

Benton citrange



Origin

In 1945, a citrus rootstock breeding programme was initiated by Dr. F T Bowman of NSW Agriculture, in an attempt to obtain rootstocks compatible with Eureka lemon that were also *Phytophthora* resistant and tolerant of citrus tristeza virus. From this programme, the Benton citrange, a hybrid of Ruby Blood sweet orange and *P. trifoliata*, was selected and has performed well as a rootstock for Eureka lemon in a number of replicated trials on the Central Coast of NSW (Freeman *et al.*, 1986; Sarooshi and Broadbent, 1992, Hardy and Gallasch, 2004) and at Yanco (Long *et al.*, 1978).

Seed was first released to the industry in 1984. There are many commercial lemon plantings using this rootstock which have been established since 1990, but poor seed production in the seed source trees was an impediment to its widespread use. The seed production issues have now been improved.

Tolerance to environmental and soil conditions.

Not very tolerant of high salinity or calcareous soils. Moderately cold and drought tolerant. Performs well on both virgin and replant soils.

Pest and disease

Benton citrange is *Phytophthora* and tristeza tolerant. Overseas reported to be tolerant to citrus nematode.

Field performance

With Eureka lemon it produces trees of an intermediate size with good cropping efficiency. Being relatively compact they are more manageable than trees on the more vigorous Rough lemon. Possibly a later maturity time than that of Rough lemon. When used as a rootstock for Eureka, Fino and Verna lemons, Benton was a top performer in field experiments situated near Renmark (SA), Nangiloc (Vic) and Gosford (NSW). These field trials were planted between 1994 and 1998 and included both replant and virgin soils. Fruit quality characteristics are also good for Eureka lemon on Benton with good juice content and skin thickness.

Promising early results have been obtained in Queensland with certain mandarin varieties, giving high yields and good fruit quality. Longer term Australian results with oranges have been less encouraging.

Nursery performance

It is not a vigorous nursery stock. It is a frustrating nursery plant because seedlings are bushy and difficult to

Benton citrange rootstock fact sheet

Advantages

- ✓ **Phytophthora tolerant**
- ✓ **tristeza tolerant**
- ✓ **good fruit quality**
- ✓ **compatible with Eureka lemon**
- ✓ **good cropping efficiency**
- ✓ **good fruit quality**
- ✓ **suitable for replant sites**

Disadvantages

- ✗ **can be difficult to bud**
- ✗ **not suitable for calcareous soils**
- ✗ **sensitive to salinity**

bud. In Florida some nurserymen cut them back severely to induce a single vigorous shoot from the base that then becomes the stem which is budded. Once budded the tree grows normally in the nursery. Seed can also be sown at high density in flats and seedlings transferred to individual pots once they reach about 30cm in height.

Overseas experience

Benton citrange has been trialled with a range of scions in areas including South Africa, California and Florida. Promising results have been obtained in some areas.

State of knowledge



Disclaimer:

Information contained in this publication is provided as general advice only. For application to specific circumstances, professional advice should be sought.



Auscitrus

Growers should ensure that trees are propagated from true to type, disease free seed and Premium budwood obtained from Auscitrus

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