode eggs were stripped from the roots and level of resistance or susceptibility determined.

Rotylenchulus reniformis experiments

Seeds of each plant cultivar or vines of sweetpotato variety were sown directly into 1.5 L pots filled with an 80/20 mix of pasteurised sand mix and a pasteurised red ferrosol field soil obtained from Redlands Research Station. Vines were grown for three weeks before inoculation so that a healthy roots system was available for the nematodes to infect. Pots were inoculated at the rate of 7,396 eggs per pot for the rotation experiment and 14,500 eggs for the sweetpotato cultivar experiment.

The nematode treatment was replicated five times for each species and maintained in a glasshouse with plants fertilised fortnightly with a liquid fertiliser (Aquasol®). Tomato c.v. Tiny Tim was grown as the susceptible control.

At harvest, 16 weeks after inoculation for the rotation experiment or 23 weeks for the sweetpotato cultivar experiment, nematode eggs were stripped from the roots and level of resistance or susceptibility determined.

Pratylenchus zeae experiments

Seeds of each plant cultivar were sown directly into 1.5 L pots of modified UC mix. Pots of each cultivar tested were inoculated with approx. 1000 live juvenile and adult females of *P. zeae*.

The nematode treatment was replicated five times for each species and maintained in a glasshouse with plants fertilised fortnightly with a liquid fertiliser (Aquasol®). Maize cv. Messenger was grown and inoculated as the susceptible control.

At harvest, 13 weeks after inoculation with nematodes, the nematodes were extracted from the roots in a misting chamber over seven days and levels of resistance or susceptibility determined.

Results and discussion

Meloidogyne incognita and *M. javanica* experiments on rotation crops

Thirty-six varieties were resistant or highly resistant to *M. incognita*, *M. javanica* or both. This includes 2 brassicas, 13 legumes and 14 grasses resistant to *M. incognita* and 8 legumes and 14 grasses resistant *M. javanica* (Table 1). Cultivars of eight legumes (ground nut, sunn hemp and pigeon pea), two oats, three grasses and three forage sorghums were resistant to both *M. incognita* and *M. javanica* making these cultivars excellent rotation crops to reduce root-knot nematode numbers when species of root-knot nematode is unknown.

Resistant options suitable for summer (e.g. sorghum) and winter (e.g. oats) were identified to suit different rotation timings.

Table 1 Summary or resistance/susceptibility of potentially useful rotation crop cultivars to two species of *Meloidogyne* spp.

Common name	Species	Cultivar	Species of *Meloidogyne*	
			M. incognita	***M. javanica***
barley	*Hordeum vulgare*	Dictator	Moderately susceptible	Moderately susceptible
barley	*Hordeum vulgare*	Harpoon	Moderately susceptible	Moderately susceptible
barley	*Hordeum vulgare*	Moby	Moderately susceptible	Moderately susceptible
barley	*Hordeum vulgare*	Shepherd	Moderately susceptible	Moderately susceptible
Brassica/radish	*Sinapis alba* (White mustard)/*Raphanussativus* (Doublet oilseed radish)	Biofum	Moderately susceptible	Moderately susceptible
Brassica	*Brassica nigra*	black		Moderately susceptible
Brassica/radish	*Raphanus sativus*	Black Jack	**Highly resistant**	Moderately susceptible
Brassica/radish	*Brassica nigra* (Black mustard)/*Brassica carinata* (Ethiopian mustard (cv. Cappucchino)	BQ Mulch	Moderately susceptible	Moderately susceptible
Brassica/radish	*Brassica juncea*	Caliente	Moderately susceptible	Highly susceptible
Brassica/radish	*Brassica carinata*	Cappucchino	Moderately susceptible	Moderately susceptible
Brassica/radish	*Brassica carinata* (Ethiopian mustard (cv. Cappucchino)/ *Raphanus sativus* (Terranova oilseed radish)	FungiSol	Slightly susceptible	Moderately susceptible
Brassica/radish	*Brassica juncea*	Mustclean	Highly susceptible	Highly susceptible
Brassica/radish	*Raphanus sativus* (Terranova radish)/*Eruca sativa* (Nemat)	Nemasol	Slightly susceptible	Moderately susceptible
Brassica/radish	*Eruca sativa*	Nemat	Slightly susceptible	Slightly susceptible
Brassica/radish	*Brassica napus*	Nemclear	Highly susceptible	Highly susceptible
Brassica/radish	*Brassica napus*	Nemcon	Moderately susceptible	Highly susceptible
Brassica/radish	*Raphanus sativus*	Terranova	**Resistant**	Moderately susceptible
Brassica/radish	*Raphanus sativus*	Tillage radish	Moderately susceptible	Moderately susceptible
buckwheat	*Fagopyrum esculentum*		Moderately susceptible	Highly susceptible
burgundy bean	*Macroptilium bracteatum*		Highly susceptible	Highly susceptible
butterfly pea	*Clitoria ternatea*		**Resistant**	Slightly susceptible
carpet grass, narrowleaf	*Axonopus fissifolius*		Moderately susceptible	**Resistant**
clover, crimson	*Trifolium incarnatum*		Highly susceptible	Highly susceptible

