Field Day - Parsnip Variety Trial

Presented by DPI Victoria

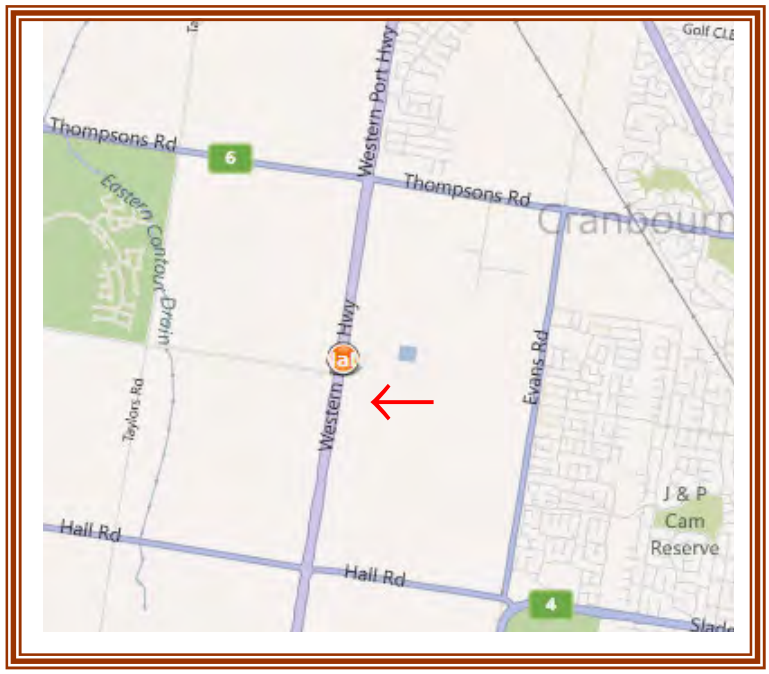
When: Thursday 8th December 2011

2.00 – 3.30pm

Where: Tullamore Gardens Cranbourne

J, D & D Kelly: 620 Westernport Highway Cranbourne Vic 3977

Melways Reference 128 J12



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Dr Dolf de Boer

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Parsnip Variety Trial - Design

Aim: To determine the relative susceptibility of different varieties of parsnip to canker.

The trial: This trial was direct seeded on 19 April 2011 and re-planted on 2 June 2011, due to poor emergence (Fig1, Table 1).

Track	Plot position No.	Rep 1	Rep 2	Rep 3	Rep 4
	13	302-9	Peace	Lancer	Lancer
	12	Thunder	Berliner	Hollow Crown	302-9
	11	300-9	Lancer	Moonshine	300-9
	10	Lancer	Javelin	Standard	Albion
	9	Standard	Moonshine	300-9	Lightning
	8	Berliner	Albion	Lancer	Hollow Crown
	7	Melbourne White Skin	300-9	Melbourne White Skin	Standard
	6	Albion	Thunder	Lightning	Melbourne White Skin
Track	5	Hollow Crown	Melbourne White Skin	Thunder	Moonshine
	4	Javelin	Hollow Crown	Javelin	Berliner
	3	Moonshine	302-9	302-9	Peace
	2	Peace	Lightning	Albion	Thunder
	1	Lightning	Standard	Peace	Javelin

Table 1 Name and source of parsnip varieties

Abreviation on stake	Variety Name	Source
300	300-9	South Pacific Seeds
302	302-9	South Pacific Seeds
AL	Albion	Jonny's Selected Seeds
BER	Berliner	Theitaliangardner
HO	Hollow Crown	New Gippsland Seeds
JA	Javelin	West Coast Seeds; Tozer Seeds US; Territorial Seed C.
LA	Lancer	Jonny's Selected Seeds
LI	Lightning	Clause Vegetable Seeds
MO	Moonshine	South Pacific Seeds
MW	Melbourne White Skin	New Gippsland Seeds
PE	Peace	South Pacific Seeds
STD	Standard	Grower's own
TH	Thunder	Clause Vegetable Seeds

Methods

Twelve plants were sampled from each plot on 2 December 2011. Parsnip roots were weighed and assessed for disease. Parsnip variety Lightning did not germinate and no data was collected. Berliner is a parsley variety grown for its roots. Germination of this variety was also poor. (Statistical analysis of the data is pending).

