Tetragonia tetragonioides
Warrigal Greens, New Zealand Spinach, Botany Bay Spinach

For a long time, New Zealand Spinach (Warrigal Greens, *Tetragonia tetragonioides*) was the only cultivated vegetable known to have come from Australia and New Zealand, although it is now well established as a 'bush tucker' plant. Lieutenant James Cook used Warrigal Greens as a source of vitamin C for his crew on the Endeavour during his voyage to New Zealand and Australia and it was also harvested and eaten by those who arrived from England with Captain Arthur Phillip on the First Fleet in 1788. Curiously, Aboriginal people in Australia and Maori in New Zealand are not known to have utilised the plant.

Tetragonia tetragonioides – Warrigal Greens, New Zealand Spinach or Botany Bay Spinach

Tetragonia tetragonioides is a leafy ground cover plant, widely dispersed around the Australian coastline and through much of inland eastern Australia, most commonly along the coast and along the edges of inland salt marshes. It is also widespread around the Pacific including New Zealand, Chile, Argentina and Japan; it has become an invasive plant in both North & South America and is cultivated in South-east Asia.

Carpobrotus glaucescens – a more typical member of the Aizoaceae plant family

Tetragonia belongs to the plant family **Aizoaceae.** You may know some of its close relatives, such as ***Mesembryanthemum*** **or** ***Carpobrotus*** (**Pig Face)**, succulent, hardy plants with 'daisy-like' flowers.

Warrigal Greens can be found in coastal areas of much of southern Australia and also grow on the edges of inland salt marshes.

It is not uncommon now for Warrigal Greens to be used as a replacement for spinach but care should be taken with preparation. Leaves should be blanched in boiling water for at least one minute, cooled in cold, fresh water, and then cooked normally. This process reduces the levels of oxalate.

Very high levels of oxalates may in part explain why the plants were not eaten by Aboriginal people or by Maori. Once cooked, the leaves are low in nutrients compared to most traditional plant foods and oxalates still present after cooking have the potential to reduce the absorption of other nutrients such as iron and niacin present in other foods eaten at the same time. Oxalic acid can also accelerate the development of kidney stones, posing yet another problem for Aboriginal people managing dehydration in dry environments. Fresh young plants are toxic to livestock, although older, dry plants appear to be safe, although it appears that stock prefer not to eat the young plants anyway.

L M Kawashima and L M Valente Soares 2005. *Effect of blanching time on selective mineral elements extraction from the spinach substitute commonly used in Brazil* (Tetragonia tetragonioides) http://www.scielo.br/pdf/cta/v25n3/27005.pdf

Low, T., *Wild Food Plants of Australia*, Angus & Robertson, 1991

Plantnet: http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Tetragonia~tetragonioides

Royal Botanic Gardens, Sydney: http://www.rbgsyd.nsw.gov.au/education/Resources/bush_foods/Tetragonia_tetragonioides

United States Department of Agriculture, Agricultural Research Service: http://ndb.nal.usda.gov/ndb/foods/show/3072?qlookup=11277&format=Full&max=25&man=&lfacet=&new=1

Wikipedia: http://en.wikipedia.org/wiki/Tetragonia_tetragonoides

Alison Downing, Kevin Downing & Brian Atwell,
Department of Biological Science

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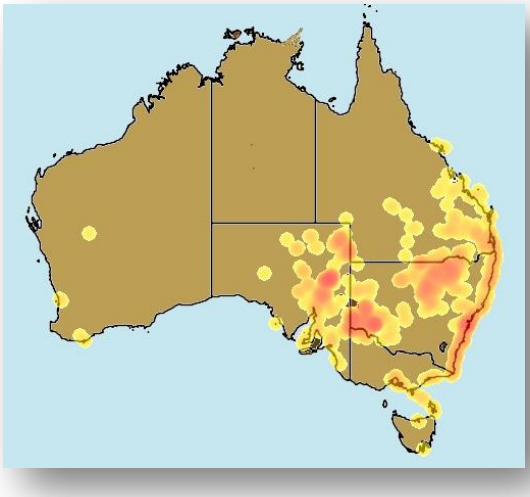

Map of distribution in Australia, modified from Atlas of Living Australia: http://bie.ala.org.au/species/Tetragonia+tetragonioides

Salt marsh plants that commonly occur with Warrigal Greens along estuaries and on coastal salt marshes include mangroves, *Casuarina*, *Allocasuarina*, *Suaeda* and *Sarcocornia*.