

Horopito for *Candida albicans* overgrowth and Vulvovaginal Candidiasis

Introduction & Summary of Use

Horopito (*Pseudowintera colorata*) is a shrub endemic to many parts of New Zealand. The leaves have a strong peppery taste, earning it the name the New Zealand pepper tree. Horopito was used both internally and topically by indigenous Maori and early European settlers to New Zealand as an analgesic and antiseptic, and for diarrhoea and stomach pain. Traditional uses also included topical applications for a range of skin conditions including chaffing, wound healing, bruises, or cuts.¹

The main active constituent of Horopito is the sesquiterpene dialdehyde, polygodial.² Polygodial exhibits significant fungicidal activity, especially against *Candida albicans*.^{2,3,4}

Horopito is used as an active ingredient in both oral and topical products.

Fungicidal Properties of Horopito

Polygodial extracted from Horopito has been observed to strongly inhibit *Candida albicans* growth in vitro, with an activity that was faster and stronger compared to that of the common antifungal drug amphotericin B.² Other researchers have shown that polygodial is effective against yeast-like fungi in addition to *Candida albicans* including *Candida krusei*, *Candida utilis*, *Cryptococcus*

neoformans, *Saccharomyces cerevisiae*, and also filamentous fungi *Trichophyton mentagraphytes*, *Trichophyton rubrum* and *Penicillium marneffeii*.³

Polygodial's primary mode of action is to selectively disrupt the permeability barrier of yeast cells, resulting in cell leakage and cell death.⁵

Efficacy of Horopito for Vulvovaginal Candidiasis

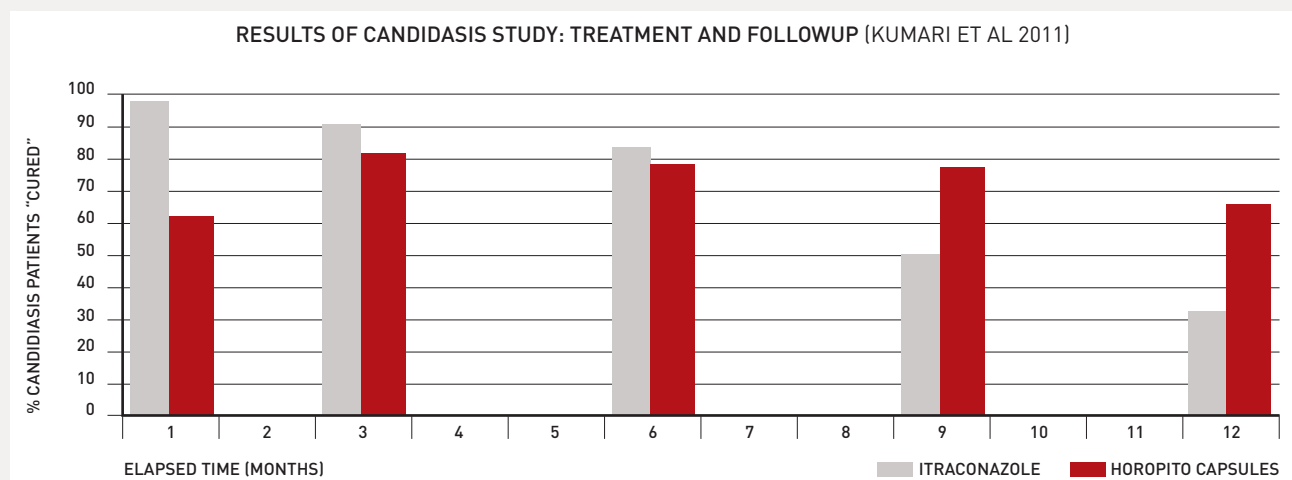
Two clinical studies have evaluated the efficacy of an oral dose form of Horopito extract for recurrent vulvovaginal candidiasis (RVVC).

