

# Riberry Production

**Family: Myrtaceae**

**Genus: *Syzygium***

**Species: *luehmannii***

## Introduction

Riberry fruit is basically not a fresh fruit and is used in sauces, drinks, jam, chutney, cakes and other products after processing. It has typically been harvested from native trees on the east coast of Australia but is now produced from plantations and amenity planted street trees. Several plantings have now been made on the south coast of NSW, Victoria and South Australia.

In the past, most fruit that reached processors and restaurants (the main markets) was harvested from the wild. Market demand for consistent year-round supplies, combined with concerns over the environmental impact of wild harvesting in the often fragile and fragmented littoral rainforest and subtropical rainforest systems, means that cultivated plantings have increased in importance.

## Description

Medium-sized to large tree which grows in littoral and sub-tropical rainforest on the east coast of NSW and Southern Queensland (Kempsey, NSW to the Sunshine Coast, Qld.). Cutting-grown plants usually do not grow to the same size as seed-grown trees and typically are large shrubs to small trees. Fruit is a pink to red berry, 6mm – 12mm long and 5mm – 10 mm diameter with white flesh that has a spicy “cinnamon” flavour. The fruit contains a single seed and some selections propagated vegetatively produce a large number of seedless fruit.

## Climatic and soil requirements

Riberries grow naturally in a sub-tropical climate. However they can tolerate quite low temperatures in winter and mild frost, particularly after establishment. No damage has been shown to occur with temperatures as low as 0°C. High summer temperatures, whilst flowering and particularly fruiting, can be a problem (see water requirements).

Riberries grow well in both sandy and clay-based soils. pH in natural conditions varies from 4.5 – 5.5. Plants grow well in soils of 5.5 to 6 which can allow for effective nutrient uptake when a fertilization program is used. Sandy soils benefit from a reasonably high level of organic matter, minimising the need for irrigation. Clay soils need to be moderately drained (planted on a sloping field or a small mounding of rows, 250mm – 500mm high). Mulching rows is beneficial for moisture retention and weed suppression plus adding organic matter to the soil.

## Canopy management

Plants need to be pruned within the first year to provide a “shrubby” shape consisting of several main trunks, usually 3 or 4 from a single trunk that should be between 500mm and 800mm high from ground level. Plants can then be lightly shaped in subsequent years to allow light to penetrate within canopy. The majority of fruit is produced on the ends of growth that has matured during the year.

Heavy pruning will result in reduction of the subsequent years’ fruit crop and should only be carried out if trees are getting too large to harvest easily. This can be managed by net harvesting and an appropriate plantation design.

## Plantation layout

Plantation layout needs to take several variables into account:

- Slope and field orientation. Northerly aspects and slopes maximise sunlight, especially during winter, particularly on the east coast of NSW/Qld. Maximising sunlight should be a priority in any locality.
- Ideally, orientation of rows should be north/south to provide equal amount of sunlight to all plants all-year round. This is not always possible due to slope and or land shape. A balance needs to be found between being able to effectively mow/slash and access between rows with machinery, minimise erosion and maximise sunlight.
- Cutting grown plants need to be at least spaced at 2.5m, 3.5m is optimum with no heavy pruning needed for at least 5 years. A 5m inter-row spacing allows for tractor access for slashing, tree maintenance and harvesting. This planting density will provide 530 plants per Ha. Seed grown plants can grow much bigger and could need greater spacing in the rows.
- Mono-cropping ribberries can increase problems particularly with scales and sooty moulds. Consideration should be given to designing plantings that incorporate other species, whilst retaining ease of harvesting and maintenance. Other species can be used as edge plantings (also see wind protection)

## Wind protection

As Ribberries flower and fruit during spring and summer, any wind protection needs to take prevailing winds during this period into account, along with protection from anywhere strong wind might impact on the plantation. Native windbreaks can add biodiversity values to the plantation area, reduce moisture requirements and provide habitat for insect predators and flower pollinators.

