

# Sustainable spikenard

**Susan Curtis** and **Kajal Darshan Patel** highlight a groundbreaking project that aims to establish principles and systems for sustainable harvesting and fair trading of Jatamansi in Nepal



**J**atamansi, also known as Indian Spikenard, is the rhizome of the perennial, herbaceous species *Nardostachys jatamansi* (syn. *Nardostachys grandiflora*) in the Caprifoliaceae family. (See [www.theplantlist.org/tpl1.1/record/kew-2382349](http://www.theplantlist.org/tpl1.1/record/kew-2382349) for further synonyms.) Found throughout the Himalayas around the cliffs and mountain peaks of Bhutan, China, India, Myanmar and Nepal (Ved, Saha *et al* 2015), this plant has a long history of being treasured for the essential oil distilled from its roots.

In Sanskrit, *jata-mansi* translates to 'dreadlock root for the mind', named as such for the hairy appearance of its valuable rhizome. The word jatamansi is made up of the words *jata* meaning twisted lock of hair (Monier-Williams 1899) and *mansi*, which derives from the word *manas*, meaning mind (Monier-Williams 1899).

Jatamansi has been used in Ayurvedic medicine as a way of calming the nervous system and is used for psychological problems, trauma, depression, stress and some skin diseases (Sharma, Garg *et al* 2021). However, unlike its relative Indian Valerian (*Valeriana wallichii*), it is considered not to dull the mind, but instead to be uplifting, reduce restlessness, and create vitality, vigour and aid in spiritual experiences (Toolika, Bhat *et al* 2015). It is no wonder then that Jatamansi is one of the few plants mentioned in the Bible (Dafni, Bock 2019).

## Jatamansi essential oil

It is these psychological benefits which make Jatamansi so beneficial in aromatherapy. The Jatamansi root is harvested and distilled to produce the commercially known Spikenard essential oil, which holds an important position in the aroma-therapeutic and perfume industry.

Spikenard essential oil's traditional and historical use has been as an insect repellent, in haircare, in the preparation of precious scents and as a relaxant (Paudyal, Rajbhandari *et al* 2012; Chauhan, Nautiyal *et al* 2017; Dhiman, Sharma *et al* 2020; Kaur, Lekhak *et al* 2020).

The essential oil has been found to exhibit a range of properties including: antimalarial, antinociceptive



*Bell-shaped flowers of Nardostachys jatamansi in bloom. The woody, spicy essential oil is distilled from the root*

(antinociceptive compounds block the detection of a painful or injurious stimulus by sensory neurons, see Assis, Aragão Neto *et al* 2020), and cytotoxic effects (Chauhan, Nautiyal *et al* 2017).

The oil has a characteristic and unique combination of strong, spicy, musky, woody and earthy aromas and a distinctive light green colour. It contains nearly 15 sesquiterpenes and many other constituents (Paudyal, Rajbhandari *et al* 2012). While it has hitherto been largely neglected in scientific literature, many publications are now beginning to understand the oil and dried herb's medicinal and pharmacological value further (Gottumukkala, Annamalai *et al* 2011; Han, Beaumont *et al* 2017; Sharma, Garg *et al* 2021; Satyal, Chhetri *et al* 2015; Dhiman, Sharma *et al* 2020; Ram, Bhatt *et al* 2015). ►

## Interdependence of plants and people

Jatamansi is one of Nepal's most commercially valuable and heavily exploited species. Today, between 100–500 tonnes of Jatamansi rhizomes are sourced from high-altitude (2500–5000m) Himalayan regions, providing at least 15,000 people across nine regions with an average of 25 per cent of their annual income (TRAFFIC 2018).

Due to its diverse usage, oil extracted from Jatamansi's rhizomes is used in the aromatherapy and cosmetics sectors worldwide and the herb is used in Ayurvedic, Tibetan and Chinese medicine. However, while demand has grown, populations have dwindled due to illegal collection and overharvesting of the species, putting both the species and livelihoods at risk.



Top: Between 100–500 tonnes of Jatamansi rhizomes are harvested from high-altitude Himalayan regions. Below: Drying the Jatamansi rhizomes before distillation

Local income generation has also historically been limited by low rates of value addition due to a lack of direct access to international markets, undercutting by large-scale illegal export of the rhizomes to India, and declining Jatamansi populations caused by overharvesting for export and habitat loss (Timoshyna, Ghimire *et al* 2020). This situation was made worse due to the unclear legal situation around its international trade (Negi, Kewlani *et al* 2018; Pyakurel, Bhattarai Sharma *et al* 2018; Pyakurel, Smith-Hall *et al* 2019).