In a 2011 study, 82 women with a history of RVVC were enrolled.⁶ The women were randomly assigned to either a pharmaceutical treatment group receiving itraconazole, or a Horopito group who received capsules containing Horopito extract.

Patients received treatment for 6 months and the study included a 6-month follow-up observation period (12 months in total). The itraconazole group reported earlier symptomatic relief and the rate of "mycological cure" at the end of the 6-month treatment period was comparable between the two groups (83% itraconazole versus 78% Horopito capsules).

The benefits of Horopito became apparent during the observational period. The percentage of women experiencing relapse during the observational period was significantly lower for those in the Horopito group versus the itraconazole group (34% versus 66%). In addition, at the end of the 12-month study, there was a significantly higher cure rate in the Horopito group (65.5%) versus the itraconazole group (34.4%).

This study also investigated the development of azole-resistant fungal species over the course of the study. Those in the itraconazole group developed a higher level of resistant fungal species versus those in the Horopito treatment group (67.6% versus 50%, although this was a non-statistically significant difference).



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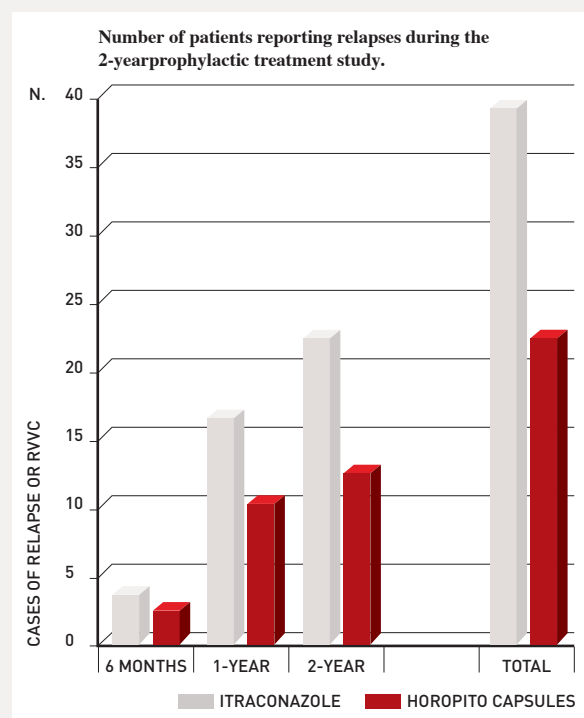
Efficacy of Horopito for Vulvovaginal Candidiasis - Continued

In a second clinical study by the same gynaecological research group (2013), 7 122 women with a history of RVVC were enrolled. Again, the women were randomly assigned to either an itraconazole treatment group or a Horopito treatment group. The study duration was two years. Each treatment was well tolerated, with 19 patients in the itraconazole group reporting mild transient digestive symptoms and only 3 patients in the Horopito group reporting similar symptoms.

At the end of the two-year study, the mycological cure rate was similar between the treatment groups (91% cured in the Horopito group versus 85% cured in the itraconazole group).

Throughout the two-year study, the Horopito group had a significantly lower number of relapses (22 versus 39), demonstrating Horopito's beneficial prophylactic effect.

Identification of fungal species from patients in the itraconazole group show decreased susceptibility to antifungal drugs and an increased growth of non-*albicans* species. This effect was significantly reduced in the Horopito treatment group, demonstrating treatment with Horopito is less likely to lead to drug resistant species, compared to treatment with itraconazole.



Adverse Effects & Precautions

Capsules containing Horopito extract or leaf may cause digestive symptoms in some individuals. Horopito-containing capsules should be taken with food and a glass of water to minimise the risk of digestive upset.

There is no data on the use of Horopito in pregnant or breastfeeding women. Therefore, as a precaution, pregnant and breastfeeding women should avoid Horopito.

A case report of contact vulvitis following vaginal application of a Horopito-containing cream has been published.⁸ Polygodial is non-mutagenic^{9,10} and there are no known drug interactions.

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