Results

The relative susceptibility of different varieties to root disease

Javelin had the highest proportion of healthy roots, followed by Albion, 300-9, Thunder, and 302-9. Lancer, Melbourne White Skin, Hollow Crown, Moonshine, Peace and Standard had the least healthy roots (Fig 2).

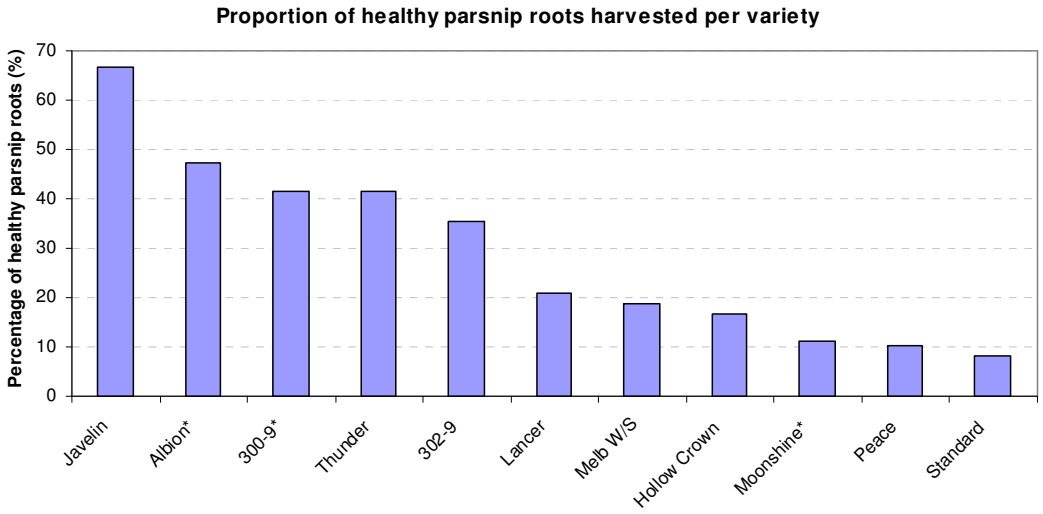


Fig 2 Proportion (%) of healthy roots of 11 parsnip varieties in a field trial at Cranbourne in 2011. Lightning and root parsley Berliner were not included because of very poor germination.

Yield

Yield estimates were based on the weight of 12 roots sampled from each plot and the theoretical number of plants in each plot (highest germination rate). Varieties 302-9, Melbourne, White Skin, Standard, Moonshine and Hollow Crown had the highest total yields. Javelin and 302-9 had the highest yields of healthy roots, whereas Standard and Peace had the lowest yield of health roots (Fig 3).

