



A comprehensive review on the ethnobotany of *Evolvulus alsinoides*

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ABSTRACT

Knowledge about the medicinal value of plants has been integral to local and indigenous communities, and they have been conserving and safeguarding valuable medicinal plants. This traditional knowledge is increasingly getting attention from researchers and commercial firms. Covid-19 has reiterated the importance of herbal plants and the need to include them in our diet to boost immunity and fight disease. *Evolvulus alsinoides* is a commonly seen plant in many parts of the world. The plant is well known for its medicinal value and is widely used by traditional healers and local communities across the world. The majority of the brain tonic available on the market contain *Evolvulus alsinoides* as one of the ingredients. This article reviews the ethnobotanical use of *Evolvulus alsinoides* and its marketed formulations.

Keywords- Ethnobotany, *Evolvulusalsinoides*, Shankhpushpi, Vishnukranti, Marketed formulation

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INTRODUCTION

For ages, humans used plants as a source of food to fight disease and maintain longevity, health and beauty. Even today, many societies and cultures, especially developing countries, use plants to treat different ailments. The knowledge about the medicinal value of plants, also known as traditional knowledge, is integral to indigenous communities. This knowledge is getting attention from researchers and commercial firms and is a valuable source of drug discovery and research leads, making it a valuable asset.

According to WHO, eighty per cent of the world's population uses traditional medicine. Eight thousand medicinal plant species are reported in India according to the Botanical Survey of India (BSI) [1]. Ethnic communities in India rely on these medicinal plants, and for them, these plants form the basis of an affordable health care system. The covid-19 pandemic created an upsurge in the medicinal plant used for disease prevention and boosting immunity. *Evolvulusalsinoides* belonging to the *Convolvulaceae* are known as dwarf morning glory, Shankhpushpi, Vishnukranthi etc. Several varieties and subspecies of *E. alsinoides* are reported. In Kerala, *E. alsinoides* has religious use and is one of the plants included in Dasapushpam. It is found in tropical and subtropical regions of the world [2], primarily in East Asia, India and West Cameroon and in low zones of Africa [3]. *E. alsinoides* is a small tiny and woody annual herb with prostrate branches spreading in all directions [4]. Leaves are minute, elliptical and densely haired [3,4]. Flowers are light blue or blue usually solitary on the upper axil, sometimes in pairs [5].

ETHNOBOTANICAL USE

There is a close relationship between humanity and plants, which is more evident amongst the tribals living close to nature. The tribal people hold enormous knowledge on the use of various plants. The tribal have a lot to teach us about environmental sustainability and food security as we battle climate change services and reduce food reserves. From herbs to shrubs to trees, plants are the source of food, medicine and livelihood. The ethnobotanical use of *E. alsinoides* to cure several diseases is well documented.

In Sri Lanka, people use this plant to treat gastric ulceration [6]. Maasai communities of Sekenani Valley, Maasai Mara, Kenya, use *E. alsinoides* for treating low spirit/depression [7]. Farmers in the Southern Gadarif Region of Sudan use *E. alsinoides* and other plant species as land degradation indicators [8]. Philippians use *E. alsinoides* for curing bowel irregularities [9]. Infusion of roots, stalks, and leaves of *E.alsinoidesis* used in Nigeria as stomachic [10]. In Ethiopia, Suri communities apply crushed leaves of

E.alsinoides to treat burns, and the Sukuma tribe of Tanzania burn the dried leaves of *E.alsinoides* in a pipe to cure leprosy [11,12].

In India, *E. alsinoides* is one of the three plants widely known as Shankupushpi. It finds lots of mention in Ayurvedic literature. In ayurvedic literature "*Evolvulusalsinoides* is known as *vishnukrantha*, which has beentold to have '*Medhya*' '*Smritivardhaka*' and '*Buddhivardhaka*' (*Memory enhancer*) action and is categorized in the '*Samjnasthapanadravyas*'" [13]. Traditionally the plant is effective in treating colds, coughs and diseases linked with the nervous system, including epilepsy, memory loss, and mental disorders [14]. Several ethnobotanical studies of *E. alsinoides* is reported amongst Kani tribes. In South Western Ghats in India, Kani uses these plants to treat venereal diseases [14,15]. Kani's of Kanyakumari wildlife sanctuary southern western ghats uses *E. alsinoides* to treat Scabies, wherein 50 gm of plant leaves are boiled in 100 ml coconut oil and this oil is rubbed on the skin for 30 days to cure scabies [16]. In the Kottoor reserve forest, Agasthyavam, Kani uses this plant for chest infection [17]. Various other communities are found to use *E.alsinoides* for treating ailments. Malasar tribes of the Coimbatore district in Tamilnadu use the powder of *E.alsinoides* to increase memory power [18]. In the Kailasagiri forest range of Chittoor district, Andhra Pradesh, tribals use this plant for treating intestinal worms [19]. Koyas of Eturnagaram Mandal, Warangal District, Andhra Pradesh uses the root extract of *E.alsinoides* orally for treating impotence [20]. Tribes of Bijagarh of west Nimar district in Madhya Pradesh, use the plant extract for increasing memory [21].

In Ayurvedic medicine *Evolvulusalsinoides* (Linn.) is commonly used as a brain tonic and well-known *kaphahara* [22]. Sankaranarayanan *et al.* in a study on traditional healers from Tamilnadu's Villupuram district found that the entire *E.alsinoides* extract is used to treat epilepsy, insanity, nervous debility, and to enhance memory [23]. There are reports on ulcer healing properties of *E.alsinoides* [24] and the use of its decoction as a vermifuge and antihelmintics [25]. Villagers of the Tiruvannamalai district of Tamil Nadu were found to use *E. alsinoides* and several other medicinal plants to prevent covid 19 [26]. Over the years several laboratory studies have been carried out on rodents. These studies have revealed antiulcer [27,28], anticonvulsant [27] adaptogenic, anti-amnesic [29] anxiolytic [30], antioxidant [30,31] anti-bacterial [32] anticonvulsant [33] anti-inflammatory, antidiarrhoeal, antipyretic [34] immunomodulatory [35] and antimouse corna viral activity [36] thereby scientifically proving the traditional use of *Evolvulus alsinoides*.

MARKETED FORMULATIONS

Ayurvedic formulations of *E alsinoides* commonly available in the market include Shankpusphi by Zandu pharma, Shankpusphi by Baidyanath pharma, Shankpusphi by Sakar pharma, Shankpusphi syrup by Unza pharma, and Shankpushpi by Dabur pharma [37]. Ayurvedic formulations like Intellec Tablets and Syrup marketed by Millennium herbal care, Arogya Jeevan capsule, and Braino SUP tablet marketed by Lama pharmaceuticals, Vitagreen's Relexo capsule, Swathy naturals Vishnukranthi powder, K. Pnamboodiris Dasapuspham herbal soap, Vitagreens Nap, etc contain *E. alsinoides* as one of the ingredients.

Paspanguwa, a traditional herbal formulation of Sri Lanka, also contains *E. alsinoides* is one of the herbs [38].

CONCLUSION

Ethnobotanical information often provides a valuable tool for new drug discovery. To a great extent, the ethnomedicinal value of *Evolvulus alsinoides* has been proven scientifically through *in vitro* and *in vivo* research. This shows the need for continuous research on plants that have been traditionally used by communities for the development of new medicines and drugs. Further research on *Evolvulusalsinoides* is required to explore the plant to get the maximum benefit.

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