couch, green	*Cynodon dactylon*		Slightly susceptible	Slightly susceptible
cowpea	*Vigna unguiculata*	Caloona	Slightly susceptible	Highly susceptible
cowpea	*Vigna unguiculata*	Ebony	Moderately susceptible	Highly susceptible
cowpea	*Vigna unguiculata*	Red Caloona	Slightly susceptible	Highly susceptible
chicory	*Cichorium intybus*	Commander	Moderately susceptible	Highly susceptible
groundnut, peanut	*Arachis hypogaea*	Alloway	**Highly resistant**	**Highly resistant**
groundnut, peanut	*Arachis hypogaea*	A237	**Highly resistant**	**Highly resistant**
groundnut, peanut	*Arachis hypogaea*	Holt	**Highly resistant**	**Highly resistant**
groundnut, peanut	*Arachis hypogaea*	Kairi	**Highly resistant**	**Highly resistant**
groundnut, peanut	*Arachis hypogaea*	P85	**Resistant**	**Highly resistant**
groundnut, peanut	*Arachis hypogaea*	Wheller	**Highly resistant**	**Highly resistant**
lucerne	*Medicago sativa*	Alfacut	Moderately susceptible	Highly susceptible
lupins	*Lupinus albus*	Luxor	Moderately susceptible	Highly susceptible
maize	*Zea mays*	Monsoon8	Highly susceptible	**Resistant**
medic, snail	*Medicago scutellata*		Highly susceptible	Moderately susceptible
millet	*Echinochloa esculenta*	Japanese	Moderately susceptible	Moderately susceptible
millet	*Echinochloa esculenta*	Shirohie	Moderately susceptible	Moderately susceptible
millet	*Panicum miliaceum*	White French	Moderately susceptible	Moderately susceptible
millet	*Pennisetum glaucum*	Maxa	Moderately susceptible	Moderately susceptible
oats	*Avena sativa*	Algerian	**Resistant**	Slightly susceptible
oats	*Avena sativa*	Austin	**Highly resistant**	Slightly susceptible
oats	*Avena sativa*	Bannister	Slightly susceptible	Moderately susceptible
oats	*Avena sativa*	Carrolup	**Resistant**	Slightly susceptible
oats	*Avena sativa*	Comet	**Resistant**	Slightly susceptible
oats	*Avena sativa*	Culgoa II	Moderately susceptible	Moderately susceptible
oats	*Avena sativa*	Euro	Moderately susceptible	Moderately susceptible
oats	*Avena sativa*	Eurrabbie	**Resistant**	Slightly susceptible
oats	*Avena sativa*	Genie	Slightly susceptible	Moderately susceptible
oats	*Avena sativa*	Kojonup	Moderately susceptible	Highly susceptible
oats	*Avena sativa*	Swan	**Highly resistant**	**Highly resistant**

