

# Eureka Seedless Lemon

## Origin

The Eureka Seedless is an irradiation-induced mutation of the Eureka lemon bred by the Agricultural Research Council. The selection was released in South Africa around 2000.

## Ownership

Agricultural Research Council.

## General Description

A seedless Eureka selection.

## Tree Characteristics

Similar vigour and spreading growth habit to the standard Eureka lemon.

## Rootstock Options

Probably the same incompatibility with trifoliolate orange and its hybrids as Eureka. Note that Eureka is not compatible with trifoliolate orange and its hybrids except Benton citrange, X639 (Cleopatra mandarin x trifoliolate) and Minneola x Trifoliolate. Eureka on the latter two hybrids has performed well in South Africa.

## Fruit Characteristics

The Eureka Seedless has not produced as well as standard Eureka to date with the result that fruit size has been larger. The fruit is not as robust as Eureka and does not have as many different fruit sets causing the picking window to be shorter. As a result in the Sundays River Valley, the largest lemon growing area in South Africa, Eureka seedless is picked for only 10 to

12 weeks while standard Eureka is picked for 26 to 27 weeks. Mature fruit drop easily. The fruit is slightly more elongated than Eureka with high shoulders, resulting in low pack-out percentages. Juice levels are good and the fruit is completely seedless.

## Production

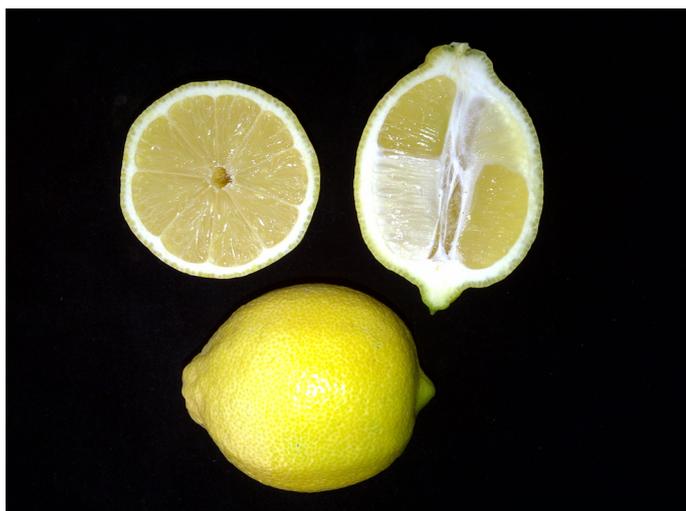
Production is less than standard Eureka ranging from 10 to 55 tons/ha when trees are manipulated with Gibberellic Acid (GA) and girdling for increased fruit set.

## General

Fruit set and size need to be manipulated for Eureka Seedless Lemon. It is susceptible to sunburn and wind blemish. Thrips can be a problem in certain areas as well as Citrus Black Spot. Harvest, packing and shipping requirements are the same as for normal Eureka. However, Peteca spot can be a problem in certain years. The cause of this condition is still not known with any certainty. Endoxerosis which is a form of granulation can occur in well coloured, over mature fruit, depending on area and climate.

## Status, Area Suitability and Availability

Since release the Eureka Seedless has been planted fairly extensively. It should be suited to all areas where Eureka is commercially grown, i.e. all climatic zones in South Africa except the very cold coastal areas and possibly semi desert areas. It has however shown to be sensitive to fruit set even in cooler areas such as the East Cape. This has led to reduced crops of larger fruit, reducing quantities of exportable fruit. Commercial quantities of propagation material are available from the Citrus Foundation Block.



Eureka Seedless fruit showing the complete absence of any seeds



Thirteen year old Eureka SL Lemon tree on Rough Lemon showing typical vigorous growth and tree shape (height 2.9 m)



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## Key References

The information in this fact sheet is based on reports from Eureka seedless growers compiled by Citrus Research International.

## Evaluation Data

### Internal Quality

Data still to be included.

### Count Distribution

<b>Count</b>	<b>64</b>	<b>75</b>	<b>88</b>	<b>100</b>	<b>113</b>	<b>138</b>	<b>162</b>
<b>%</b>	8	14	25	26	18	7	2

### Production

On 10 year old trees, 132 Kg per tree and 55 tons per hectare at 6m x 4m spacing (417 trees/ha).

### Export %

<b>Grade</b>	<b>Percentage</b>
<b>1</b>	65
<b>2, 3 &amp; 4</b>	35

### Comments

The Eureka Seedless has a number of problems that are presently limiting its further expansion as a commercial cultivar in South Africa. These problems are not due to the Eureka Seedless in the Citrus Improvement Scheme being unstable horticulturally, but apparently due to it being less productive than the standard Eureka. This results in a number of unacceptably large sizes which reduces export percentages. In areas where fruit set has been manipulated through girdling, *Phytophthora* problems were enhanced. It is also a less hardy fruit than the standard Eureka Lemon and other Lisbon types. In addition very few growers have earned premiums to date for the seedless fruit. When this is added to the royalties payable on this fruit it cannot compete income wise with the standard Eureka lemon. Should larger quantities of fruit become available over a longer period in future it should be possible to establish a programme that highlights its seedlessness and thus receive the premiums expected of seedless fruit.



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