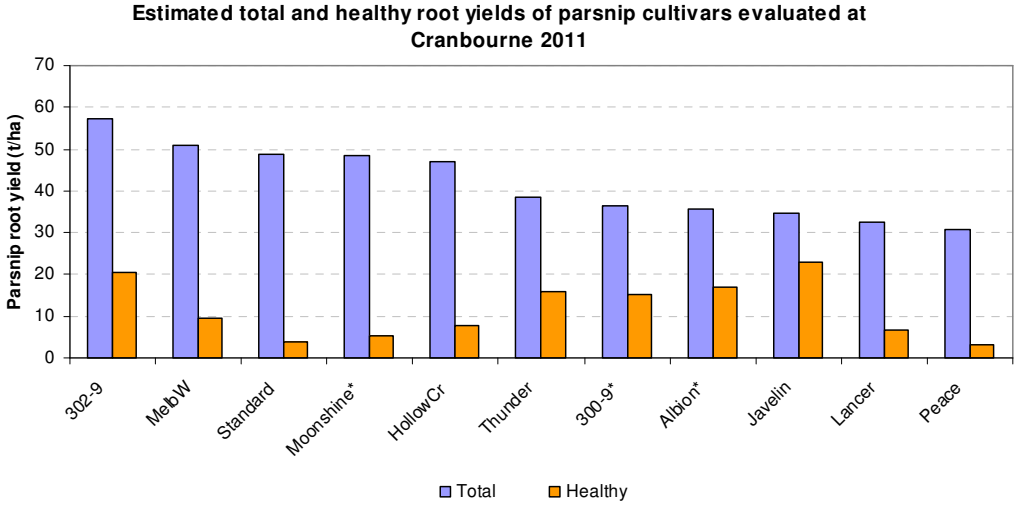


Fig 3 Estimated total yield and yield of healthy roots of 11 parsnip varieties in a field trial at Cranbourne in 2011. (Yields of Lightning and root parsley Berliner were not included due to poor seed germination).

Foliage Colour and Vigour

Method:
At the final assessment (harvest) on 2nd December 2011 (26 weeks) the foliage of parsnip varieties was rated for colour and vigour (height).

The colour of parsnip foliage in each plot was rated on a scale of 1-3 where 1=light green; 2= moderately green; 3=dark green). The vigour of a parsnip variety in each plot was rated on a scale of 1-3 where 1=shortest; 2=moderate height; 3=tallest height of parsnip foliage.

Results:
Foliage Colour: Albion had the lightest coloured foliage, whilst foliage of 302-9, Lancer and Javelin was the darkest (Table 1, Fig 1).

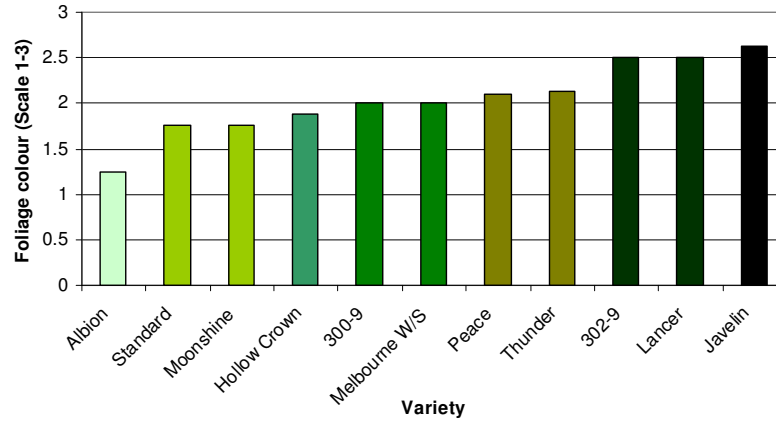
Foliage Vigour: Generally, Albion had the shortest foliage whilst foliage of 302-9 was the tallest (Table 2, Fig 2).

Statistical Analysis: Statistical analyses of this data are pending.

Table 1 Average rating for foliage colour of parsnip varieties

Parsnip variety	Average rating for foliage colour[A]
Albion	1.25
Standard	1.75
Moonshine	1.75
Hollow Crown	1.88
300-9	2.00
Melbourne W/S	2.00
Peace	2.10
Thunder	2.13
302-9	2.50
Lancer	2.50
Javelin	2.63

Fig 1 Average rating for foliage colour[A]

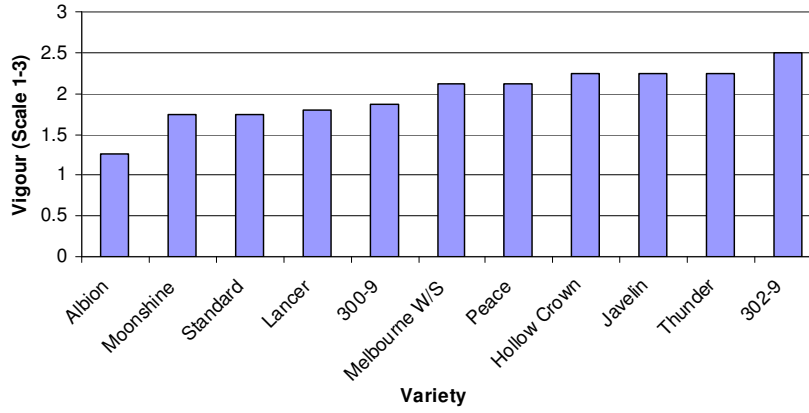


[A], Scale of 1-3 where 1= light green; 2= moderate green; 3= dark green.