oats	*Avena sativa*	Williams	**Resistant**	**Highly resistant**
oats	*Avena strigosa*	Saia	Moderately susceptible	**Resistant**
pigeon pea	*Cajanus cajan*		**Highly resistant**	**Resistant**
ryecorn	*Secale cereale*		Moderately susceptible	Highly susceptible
ryegrass	*Lolium ridigum*		Moderately susceptible	Moderately susceptible
sabi grass	*Urochloa mosambicensis*		Resistant	**Highly resistant**
signal grass	*Urochloa decumbens*		**Highly resistant**	**Resistant**
sorghum	*Sorghum* spp.	BMR Octane	Slightly susceptible	Moderately susceptible
sorghum	*Sorghum* spp.	BMR Rocket	Moderately susceptible	**Resistant**
sorghum	*Sorghum* spp.	Dyna Dan	**Resistant**	Slightly susceptible
sorghum	*Sorghum* spp.	Dyna Powa	**Resistant**	**Resistant**
sorghum	*Sorghum* spp.	Jumbo	**Highly resistant**	**Highly resistant**
sorghum	*Sorghum* spp.	Lush	Slightly susceptible	**Highly resistant**
sorghum	*Sorghum* spp.	Scavenger	Moderately susceptible	**Resistant**
sorghum	*Sorghum* spp.	Sprint	Moderately susceptible	Slightly susceptible
sorghum	*Sorghum* spp.	Sugargraze	Highly susceptible	Moderately susceptible
sorghum	*Sorghum* spp.	Sweet Jumbo LPA	**Resistant**	**Resistant**
sorghum	*Sorghum* spp.	Banker	Moderately susceptible	Slightly susceptible
sorghum	*Sorghum* spp.	Lantern	Highly susceptible	Moderately susceptible
sorghum, grain	*Sorghum* spp.	Mr 43	Moderately susceptible	Moderately susceptible
sorghum, grain	*Sorghum* spp.	Mr Buster	Moderately susceptible	Slightly susceptible
sorghum, grain	*Sorghum* spp.	Mr Taurus	Moderately susceptible	Slightly susceptible
soybean	*Glycine max*	A6785	**Resistant**	Moderately susceptible
soybean	*Glycine max*	Bunya	Moderately susceptible	Moderately susceptible
soybean	*Glycine max*	Fernside	**Highly resistant**	Slightly susceptible
soybean	*Glycine max*	Hayman	Slightly susceptible	Moderately susceptible
soybean	*Glycine max*	Kuranda HB1	**Highly resistant**	Moderately susceptible
soybean	*Glycine max*	Moonbie	Slightly susceptible	Moderately susceptible
soybean	*Glycine max*	Mossman	Slightly susceptible	Slightly susceptible
soybean	*Glycine max*	New Bunya	Highly susceptible	Moderately susceptible

soybean	*Glycine max*	Soy 791	Slightly susceptible	Moderately susceptible
soybean	*Glycine max*	Stuart	Slightly susceptible	Moderately susceptible
soybean	*Glycine max*	T013 - 5	**Highly resistant**	Slightly susceptible
soybean	*Glycine max*	T183 - 3	**Resistant**	Slightly susceptible
sunflower	*Helianthus annuus*	Greystripe	Highly susceptible	Highly susceptible
sunn hemp	*Crotolaria juncea*		**Resistant**	**Resistant**
sweetcorn	*Zea mays*	Acceleration	Highly susceptible	Moderately susceptible
sweetcorn	*Zea mays*	Inception	Highly susceptible	Highly susceptible
sweetcorn	*Zea mays*	Messenger	Highly susceptible	Highly susceptible
sweetcorn	*Zea mays*	SV1446SD	Highly susceptible	Highly susceptible
sweet smother grass	*Dactyloctenium australe*		**Highly resistant**	**Highly resistant**
triticale	*X Triticosecale*		Moderately susceptible	Moderately susceptible
triticale	*X Triticosecale*	Crackerjack2	Moderately susceptible	Moderately susceptible
vetch	*Vicia faba*	Popany	Moderately susceptible	Moderately susceptible
wheat	*Triticum aestivum*	Bennett	Slightly susceptible	Highly susceptible
wheat	*Triticum aestivum*	Brennan	Moderately susceptible	Moderately susceptible
wheat	*Triticum aestivum*	Elmore	Slightly susceptible	Moderately susceptible
wheat	*Triticum aestivum*	Illabo	Moderately susceptible	Moderately susceptible
wheat	*Triticum aestivum*	Naparoo	Moderately susceptible	Moderately susceptible
zoysia grass	*Zoysia tenuifolia*		Moderately susceptible	Moderately susceptible

R. reniformis experiments on rotation crops

The reproductive factors of *R. reniformis* in resistant crops were less than 1 indicating that the final populations densities of *R. reniformis* decreased.

Seven potentially useful crops were tested for resistance and six were found not to increase the population of *R. reniformis* on the roots are therefore deemed resistant. These cultivars are Moonson8 maize, Maxa millet, Alloway peanuts, Callide Rhodes grass, Jumbo sorghum, and sunn hemp (Table 2).

