

C-35 citrange



Origin

C-35 was bred by the University of California and released in 1987 (Cameron and Soost, 1986). It has the same parentage as Benton citrange (hybrid of Ruby Blood orange and *P. trifoliata*).

Tolerance to environmental and soil conditions

This information is obtained from data overseas. Frost tolerance good and similar to Carrizo citrange. More sensitive to calcareous soils than Carrizo citrange. Not very tolerant to high salinity. C35 has better tolerance to low iron levels (high pH soils with high levels of available calcium) than Swingle citrumelo and trifoliolate orange. Suitable for replant sites. Susceptible to zinc and manganese deficiencies.

Pest and disease

Tolerant to tristeza virus and less susceptible to *Phytophthora* root rot than Troyer citrange. Tolerant to the citrus nematode (*Tylenchulus semipenetrans*). Budwood for propagation on this stock should be obtained from Auscitrus to ensure freedom from citrus exocortis viroid (CEV) and other viroids, which cause dwarfing and tree decline and from citrus tatter leaf virus to which trifoliolate orange hybrids are sensitive resulting in a yellow ring at the bud-union.

Field performance

In shallow sandy to sandy loam soils at Loxton Research Centre, (South Australia) C-35 is currently performing well in a rootstock comparison experiment with seven other rootstocks. The scions are early, mid and late season varieties of navel orange. Trees were planted in 1997. It is also one of ten rootstocks being compared under mid and late season mandarins, again at Loxton, but this time planted in 2002 and in slightly deeper soils. A mandarin experiment in Queensland is comparing C-35 with nine other rootstocks, and has not as yet shown any particular advantage of C-35. It causes pronounced "benching" at the graft union with Imperian mandarin, but this has not yet lead to tree decline. These experiments will soon be supplying more information on the performance of C-35.

Nursery performance

Percent nucellar seedlings are lower than for Troyer citrange which demands identification and destruction of 'off-type' stock prior to budding.

Fruit quality

Fruit quality is good and comparable to Carrizo citrange.

C-35 citrange rootstock fact sheet

Advantages

- ✓ **Phytophthora tolerant**
- ✓ **drought tolerant**
- ✓ **nematode resistant**
- ✓ **cold tolerant**
- ✓ **tristeza tolerant**
- ✓ **medium sized trees**
- ✓ **good fruit quality**

Disadvantages

- ✗ **dislikes clay soil**
- ✗ **sensitive to high salinity**
- ✗ **reportedly sensitive to calcareous soils**

Scion compatibility

C-35 has shown incompatibility with Yen Ben lemon in New Zealand.

Overseas experience

This rootstock was bred in California, and within 10 years of its release, it is being used widely on navels especially in the San Joaquin Valley. This is mainly because of its excellent yield efficiency i.e. for each cubic metre of canopy volume, it produces more kilograms of fruit than other rootstocks.

Overseas it produces medium sized trees about 25% smaller than Carrizo citrange. Good performance has been obtained under grapefruit, navels and valencia oranges in the USA and South Africa.

In New Zealand, with Clementine mandarin, C-35 has produced high yielding trees with good fruit size and internal quality. Trees on C-35 are more vigorous than those on *P. trifoliata*, but in a similar trial where satsuma mandarin is the scion variety, the vigour of C-35 has slowed down as the trees began bearing heavy crops.

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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