



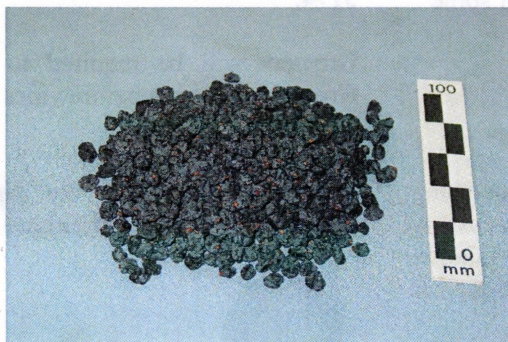
CSIRO PLANT INDUSTRY

Dried Grape Varieties Fact Sheet

Black Gem™ – an early ripening, disease resistant currant variety for drying

A new, early ripening, disease resistant currant variety, M 48-42 (syn. Black Gem)™ has recently been released by CSIRO. Provisional Plant Breeders Rights (PBR) for M 48-42 (syn. Black Gem)™ was granted in March 2011, (PBR no. 2011/18). Black Gem™ resulted from the cross of Seyve-Villard 39-639, a complex multispecies, disease resistant hybrid and Beauty Seedless, a black, early ripening table grape variety with the aim of combining disease resistance with early ripening. The cross was made at CSIRO Merbein in 1980 and first assessed between 1985 and 1988.

Black Gem™ is a self setting, early ripening, disease resistant currant type with high fruitfulness, a distinctive flavour and high levels of antioxidants for an added health bonus. It is primarily a dried fruit variety which has also shown potential for juice, wine production and as a table grape variety for niche markets.



Management systems and planting spacings:

Black Gem™ has inherently low vigour and requires grafting on high vigour rootstocks to promote a large canopy, achieve adequate yield and develop longer replacement canes, particularly for trellis drying on cordon-based systems. Management on modern, cordon-based trellis systems with hanging canes to facilitate trellis drying has proven difficult because canes arising from the cordon may be too short for

attachment to lower wires. However, adequate development of replacement canes has been achieved using shorter cordons, a result which suggests that closer vine spacings should be used to optimise production, i.e. 1.8-2.0 m. Vine spacings will depend on soil type, trellis type and rootstock used. Black Gem™ produces a high number of bunches on the cordon which require removal. This has been achieved by spraying inflorescences prior to flowering, using practices developed for other varieties, or by hand harvest of bunches and placement on the trellis wire for drying.

Suitable rootstocks:

Black Gem™ is compatible with a wide range of rootstocks, with best results achieved to date by grafting on Ramsey, 1103 Paulsen and 140 Ruggeri. Dry yields of around 8t/ha were achieved with cane pruned vines managed on a narrow T-trellis on these rootstocks.

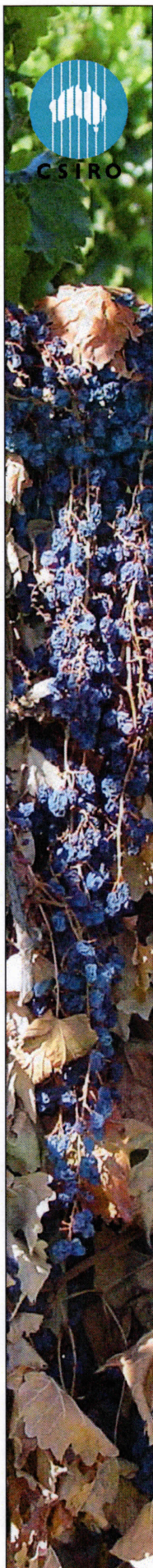


Setting sprays:

Black Gem™ is highly fruitful and unlike Carina and Zante Currant does not require treatment with growth regulators to achieve a good fruit set.

Susceptibility to pests and diseases:

Vines of Black Gem™ have shown higher levels of resistance to downy and powdery mildews than other drying grape varieties. Consequently it can be managed potentially with no or minimal application of fungicides for mildew control. Its disease resistance was confirmed during the very difficult 2011 season which experienced record breaking rain events, high humidity, cool conditions and vineyard flooding during spring, summer and early autumn.



Rain tolerance:

Black Gem™ is more tolerant of rain than Zante Currant. However berry splitting has been observed in wet seasons, particularly of the ripest berries. These split berries usually drop from the bunch or dry rapidly without development of moulds. For example in 2011 the product was of high quality despite some berry splitting occurring following major rain events in both January and early February (i.e. a total of 357 mm prior to cane cutting for trellis drying).

Bunch structure and berry size:

The bunch structure is reasonably loose when compared to Zante Currant and is suited to trellis drying. Black Gem™ has fresh berry weight ranging from 0.6 to 0.9 g, which is similar to Carina and Zante Currant.

Maturity:

Black Gem™ ripens at a similar time to Zante Currant in mid-late January about 3 weeks earlier than Carina. Optimum maturity levels for drying, of 23.0 °Brix, were achieved at this time.

Product type and quality:

The dried product of Black Gem™ is considered a 'currant type' which is similar to the dried product of Carina. However it has a more attractive spicy flavour when dried than either Zante Currant or Carina, which could offer an advantage over other currant varieties for some markets.

Storage and processing:

The fruit stores very well prior to processing. Capstems are easily removed during processing, when treated as a currant type, ensuring minimal skin damage and maintenance of product quality.

Health properties:

Dried berries from Black Gem™ have been shown to have high levels of anti-oxidants (approximately 3-fold higher than Zante Currant and 30% higher than Carina). In a further study, juice of Black Gem™ had higher levels (20%) of anti-oxidants than found in prune juice.



Grower returns:

Yields of Black Gem™ will be more consistent than Zante Currant but are likely to be lower than Carina. Management techniques to optimise yields are still being developed. Adoption of Black Gem™ should provide considerable savings from reduced spray inputs and a reduced requirement for dehydration due to its early harvest. Extra returns may be achieved by targeting alternative markets, e.g. for organic produce, and potentially for juice and fresh fruit production.

Further information and material availability:

Dried Fruits Australia has been appointed by CSIRO and Horticulture Australia Ltd as the commercialiser for Black Gem™. Growers wanting information or seeking to obtain grafted vines should contact Dried Fruits Australia on (03) 5023 5174.

Growers will be required to sign a Registered Grower agreement before vines can be supplied.

CSIRO acknowledges the support of the dried grape industry and Horticulture Australia Ltd.



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