Table 2 Summary of resistance/susceptibility of rotation crop cultivars to reniform nematode (*Rotylenchulus reniformis*)

Common name	Species	Cultivar	*Pratylenchus zeae*
maize	*Zea mays*	Monsoon 8	**Resistant**
millet	*Pennisetum glaucum*	Maxa	**Resistant**
peanut	*Arachis hypogaea*	Alloway	**Resistant**
Rhodes grass	*Chloris gayana*	Callide	**Resistant**
sorghum	*Sorghum* spp.	Jumbo	**Resistant**
soybean	*Glycine max*	A6785	Susceptible
sunn hemp	*Crotalaria juncea*	sunn hemp	**Resistant**
tomato	*Solanum lycopersicum*	Tiny Tim	Susceptible

P. zeae experiments on rotation crops

The reproductive factors of *P. zeae* in roots of resistant crops were less than 1 indicating that the final populations densities of *P. zeae* decreased.

Five cultivars of groundnut/peanut were resistant to *P. zeae* while five soybean cultivars were also resistant to *P. zeae.* These include the varieties Alloway, Holt, Kairi, P85 and Wheller peanuts and A6785, Hayman, Kuranda HB1, Mossman and New Bunya soybeans (Table 3).

Table 3 Summary of resistance/susceptibility of rotation crop cultivars to lesion nematode (*Pratylenchus zeae*)

Common name	Species	Cultivar	*Pratylenchus zeae*
groundnut	*Arachis hypogaea*	Alloway	**Resistant**
groundnut	*Arachis hypogaea*	Holt	**Resistant**
groundnut	*Arachis hypogaea*	Kairi	**Resistant**
groundnut	*Arachis hypogaea*	P85	**Resistant**
groundnut	*Arachis hypogaea*	Wheller	**Resistant**
soybean	*Glycine max*	A6785	**Resistant**
soybean	*Glycine max*	Hayman	**Resistant**

soybean	*Glycine max*	Kuranda HB1	**Resistant**
soybean	*Glycine max*	Mossman	**Resistant**
soybean	*Glycine max*	New Bunya	**Resistant**
maize	*Zea mays*	Messenger	Susceptible

Meloidogyne incognita, *M. javanica* and *R. reniformis* experiments on sweetpotato cultivars

Two sweetpotato cultivars were resistant to *M. incognita* while 13 were resistant to *M. javanica*. One sweetpotato cultivar of the six screened was resistant to *R. reniformis* (Table 4).

Early in the project the sweetpotato cultivars Bellevue and Beauregard were tested for their susceptibility to local populations of *M. incognita* and *M. javanica* (Table 4). Information provided was that *M. javanica* would not complete its life cycle on Bellevue. However, Bellevue was moderately susceptible to *M. javanica* with a reproduction factor of 63 (data not shown) and slightly susceptible to *M. incognita* (for which it was breed) with a reproduction factor of 4. In the same experiment Beauregard was highly susceptible to both *M. incognita* and *M. javanica.*

Table 4 Summary of resistance/susceptibility of sweet potato cultivars to two species of root-knot nematode and reniform nematode

Crop	**Cultivar**	**Root-knot nematode**		**Reniform nematode**
		M. incognita	***M. javanica***	***R. reniformis***
sweetpotato	Beauregard	Highly susceptible	Highly susceptible	Susceptible
sweetpotato	Bellevue	Slightly susceptible	Moderately susceptible	Susceptible
sweetpotato	Bonita	Moderately susceptible	**Resistant**	
sweetpotato	Eclipse	Moderately susceptible	Slightly susceptible	
sweetpotato	Murasaki	Moderately susceptible	Moderately susceptible	Susceptible
sweetpotato	Northern Star	Slightly susceptible	**Highly resistant**	Susceptible
sweetpotato	Orleans	Highly susceptible	Highly susceptible	Susceptible
sweetpotato	Southern Star	Moderately susceptible	Moderately susceptible	
sweetpotato	WSPF	Moderately susceptible	**Resistant**	**Resistant**
sweetpotato	New Cultivar 1	Moderately susceptible	**Resistant**	
sweetpotato	New Cultivar 2	**Highly resistant**	**Highly resistant**	
sweetpotato	New Cultivar 4	Moderately susceptible	**Highly resistant**	
sweetpotato	New Cultivar 6	Highly susceptible	Slightly susceptible	
sweetpotato	New Cultivar 7	Highly susceptible	**Resistant**	
sweetpotato	New Cultivar 8	Highly susceptible	**Highly resistant**	
sweetpotato	New Cultivar 9	Moderately susceptible	**Highly resistant**	
sweetpotato	New Cultivar 10	Moderately susceptible	**Highly resistant**	
sweetpotato	New Cultivar 11p	Highly susceptible	**Resistant**	

sweetpotato	New Cultivar 12p	Moderately susceptible	Highly susceptible	
sweetpotato	New Cultivar 13	Moderately susceptible	**Resistant**	
sweetpotato	New Cultivar 14	**Resistant**	Moderately susceptible	
sweetpotato	New Cultivar 15	Moderately susceptible	**Resistant**	
sweetpotato	New Cultivar 16	Highly susceptible	Highly susceptible	
sweetpotato	New Cultivar 17	Highly susceptible	Highly susceptible	

