

PYRETHRUM PRODUCTION

VULNERABILITY RATING
(Low—High)



PROGNOSIS

A reduction in frost risk days and an increase in temperature is projected to have a positive influence on pyrethrum production in the region in the short term. The pyrethrum industry will be somewhat resilient to climate change impacts, in particular through increased land suitability. There will, however, be increased challenges in the long term particularly relating to water management.

THE FUTURE OF PYRETHRUM IN THE CRADLE COAST REGION

Pyrethrum (*Tanacetum cinerariaefolium*) is a perennial crop common to the North West region, cultivated for its natural insecticide properties. Pyrethrum crops are usually rotated every four years with other annual crops or pasture phases². Pyrethrum grows successfully in Tasmania due to the ideal winter and spring climate conditions.

Flower production in pyrethrum is dependent on day length and night temperatures which are critical elements to maximising flower production which occurs during December¹. Growing sites require mean maximum temperatures of 25°C during November and December with consistently higher temperatures affecting crop yield² and the accumulation of pyrethrins³. During the winter, when vernalisation occurs, temperatures must be at 16 degrees or below for at least 2 weeks. The entire Cradle Coast NRM region is projected to have an increase in temperature of 2.6 to 3.3°C, which is similar to the rest of the state⁴. This

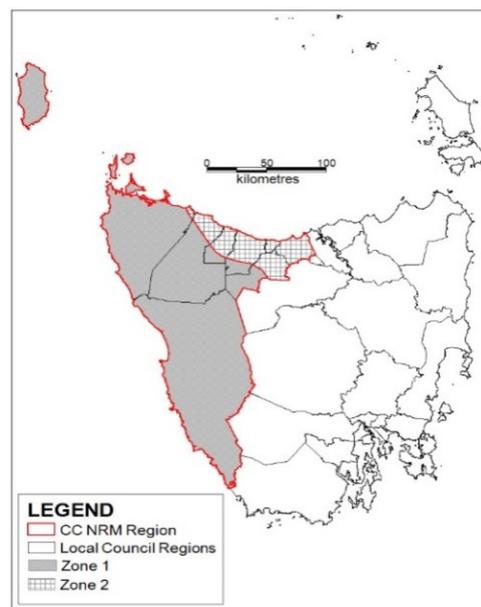


Figure 1. Cradle Coast Region depicting Zones 1 and 2.

¹ Greenhill 2007

² Cotching 2012

³ Glover 1955

⁴ Holz et al 2010

predicted increase in temperature across the region could therefore have an influence on certain pyrethrum growing regions.

Changes in rainfall, however, will vary across the region (Figure 1.) In zone 1, rainfall is expected to increase up to 20% in winter and spring and decrease by 10-20% during summer and autumn. In zone 2 there will be an increase in summer and winter rainfall by up to 10% and a slight decrease in the spring, however, little change is expected during autumn⁴. These changes in rainfall are also expected to generate more intense downpours along with longer dry periods⁴ Although increases in rainfall

in zone 2 is likely to reduce pressures on irrigation during summer, excessive rainfall of 3 or more consecutive days during flowering can have detrimental impacts on the crop². Increases in rainfall in summer may also lead to an increase in humidity during harvesting time (December – January). The increase in rainfall intensity is also likely to increase the risk of soil erosion.

Frost can be also detrimental to pyrethrum farming, especially during the budding stage (October – November)². During the critical growth stages, hard frosts, which occur below -2°C, are more detrimental to the crop than light frosts, which occur at less than 2°C.

Frost incidence is expected to decrease under the Climate Futures A2 scenario for the pyrethrum growing region of the NW, although damaging spring frosts may still occur⁴ (Figure 2).

ADAPTATION OPTIONS FOR PYRETHRUM GROWERS

Under a changing climate, increased temperatures and rainfall changes across the pyrethrum growing region may make crop management more challenging. In making the most of the changing climate, farmers could consider the following adaptations;

- ⇒ Exploring potential for land use change, particularly in regions currently limited by temperature and frost incidence.
- ⇒ Water management through increasing capacity to capture runoff as drier summers place additional pressure on irrigation systems.

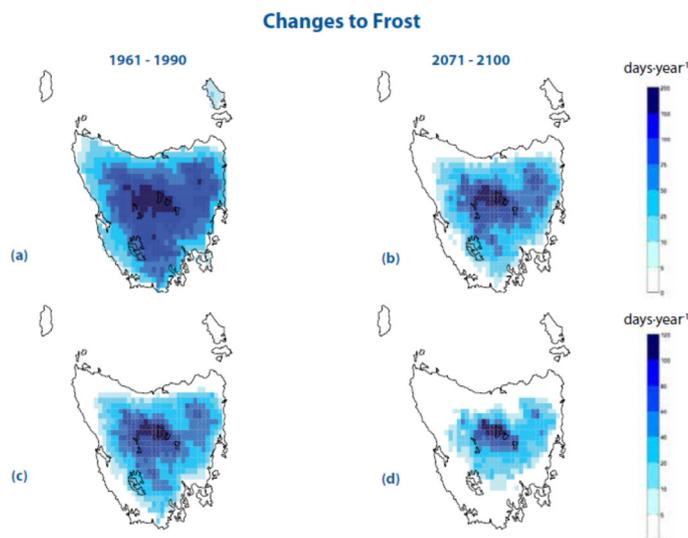


Figure 2. Frost incidence under the A2 emissions scenario. (a) and (b) days with less than 2°C per year (c) and (d) days with less than 0°C per year. Source: Holz et al., 2010.

- ⇒ Understanding and monitoring of possible pathogen spread.
- ⇒ Managing soil erosion risk through landscaping including the use of cereal straw on rip lines.

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Image: Cotching B., 2012, Pyrethrum growing in Tasmania, Wealth from Water factsheet, Tasmanian Institute of Agriculture



Australian Government

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