Indigenous South African Medicinal Plants

Part I: Lippia javanica (fever tea)

Alvaro Viljoen (PhD)
School of Pharmacy, Tshwane University of Technology

Botany:
The genus Lippia (Hoest.) belongs to the family Verbenaceae (Lemon Balm family), which consists of approximately 200 herbs, shrubs and small trees, and which are often of an aromatic nature. Members of the genus are distributed throughout South and Central America and Tropical and Southern Africa. Four species occur in South Africa; Lippia javanica, L. scaberrima, L. wilmsii, and L. rehmannii of which L. javanica is the most common and favoured in African traditional healing. Lippia javanica is widely distributed in the northern parts of South Africa (Gauteng and Limpopo Province) from where it extends eastwards along the KwaZulu-Natal coast through to the Eastern Cape.

Traditional uses:
The plant is used extensively in traditional medicine by both lay people and traditional healers to treat minor ailments. Lippia javanica is commonly referred to as “fever tea” in English. This name is probably derived from its use as a weak infusion for fever symptoms. In Afrikaans it is referred to as “koorsbossie”, which literally translated means “fever bush”. In Zulu it is commonly referred to as “umsuzwane”. Ethnobotanical literature documents its uses for fever and influenza in combination with leaves of Artemisia afra (Limon Balm) and it is drunk as a weak infusion. Many of its uses relate to respiratory disorders e.g. coughs or colds and also for skin infections or wounds. The Xhosa drink a weak infusion of the leaves and stems made to either milk or water for coughs, colds and bronchial troubles. The leaf is described as having the odour of vanilla or of mint and has been used as a tea substitute. The infusions are most often used for fever, influenza, measles and as a prophylactic against lung inflammation.

The Kwenya and Tswana use a decoction of the leaf as a cough and cold remedy whilst the Zulu drink an infusion of the leaf for “gangrenous rectitis” and use the plant for treating measles, urticaria and other rashes. The leaf boiled in water is a Shangaan cough remedy and a Swati remedy for influenza and colds. For the treatment of malaria the decoction of boiled leaves is drunk and the whole body bathed in the same fluid. Pounded leaves can also be applied to the wounds. It is also reported to be used to treat stomach problems, headaches and applied topically to treat scabies and lice.

Scientific studies:
The ethanolic extract of Lippia javanica has been studied for its use as an effective mosquito repellent. This study, conducted by Govere et al., showed that an extract of Lippia javanica provided 76.7% protection, which was higher than Pelargonium reniforme and Cymbopogon excavatus to which it was compared. Prior to this, the extract was assessed for its larvicidal activity against Anopheles gambiae larvae. Due to the pungent aromatic nature of the plant and the frequent use as an inhalant many studies have acutely focused on the volatile (essential oil) fraction. The hydrodistilled essential oils have been analysed by GC/MS and several chemotypes have been identified for Lippia javanica in South Africa. Time kill studies were performed on three microbial respiratory isolates to document the scientific rationale of using Lippia to treat respiratory complaints in traditional herbal medicine. Klebsiella pneumoniae, Cryptococcus neoforans and Bacillus cereus showed reduction in microbial populations with the strongest bacteriostatic effect observed for Klebsiella pneumoniae. It is remarkable that despite the extensive local use of this indigenous plant few studies have been conducted to validate the traditional uses ascribed to this ethnomedicinal plant.

References:

The leaves and flower heads of Lippia javanica

Scanning electron micrograph of the leaf surface of Lippia javanica showing the glandular hair containing the essential oils

Geographical distribution (orange) of Lippia javanica in South Africa