

Horopito Monograph

Botanical Name: *Pseudowintera colorata*

Common Names: Horopito, New Zealand Peppertree, Winter's bark, Red Horopito

Botanical Family: Winteraceae

Part Used: Leaves

Active Constituents:

- Volatile oil - containing eugenol; and polygodial, a bicyclic sesquiterpenoid dialdehyde
- Tannins

Primary Actions:

- Anti-fungal
- Anti-inflammatory
- Circulatory stimulant
- Stimulating expectorant
- Counter-irritant/rubefacient
- Antiseptic
- Astringent
- Insecticidal

Medicinal Uses:

The main biologically active constituent of Horopito has been identified as the sesquiterpene dialdehyde, polygodial⁽¹⁾. Polygodial is a component of the "hot taste" in peppery spices common in traditional Japanese cuisine⁽²⁾ and it has been shown to exhibit significant fungicidal and antibacterial activity⁽³⁾.

Leaves of the Horopito tree were traditionally used by Maori to treat fungal and other skin infections, venereal disease, stomach pain and diarrhoea⁽⁴⁾. Early European settlers to New Zealand also used Horopito medicinally, including infusions of the leaf for internal problems, or simply chewing the fresh leaves. Skin complaints were treated using bruised leaves which had been steeped in water or chewed before application^(1,5). A decoction of leaves was used as an analgesic, and the leaves were chewed for toothache.

The antifungal activity of polygodial has been well documented. Researchers in New Zealand demonstrated the ability of polygodial isolated from Horopito to inhibit the growth of *Candida albicans*⁽¹⁾. Other researchers have shown it to be effective against yeast-like fungi such as *Candida albicans*, *Candida krusei*, *Candida utilis*, *Cryptococcus neoformans*, *Saccharomyces cerevisiae*, and also filamentous fungi *Trichophyton mentagraphytes*, *Trichophyton rubrum* and *Penicillium marneffe*⁽⁶⁾. The effectiveness of Horopito in inhibiting the growth of these fungi was shown to be comparable to the common antifungal pharmaceutical preparation amphotericin B. The Cawthorn Institute, Nelson, New Zealand showed dried Horopito leaves to be twice as powerful as sodium caprylate at killing *Candida albicans*⁽⁷⁾. Preliminary clinical trials have confirmed Horopito's effectiveness in dealing with fungal infections^(8,9,12). A combination of polygodial with the aniseed constituent

anethole, has been found to produce greater antifungal activity than seen with polygodial alone⁽¹³⁾.

Polygodial has also been shown to have antibacterial⁽¹⁴⁾, anti-inflammatory, and anti-allergic⁽¹⁵⁾ effects. Antinociceptive or analgesic properties, possibly mediated via influences on glutamate neurotransmission^(16,17,18), or in a similar manner to those of capsaicin⁽¹⁹⁾, have also been implicated.

Potent gastroprotective effects of polygodial in rats^(20,21) and reduced colon permeability in malnourished mice⁽²²⁾, have been reported. As with its anti-inflammatory effects, modulation of endogenous prostaglandins and nitric oxide, seem to be involved in these activities.

The marked circulatory stimulant action of Horopito, and vasorelaxant effect of polygodial⁽²³⁾, implicates possible benefits in conditions of circulatory insufficiency, such as chilblains, arterial insufficiency, intermittent claudication, and Raynaud's syndrome.

Horopito may also be of use in the treatment of respiratory conditions such as colds, coughs and asthma, probably as a stimulating expectorant.

Adverse effects:

While modest doses may be useful, large doses are best avoided in acute gastritis or peptic ulcers.

Unlike many biologically active sesquiterpene dialdehydes, polygodial is not mutagenic^(10,11).

Herb-Drug Interactions:

None identified.

Dosage: 10 – 30ml per week of a 1:2 fluid extract.

While not as hot as *Capsicum spp* when prepared as a hydroethanolic liquid extract, it is advisable to take daily amounts in 2-3 divided doses to avoid excessive circulatory stimulation.

References:

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