Table 2 Average rating for vigour of parsnip varieties

Parsnip variety	Average rating for vigour[A]
Albion	1.25
Moonshine	1.75
Standard	1.75
Lancer	1.80
300-9	1.88
Melbourne W/S	2.13
Peace	2.13
Hollow Crown	2.25
Javelin	2.25
Thunder	2.25
302-9	2.50

Fig 2 Average rating for vigour[A]



[A], Scale 1-3: 1= shortest; 2= moderate; 3= tallest

Itersonilia Leaf Spot on Parsnip Seedlings

Aim:
To determine the relative susceptibility to leaf spot caused by *Itersonilia perplexans* on seedling of different parsnip varieties.

Method:
At 10 weeks of age (19th August 2011) 20 seedlings per plot were assessed for *Itersonilia* symptoms on seedling cotyledons and leaves.

Results:
Varieties Albion, Thunder, 302-9, Javelin, Moonshine and Peace had the lowest incidence of *Itersonila* on seedlings (Fig 2) (Table 1, Fig 4).

Fig 1 Seed planter

Table 1 Relative susceptibility of parsnip varieties to *Itersonila* on 10-week-old seedlings. (Numbers with different letters differ significantly).

Parsnip variety	Company	Incidence of Itersonilia on seedling leaves & stalks (%)
300-9	South Pacific Seeds	80.59 a
Lancer	Jonny's Selected Seeds	77.85 ab
Standard	Grower's own	63.42 b
Melbourne White Skin	New Gippsland Seeds	62.76 bc
Hollow Crown	New Gippsland Seeds	47.38 cd
Albion	Jonny's Selected Seeds	35.52 de
Thunder	Clause Vegetable Seeds	31.66 de
302-9	South Pacific Seeds	28.64 e
Javelin	West Coast Seeds	28.35 e
Moonshine	South Pacific Seeds	27.23 e
Peace	South Pacific Seeds	24.58 e
Berliner (Hamburg parsley)	The Italian Gardner	1.24 f
lsd (5%)		15.9

Fig 2 Symptoms of *Itersonila perplexans* on a seedling

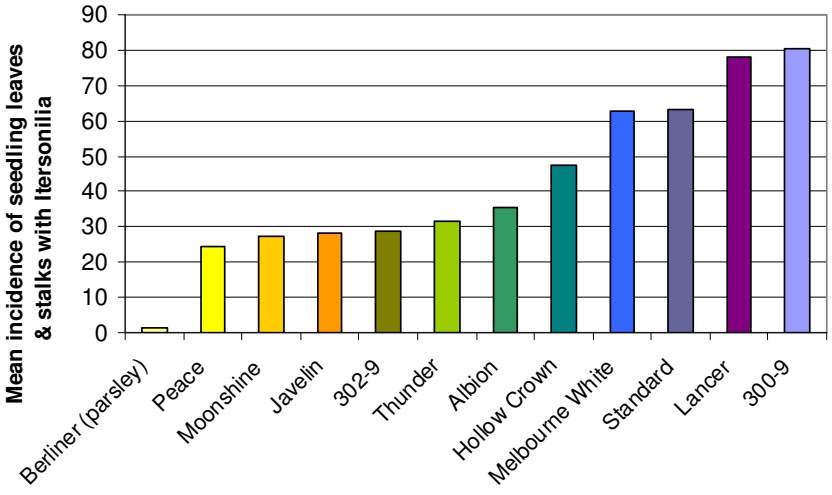


Fig 3 The relative incidence of *Itersonilia* leaf spot on 10-week-old seedlings of different parsnip varieties

Fig 4 Trial site

Photos of the Roots of Different Parsnip Varieties

300-9

302-9

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Albion

Hamburg parsley Berliner

Hollow Crown

Javelin

Lancer

Melbourne White Skin

Moonshine

Peace

Standard (STD)

Thunder