

National Vegetable Industry Centre Newsletter

Seedless Watermelon Trial

Stephen Wade NSW DPI Bathurst

The search for seedless watermelon varieties better suited to Australian conditions remains an industry priority. To evaluate the latest lines, a seedless watermelon variety trial was sown at Eugowra (near Forbes) in the Lachlan Valley (see Table 1).

Table 1. Seedless watermelon trial varieties.

Variety	Seed Company	Shape	Skin Colour
Diamondback	South Pacific Seeds	oblong	mid-dark green skin, darker green stripes
Eloura	Seminis Vegetable Seeds	round	dark green skin, darker green stripes
JTWM 755	Jarit	blocky to oval	olive green skin
JTWM 815	Jarit	blocky to oval	olive green skin
Nightshade	Jarit	round to oval	mid-dark green skin
Royal Armarda	Lefroy Valley	round to oval	mid-dark green skin
Supercrisp 32	Syngenta Seeds	oval	medium green skin, dark green stripes
TWT 4468	Terranova Seeds	round to oval	dark green skin, dark green stripes
TWT 4491	Terranova Seeds	blocky	dark green skin, dark green stripes
WM 1247	Syngenta Seeds	oval	dark green skin
WM 5044	Apex Seeds	round	dark green skin, darker green stripes
WM 5141	Apex Seeds	round	dark green skin
WMS 6545	Lefroy Valley	round	light green skin, dark green stripes
WMS 6546	Lefroy Valley	round	light green skin, dark green stripes
WXMP 3913	Clause Pacific	blocky	dark olive green skin
WXMP 3915	Clause Pacific	round	very dark green skin, dark green stripes

The seedless watermelon variety trial was transplanted on 23 November 2007. It was sited in a commercial Nightshade crop growing on a sandy loam, red brown earth soil. The seedless watermelons were planted on 2.0 metre wide raised beds, with one row per bed and 1.1 metre spacings between plants. An SP-4 Super Pollenizer™ from Syngenta Seeds was planted between every third and fourth watermelon to pollinate the seedless varieties. The watermelons were grown on black plastic mulch and watered with surface drip irrigation.

Table 2. Seedless watermelon trial results.

Variety	Market Yield (≥ 4 kg) (tonnes/hectare)	Large Fruit (> 6 kg) (%)	Medium Fruit (4-6 kg) (%)	Small Fruit (< 4 kg) (%)
JTWM 815	162	92	7	1
WMS 6545	145	97	2	1
WXMP 3913	140	68	28	5
Nightshade	136	98	2	0
Eloura	132	72	12	16
Royal Armarda	130	83	12	6
WM 5044	129	63	34	2
Supercrisp 32	125	92	3	5
WXMP 3915	124	74	18	8
TWT 4491	114	71	20	9
JTWM 755	110	82	9	9
WMS 6546	108	85	6	9
WM 5141	106	73	18	9
TWT 4468	103	49	36	16
WM 1247	95	75	20	5
Diamondback	70	92	0	8
Average	121	79	14	7

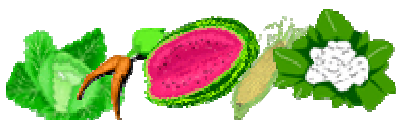
Best Performing Varieties (Above or below average results for each trait are highlighted in yellow).

Market Yield is the yield of fruit 4 kg or larger.

Medium Fruit is the percentage of fruit from 4 to 6 kg.

Large Fruit is the percentage of fruit larger than 6 kg.

Small Fruit is the percentage of fruit less than 4 kg.



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Table 3. Seedless watermelon trial results.