Conclusion

Thirty-six varieties were resistant or highly resistant to *M. incognita*, *M. javanica* or both. This includes 2 brassicas, 13 legumes and 14 grasses resistant to *M. incognita* and 8 legumes and 14 grasses resistant *M. javanica*.

Cultivars of eight legumes (ground nut, sunn hemp and pigeon pea), two oats, three grasses and three forage sorghums were resistant to both *M. incognita* and *M. javanica* making these cultivars excellent rotation crops to reduce root-knot nematode numbers when the species of root-knot nematode in a field/block is unknown or a mix of the 2 species.

Two sweetpotato cultivars were resistant to *M. incognita* while 13 were resistant to *M. javanica*. One sweetpotato cultivar of the six screened was resistant to *R. reniformis* (Table 4).

This resistance screening work has expanded the range of suitable rotation options for sweetpotato growers to help manage a range of plant-parasitic nematode pests. Available varieties may frequently change, especially for crops such as forage sorghum. This assessment of some new varieties, and some crop types which haven't previously been screened, provides a useful update of resistant rotations for the Australian sweetpotato industry. Screening of sweetpotato cultivars for nematode resistance under Australian conditions using locally sourced nematode species provides valuable information on varietal selection for growers.

Image 1 Jennifer Cobon inoculating a potted plant species with nematodes.

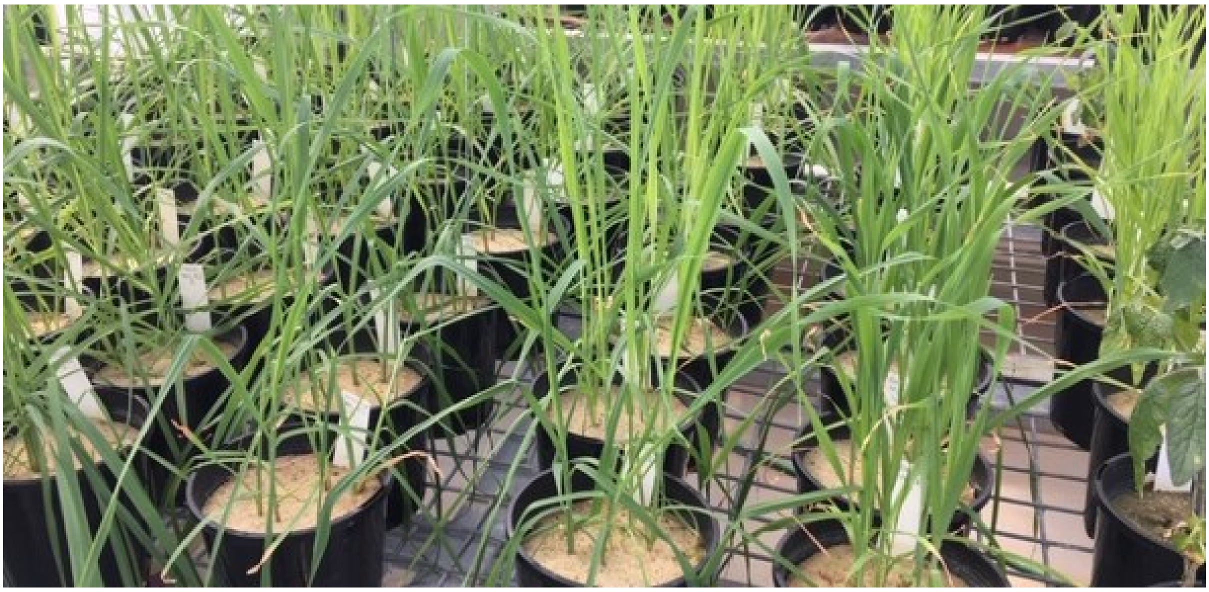

Image 2 Glasshouse pot trials inoculated with nematodes to test the host status of plant cultivars.