## Varieties

Several selections and hybrids have been made from naturally occurring or seed-grown planted trees. These have been made on various qualities such as “seedlessness”, size of fruit and flavour and propagated vegetatively to provide a known selection for commercial production (eg Glovers Seedless, Vic’s Choice). Some value-adding processes require none or very small amounts of seed whilst with

others, having seed is not a problem. Plants are available from selected nurseries on the east coast of NSW and Qld.

### **Water requirements**

At the moment there is only limited information available on the water requirements of ribberries. Some observations and factors that should be considered are:

- Excessive irrigations, leading to extended periods of waterlogging, should be avoided. Ribberries will however, perform well in sandy soils even with extended periods of natural waterlogging.
- Ribberries grown within their natural range will grow, flower and fruit without irrigation – plants still need watering during establishment. Some plantations are producing well with no permanent irrigation set up.
- Extremely dry soil conditions should also be avoided.
- Within their range, plants normally experience a wet summer/autumn and dry winter/spring rainfall pattern.
- During the fruiting period adequate moisture is necessary, particularly during periods of high temperatures. Fruit can suffer sunburn which expresses itself as a white to clear shrunken portion on the fruit which extends all over the fruit and makes it unsaleable. Adequate moisture during these periods can limit damage.
- Adequate moisture is also desirable after fruiting during autumn to allow for growth for the next season.

Most importantly, growers should monitor and record their irrigations and soil moisture status using instruments such as tensiometers. This will help them and their advisors assess their current situation and practices, identify any problems and refine their future management.

### **Nutrition**

As with water requirements, at the moment little is known of the nutrient requirements of ribberries. As experience with the crop accumulates firmer guidelines and objective assessment techniques, such as leaf analyses, will become available. Until then, some general principles should be kept in mind when designing a fertilizer program:

- Many Australian native plants are intolerant of high phosphorus levels, so a relatively low P fertilizer, suitable for natives, should probably be used.
- In the first season following establishment the aim should be to maximise growth to develop a good plant structure and produce several flushings of next season's fruiting wood. Therefore frequent but relatively small fertilizer applications, particularly of nitrogen and potassium are probably warranted.
- Once established, restricting nutrient availability may be necessary to avoid excessive vegetative growth in spring and stimulate flowering. Therefore it may be advisable to avoid or restrict fertilizer applications in spring.

- After harvest, vegetative growth, which will form next year's fruiting wood, should be encouraged.
- A complete micronutrient foliar spray may be advisable in late winter / spring as flowers are being initiated.

## **Pest and diseases**

Ribberries can be affected by scale insects and associated sooty moulds. Natural oil sprays can efficiently control scales and remove moulds.

Riberry fruit can be attacked by a seed borer but this has not yet become a problem for commercial production.

Birds, which commonly damage many berryfruits, are not at present a problem within the natural range.

## **Harvesting and handling**

On the east coast of Australia, ribberries produce fruit from late November to mid January. Plantings further south have produced fruit later into February. Fruit can be picked by hand into fruit picking bags or containers. Using nets under trees has been trialled and found to be successful. Fruit needs to be picked daily and sorted and frozen immediately. Fruit will store for short periods of up to two weeks if placed in refrigerated cool rooms but needs to be frozen (-16°C to -24°C) to keep for long periods. Frozen fruit will remain in good condition for up to two years.

## **Yields**

Yields increase every year and can vary with variety and climate. Mature trees have been known to produce up to 70 kg. Cutting grown plants can produce fruit from the second year of growth and have been shown to produce 3-5 kg of marketable fruit per tree in the third year. Yields in areas outside their natural range have not yet been quantified.

## **Economics**

Fruit price has varied considerably in the past, depending on buyer. Farm-gate prices can vary from \$12 to \$15 but production costs indicate that this price would possibly be a minimum for a sustainable plantation industry selling frozen fruit all year round.

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## Further information



Plantation layout



Plantation rows



Riberry fruit



Hand picking



Harvesting using nets



Sorting cleaning and packing



Frozen fruit.



Pruning and thinning