Variety	Fruit Size (≥ 4 kg) (kilograms)	Fruit per Vine	Flesh Brix (%)	Flesh Firmness (kilograms/centimetre ²)
JTWM 815	8.6	4.3	13.0	2.0
WMS 6545	8.3	4.0	12.1	2.5
WXMP 3913	6.6	5.2	12.9	2.1
Nightshade	8.2	3.7	12.9	2.5
Eloura	7.6	6.0	13.9	2.0
Royal Armarda	7.8	4.2	12.7	2.2
WM 5044	6.8	4.5	13.4	1.9
Supercrisp 32	7.9	4.0	13.2	2.0
WXMP 3915	6.8	4.7	12.8	2.0
TWT 4491	7.2	4.5	13.7	1.9
JTWM 755	7.6	4.0	13.2	2.2
WMS 6546	8.4	3.7	12.2	2.7
WM 5141	6.4	4.3	13.1	2.0
TWT 4468	5.9	5.2	13.2	2.1
WM 1247	7.8	3.0	13.6	2.1
Diamondback	8.4	2.3	12.2	2.1
Average	7.5	4.2	13.0	2.1

Best Performing Varieties (Above average results for each trait are highlighted in yellow).

Fruit Size is the average size of fruit greater than 4 kg.

Fruit per Vine is the average number of fruit per vine.

Flesh Brix is the percentage of soluble solids in the fruit flesh.

Flesh Firmness is the resistance of the fruit flesh in kg/cm².

Please note these trial results are based on small, uniform plots where all the fruit were picked at the same time. They should only be used as a GUIDE to ranking varietal performance. The commercial performance of these varieties would depend on a range of factors such as the suitability of the site for growing watermelons, the methods of production used, the variety planted, the uniformity of the crop, the seasonal conditions, the length of the growing season, the market specifications for fruit, the number of pickings, the amount of fruit breakdown and the price of watermelons.

Standard commercial management practices were followed over the growing season. The trial was picked eighty one days after transplanting on 11 February 2008. Each seedless watermelon variety was measured for marketable yield, fruit size, fruit per vine, flesh Brix and flesh firmness (see Tables 2 & 3).

The main traits used for identifying the best performing seedless watermelon varieties in the trial were market yield, large fruit percentage and flesh firmness. Those lines with high market yields also tended to have a high percentage of large fruit, a low percentage of small fruit or fruit culls and a large average fruit size. The flesh Brix results provided a good guide to the fruit sugar levels, as most of the soluble solids in watermelons are composed of sugars. Although there were a range of Brix results in the trial, all of the Brix readings exceeded the minimum market specification of 11 percent. The flesh firmness results provided a rough guide to the fruit storage life and cut fruit shelf life. The Royal Armarda fruit flesh firmness of 2.2 kilograms per square centimetre was used as the minimum flesh firmness value for selecting the best performing seedless watermelon varieties in the trial.

Based on this analysis WMS 6545, Nightshade and Royal Armarda were the best performing seedless watermelon varieties in the trial. The Lefroy Valley variety WMS 6545 (pictured) had high trial plot yields (145 tonnes/hectare), a high percentage of large fruit (97 %), a low percentage of medium fruit (2 %), a low percentage of small fruit or fruit culls (1 %), a large average fruit size (8.3 kilograms), good flesh Brix results (12.1 %) and firm fruit flesh (2.5 kilograms per square centimetre). The Jarit line Nightshade and the Lefroy Valley variety Royal Armarda also produced above average results for most of these traits. These two lines are currently the main seedless watermelon varieties grown in the Lachlan Valley.

For further information on this seedless watermelon variety trial, please contact Stephen Wade District Horticulturist (Bathurst) NSW DPI on 02 6330 1216.



Medium Sized Seedless Watermelon Trial

Stephen Wade NSW DPI Bathurst

The search for seedless watermelon varieties better suited to Australian markets remains an industry priority. To evaluate the latest medium sized seedless watermelon lines, a variety trial was sown at Eugowra (near Forbes) in the Lachlan Valley (see Table 4).

Table 4. Medium sized seedless watermelon trial varieties.

Variety	Seed Company	Shape	Skin Colour
Fashion	Nunhems	round	dark green skin
Ivonna	Nunhems	round	black skin
JTWM 825	Jarit	round	light green skin, dark green stripe
WAT-047	Seminis Vegetable Seeds	round	dark green skin, dark green stripe

The medium sized seedless watermelon variety trial was transplanted on 23 November 2007. It was sited in a commercial Nightshade crop growing on a sandy loam, red brown earth soil. The medium sized seedless watermelons were planted on 2.0 metre wide raised beds, with one row per bed and 1.1 metre spacings between plants. An SP-4 Super Pollenizer™ from Syngenta Seeds was planted between every third and fourth watermelon to pollinate the seedless varieties. The watermelons were grown on black plastic mulch and watered with surface drip irrigation. Standard commercial management practices were followed over the growing season. The trial was picked eighty three days after transplanting on 13 February 2008. Each medium sized seedless watermelon variety was measured for marketable yield, fruit size, fruit per vine, flesh Brix and flesh firmness (see Tables 5 & 6).

