

S-VI-5

FUNCTIONAL FOODS IN THE TRADITIONAL MAORI DIET

Richard C. Cambie and Lynnette R. Ferguson

Depts of Chemistry and Nutrition, The University of Auckland, Private Bag 92019,
Auckland, New Zealand

E-mail: l.ferguson@auckland.ac.nz Fax: +64 9 373 7502

The Maori people were early New Zealand settlers of Polynesian descent. The incidence of non-infectious diseases appears to have been low in these people, perhaps in part due to the presence of protective chemical constituents within their food plant supply. Three of the tropical crops they introduced are still eaten here today: the sweet potato or kumara (*Ipomoea batatas*), the taro (*Colocasia esculenta*) and the cabbage tree or ti (*Cordyline terminalis*). Sporamins A and B, the major storage proteins of kumara tubers, act as proteinase inhibitors, and may have other anti-cancer properties. The tubers also contain the anti-coagulant coumarins, scopoletin, aesculetin, and umbelliferone. The corms of taro contain the anthocyanins, cyanidin 3-glucoside, pelargonidin 3-glucoside and cyanidin 3-rhamnoside, reported to have antioxidant and antiinflammatory properties. Anthocyanins are also major components of a so-called "Maori potato", a variety officially known as Ureniki, which has a purple skin and flesh and was widely eaten in the early 1900's. Anthocyanins were also high in ripe berries of the ramarama (*Lophomyrtus bullata*) and rohutu (*Neomyrtus pedunculata*). Both the leaves and seeds of the introduced cabbage tree (*Cordyline terminalis*) and the native *Cordyline* species, *C. australis*, *C. indivisa*, and *C. pumilo*, were eaten. The seeds of *C. australis*, of some *Astelia* species, and of hinau (*Elaeocarpus dentatus*) are good sources of various essential fatty acids, generally regarded as protective against cardiovascular disease. Shoots and leaves from a wide range of native species were traditionally eaten as greens, especially sow thistle or puha (*Sonchus spp.*), reportedly high in vitamin C and various phenolics. "New Zealand spinach" (*Tetragonia tetragonioides* or *T. expansa*) has anti-inflammatory activity that has been traced to two cerebroside and also to novel water-soluble polysaccharides, as well as antioxidant phenylpropanoids

including caffeic acid. Leaves of the "hen and chickens fern" (*Asplenium bulbiferum*) contain antioxidant flavonoids such as kaempferol glucosides.