Raspberry growing in Tasmania

Suitability factors for assisting in site selection

There are many varieties of raspberry (*Rubus idaeus*.), with varying climate requirements. Care needs to be taken to select a suitable variety. The two main raspberry types grown commercially are:

1. Floricane (summer fruiting) which produce fruit on canes grown in the previous season, and
2. Primocane (autumn fruiting) which produce fruit on the current season's cane

Growth stages

Timing of key growth stages is influenced by climate and variety. In Tasmania, field-grown raspberries break bud during September. Floricane varieties generally flower from mid-October to mid-December, with primocane varieties flowering from late December through to March. Harvest of floricane varieties is from December through to January with primocane varieties fruiting from late January through to April. Some floricane varieties will have an additional small fruit crop in late autumn.

Growers may manipulate the timing of growth stages by various crop management strategies including planting date, pruning, pre-plant treatments such as chilling and the use of protected cropping in tunnels to extend the growing season.

Climate

The primary climate factors that contribute to a successful raspberry crop are the temperature at key growth stages and dry conditions at harvest. Many growers use windbreaks and overhead shelters to protect their crops from the extremes in weather. High tunnel production of raspberries is increasing.

As a deciduous plant, raspberries have a chill requirement to overcome dormancy of flower and leaf buds. For floricane varieties, a general value of >800 chill hours between 0°C and 7°C from May to September inclusive can be used to assess potential site suitability. Although primocane varieties generally have a lower chill requirement, chilling reduces the time to flowering and can increase the number of flowers.

Frost during flowering can damage or kill flowers and young fruit. Growing the crop under cover can help protect it against frost.

At harvest time (December to April) both high temperatures *per se* and rain can damage fruit and affect its quality. Areas where maximum temperatures regularly exceed 30°C during this period are less suited to raspberry production. Growing the crop in high tunnels or under rain shelters eliminates the risk of rain damage.

Landscape

Strong winds can increase plant stress and damage developing fruit; and hot, dry winds can damage ripe fruit. Windbreaks are often planted to provide shelter against damaging winds. Growing the crop in tunnel houses can provide similar protection.

Slope is not a major consideration in site suitability, although flat sites can be less well drained and more prone to frost, while very steep sites can increase the risk to worker safety.

Soil

The best sites for soil-grown raspberries should be well drained with at least 25 cm of soil above any impeding layer, have a soil pH in water of 5.5-6.5 and be free of salinity. If needed, lime can be added to increase soil pH. Some growers avoid the limitations of poor soils by growing their plants in growing media in pots or bags.

Soil salinity greater than one dS/m as measured by the electrical conductivity of a saturated extract will limit crop yield.

Red basaltic soils (Ferrosols) are considered very suitable for raspberry production, however other deep, well drained soils are suitable. Duplex soils that are underlain with heavy clay are less suitable, as are rocky soils.

Raspberries will grow on less favourable soils but with reduced productivity and potentially higher management costs.

Whilst a soil depth of >25cm is most preferable, productive raspberries can still grow with between 15 and 25cm of soil. Less than 15cm is not suitable for commercial production.

Developing rules to guide enterprise suitability mapping

Many plants require particular climatic and land characteristics for best performance. Frost, winter chilling, summer heat, drainage, slope and salinity are some of these characteristics. For each enterprise mapped by the Department of Primary Industries, Parks, Water and Environment (DPIPWE), the Tasmanian Institute of Agriculture (TIA) consulted industry experts and reference material to define land and climate "rules" that distinguish suitable from less suitable areas. These rules define the boundaries between the different classes of the enterprise suitability maps.

Suitability classes used are well suited, suitable, marginally suitable and unsuitable. Any limiting factors are identified to guide the management practices that could help to overcome the limitations.

Landowners and potential investors are able to access comprehensive soil, climate, crop and enterprise information plus complementary farm business planning tools at:

http://dpipwe.tas.gov.au/agriculture/investing-in-irrigation

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