Table 5. Medium sized seedless watermelon trial results.

Variety	Market Yield (≥ 4 kg) (tonnes/hectare)	Large Fruit (> 6 kg) (%)	Medium Fruit (4-6 kg) (%)	Small Fruit (< 4 kg) (%)
WAT-047	115	30	53	17
Fashion	113	49	40	11
JTWM 825	115	54	41	5
Ivonna	90	37	57	6
Average	108	43	48	10

Best Performing Varieties (Above or below average results for each trait are highlighted in yellow).

Market Yield is the yield of fruit 4 kg or larger.

Medium Fruit is the percentage of fruit from 4 to 6 kg.

Large Fruit is the percentage of fruit larger than 6 kg.

Small Fruit is the percentage of fruit less than 4 kg.

Table 6. Medium sized seedless watermelon trial results.

Variety	Fruit Size (≥ 4 kg) (kilograms)	Fruit per Vine	Flesh Brix (%)	Flesh Firmness (kilograms/centimetre ²)
WAT-047	5.6	6.0	12.8	2.6
Fashion	6.2	5.2	14.2	2.1
JTWM 825	6.3	4.5	14.3	2.3
Ivonna	5.7	3.8	11.5	2.4
Average	6.0	4.9	13.2	2.3

Best Performing Varieties (Above or below average results for each trait are highlighted in yellow).

Fruit Size is the average size of fruit greater than 4 kg.

Flesh Brix is the percentage of soluble solids in the fruit flesh.

Fruit per Vine is the average number of fruit per vine.

Flesh Firmness is the resistance of the fruit flesh in kg/cm².

Please note these trial results are also based on small, uniform plots and should only be used as a GUIDE for varietal performance.

The main traits used for identifying the best performing medium sized seedless watermelon varieties in the trial were market yield, medium fruit percentage and flesh firmness. Those lines with high medium fruit percentages also tended to have higher yields of medium sized fruit and a medium average fruit size. The flesh Brix results provided a good guide to the fruit sugar levels, as most of the soluble solids in watermelons are composed of sugars. Although there were a range of Brix results in the trial, all of the Brix readings exceeded the minimum market specification of 11 percent. The flesh firmness results provided a rough guide to fruit storage life and cut fruit shelf life. The Royal Armada fruit flesh firmness of 2.2 kilograms per square centimetre in this year's seedless watermelon trial was used as the minimum flesh firmness value for selecting the best performing medium sized seedless varieties in the trial.

Based on this analysis WAT-047 was the best performing medium sized seedless watermelon variety in the trial. The Seminis Vegetable Seeds line WAT-047 (pictured) produced high trial plot yields (115 tonnes/hectare), a high percentage of medium sized fruit (53 %), a medium average fruit size (5.6 kilograms), good flesh Brix results (12.8 %) and very firm fruit flesh (2.6 kilograms per square centimetre).

For further information on this medium sized seedless watermelon variety trial, please contact Stephen Wade District Horticulturist (Bathurst) NSW DPI on 02 6330 1216.

Personal Seedless Watermelon Trial

Stephen Wade NSW DPI Bathurst



The search for seedless watermelon varieties better suited to Australian markets remains an industry priority. To evaluate the latest small sized or “personal” seedless watermelon lines, a variety trial was sown at Eugowra (near Forbes) in the Lachlan Valley (see Table 7).

Table 7. Personal seedless watermelon trial varieties.

Variety	Seed Company	Shape	Skin Colour
Bonnie	Nunhems	round	light green skin, dark green stripes
JTWM 822	Jarit	blocky	light green skin, dark green stripes
Leprechaun	Lefroy Valley	round	dark green skin
Mini Belle	Lefroy Valley	blocky	medium green skin, dark green stripes
TWT 4490	Terranova Seeds	round	medium green skin, dark green stripes
TWT 4417	Terranova Seeds	round	dark green skin, dark green stripe
Valdoria	Nunhems	round	dark green skin
Vanessa	Nunhems	round	dark green skin
WMS 4632	Lefroy Valley	oblong	medium green skin, dark green stripes

The personal seedless watermelon variety trial was transplanted on 23 November 2007. It was sited in a commercial Nightshade crop growing on a sandy loam, red brown earth soil. All the personal varieties except for JTWM 822 were planted on 2.0 metre wide raised beds, with one row per bed and 0.6 metre spacings between plants. JTWM 822 was transplanted on a standard watermelon plant spacing of 1.1 metres. An SP-4 Super Pollenizer™ from Syngenta Seeds was planted between every third and fourth watermelon to pollinate the seedless varieties. The watermelons were grown on black plastic mulch and watered with surface drip irrigation. Standard commercial management practices were followed over the growing season. The trial was picked eighty four days after transplanting on 14 February 2008. Each personal seedless watermelon variety was measured for marketable yield, fruit size, fruit per vine, flesh Brix and flesh firmness (see Tables 8 & 9).

Table 8. Personal seedless watermelon trial results.

Variety	Market Yield (≥ 2 kg) (tonnes/hectare)	Medium Fruit (> 4 kg) (%)	Small Fruit (2-4 kg) (%)	Little Fruit (< 2 kg) (%)
Valdoria	149	31	64	5
Mini Belle	147	52	43	5
Leprechaun	144	37	53	10
WMS 4632	135	50	43	6
Vanessa	132	34	59	7
Bonnie	114	29	67	4
TWT 4490	110	16	72	12
TWT 4417	103	22	71	7
JTWM 822	88	21	68	10
Average	125	33	60	7

Best Performing Varieties (Above or below average results for each trait are highlighted in yellow).

Market Yield is the yield of fruit 2 kg or larger.

Small Fruit is the percentage of fruit from 2 to 4 kg.

Medium Fruit is the percentage of fruit larger than 4 kg.

Little Fruit is the percentage of fruit less than 2 kg.

Table 9. Personal seedless watermelon trial results.

Variety	Fruit Size (≥ 2 kg) (kilograms)	Fruit per Vine	Flesh Brix (%)	Flesh Firmness (kilograms/centimetre ²)
Valdoria	3.6	5.2	11.6	2.5
Mini Belle	3.9	4.7	12.5	2.8
Leprechaun	3.7	5.5	13.9	2.7
WMS 4632	3.9	4.4	13.2	2.3
Vanessa	3.4	4.9	11.7	2.3
Bonnie	3.5	3.9	13.4	2.0
TWT 4490	3.1	4.9	13.4	2.4
TWT 4417	3.2	4.1	12.0	2.3
JTWM 822	3.1	7.5	12.4	3.1
Average	3.5	5.0	12.7	2.5

Best Performing Varieties (Above average results for each trait are highlighted in yellow).

Fruit Size is the average size of fruit greater than 2 kg.

Flesh Brix is the percentage of soluble solids in the fruit flesh.

Fruit per Vine is the average number of fruit per vine.

Flesh Firmness is the resistance of the fruit flesh in kg/cm².

Please note these trial results are also based on small, uniform plots and should only be used as a GUIDE for varietal performance.

The main traits used for identifying the best performing personal seedless watermelon varieties in the trial were market yield, small fruit percentage and flesh firmness. Those lines with high market yields and high small fruit percentages produced the highest small fruit yields. The flesh Brix results provided a good guide to the fruit sugar levels, as most of the soluble solids in watermelons are composed of sugars. Although there were a range of Brix results in the trial, all of the Brix readings exceeded the minimum market specification of 11 percent. The flesh firmness results provided a rough guide to fruit storage life and cut fruit shelf life. The Royal Armada fruit flesh firmness of 2.2 kilograms per square centimetre in this year's seedless watermelon trial was used as the minimum flesh firmness value for selecting the best performing varieties in the personal seedless watermelon trial.

Based on this analysis Valdoria, Mini Belle and Leprechaun were the best performing personal seedless watermelon varieties in the trial. The Nunhems variety Valdoria had high trial plot yields (149 tonnes/hectare), a high percentage of small fruit (64 %), a small average fruit size (3.6 kilograms), fair flesh Brix results (11.6 %) and firm fruit flesh (2.5 kilograms per square centimetre). The Lefroy Valley varieties Mini Belle and Leprechaun (pictured) also produced above average results for most of these traits.

For further information on this personal seedless watermelon variety trial, please contact Stephen Wade District Horticulturist (Bathurst) NSW DPI on 02 6330 1216.



Australian Melon Conference Report

Information, markets and watermelon promotions

Gerard Kelly, NSW DPI, Dareton

The 8th Australian Melon Conference was held 4 to 7 March 2008 at Ipswich, near Brisbane and was attended by around 190 delegates from a wide cross section of industry. Early in the program visits were conducted to a Woolworths supermarket retail store, Woolworths distribution centre and the Brisbane Markets. At the Brisbane Markets, participants engaged energetically in a facilitated forum. Issues about melon supply, price and quality were discussed by growers and wholesalers. Planning production, growing appropriate varieties and rejection of inferior quality in periods of oversupply were some contentious points raised.

In another forum, the role and future opportunities for the melon industry were discussed. Opportunities for promoting watermelons and funding methods were the focus of attention. The pros and cons of raising an industry levy to fund promotion were argued and investigations about introducing a levy have commenced. Key watermelon growers, including Mark Daunt (pictured on next page) and Paul McLaughlan, are keen to hear from other watermelon growers about the introduction of a levy to fund promotional activities.

At a melon field day at Gatton, eight national seed companies displayed rockmelon and watermelon varieties. Unfortunately heavy rainfall had an adverse effect on some plots which were affected by disease. Companies also had trade booths and displays of popular varieties as well as information to hand out. There were other technical displays and demonstrations at the field day that supported the best practice theme. These covered pest and disease management, soil moisture and irrigation monitoring, dam covers, melon quality assessment and spray application. These displays were very popular amongst the participants and rated highly in the evaluation.

There were many popular talks at the conference. Barry Bull, Yara Asia presented a talk about 'Melon Nutrition' for producing high quality melons. Information about specific nutrients and their role to quality crop and fruit production was presented.



Mark Daunt examining some new varieties at the conference field day

With the ability to measure and monitor nutrient levels in crops growers can take advantage of nutrient services available to implement improved practices for high quality crops. A presentation by Shaun Jackson, of South Pacific Seeds 'Vegetables are too cheap - A real perspective' highlighted the advances melon producers in overseas countries are implementing to meet market demands. His talk covered themes of commitment to high quality production, excellence in technical agronomic practices, innovation in production and marketing techniques and sensible business practices to remain relevant to markets.

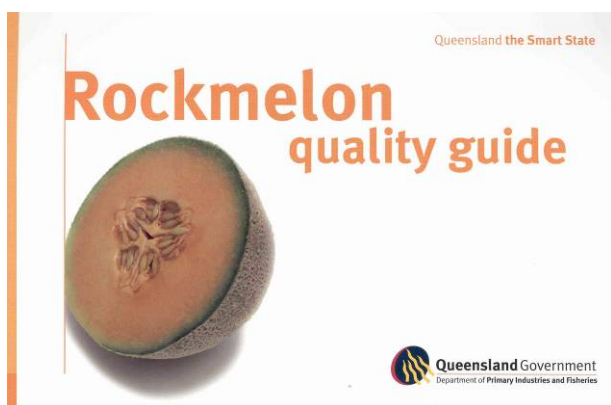


Demonstration of a Jacto sprayer

For further information on the Australian Melon Conference at Ipswich, please contact Gerard Kelly District Horticulturist (Dareton) NSW DPI on 03 5019 8406.

Melon Quality Guides

The recently published watermelon and rockmelon quality guides and melon quality assessment and brix testing were highlighted at the Australian melon conference. These resources offer businesses in the supply chain a set of common terms to communicate about quality characteristics of watermelons and rockmelons.



The quality guides can be purchased from the Australian Melon Association for \$16.50 each. To obtain a copy of these guides, contact Patrick Logue, Melon Industry Development Officer on 07 4153 2555 or email ido@melonsaustralia.org.au

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