Concern regarding Jatamansi's population decline led to it being listed as Critically Endangered on the IUCN (International Union for Conservation of Nature) Red List in 2014 (Ved, Saha *et al* 2015), and being included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (CITES 2020), to regulate its international trade (Timoshyna, Ghimire *et al* 2020). This led to Nepal's government adopting various harvest and trade controls, including a ban on exports of the unprocessed rhizomes.

In 2017, the Government of Nepal adopted a CITES Act aimed at strengthening the CITES implementation. However, this Act unintentionally banned exports of all Appendix II listed species from the country, including Jatamansi (Timoshyna, Ghimire *et al* 2020).

Yet, in the face of all of these challenges, change is underway in the Nepali Jatamansi sector, aided by a ground-breaking project aiming to establish principles and systems for piloting independently-verified sustainable harvesting and fair trading of Jatamansi in the country.

## Turning things around

Through the collaboration of several organisations, a Darwin Initiative-funded project was launched in 2018. This *Succeeding with CITES: Sustainable and equitable Jatamansi trade from Nepal* project was led by the TRAFFIC, the international wildlife trade specialists (Ghimire, Subedi *et al* 2019). For more information see [www.darwininitiative.org.uk/project/DAR25018](http://www.darwininitiative.org.uk/project/DAR25018) and [www.traffic.org/what-we-do/projects-and-approaches/promoting-sustainable-trade/jatamansi-trade-from-nepal](http://www.traffic.org/what-we-do/projects-and-approaches/promoting-sustainable-trade/jatamansi-trade-from-nepal).

The project brought together both Nepali and international organisations with expertise in botany, conservation, wildlife trade, community and value-chain development and market access (Timoshyna, Ghimire *et al* 2020). These organisations included: TRAFFIC, Asia Network for Sustainable Agriculture and Bioresources (ANSAB), the Ministry of Forests and Environment of Nepal, the ProFound – Advisers in Development, the FairWild Foundation, the IUCN/SSC Medicinal Plant Specialist Group, the Department of Food and Resource Economics (University of Copenhagen), and the Royal Botanic Garden Edinburgh. Only with the combined expertise of each organisation was the delivery of a field and policy level project possible.

The project addressed the combined threats to local incomes, biodiversity loss, habitat degradation and declining access to natural resources linked to over-harvest of medicinal and aromatic plants. Now, as the project comes to an end, more than 2,000 harvesters, nearly half



*Jatamansi collection site at Patarasi-Pere village in Jumla, a remote region of north-west Nepal*

of whom are women, have been trained on sustainable harvesting and the requirements of the FairWild Standard. Distillation facilities have also been renovated in the two project districts and local people trained in the safe use and maintenance of the equipment, paving the way for added value to the resource in harvest communities (Timoshyna, Ghimire *et al* 2020).

The project also successfully facilitated clarifications of the Nepali legislation regarding CITES-listed species to enable legal and traceable trade in Jatamansi (Timoshyna, Ghimire *et al* 2020). Exports re-started in August 2020, with the first permits issued for trade in Jatamansi oil and marc (the residue left after the extraction of essential oil).

The project was able to secure commitment from a number of Nepali organisations such as the government, forestry organisations, local producers, manufacturers and traders. Together, benefit-sharing has been established, empowering the people in the community who were getting the lowest prices for their labour.

As the culmination of all the years of work on the project, a Nepali trading company is also now undergoing an audit for FairWild certification. Himalayan BioTrade Pvt. Ltd (HBTL) ([www.himalayanbiotrader.com](http://www.himalayanbiotrader.com)) is a consortium of community-based enterprises that specialise in natural and sustainably sourced products such as essential oils, handmade paper, and medicinal and aromatic plants. They already hold organic, Forest Stewardship Council (FSC) and Wildlife Friendly certification. If they are certified as FairWild, their Jatamansi will be guaranteed to be fairly traded, ethical and sustainable.

### **Best practice**

The FairWild Standard (downloadable from [www.fairwild.org](http://www.fairwild.org)) and its associated certification scheme is a globally recognised best practice in wild-sourcing of plants, and was key to the project framework (TRAFFIC 2020). The crucial step to ensure the longevity of Nepal's Jatamansi trade is the implementation of sustainable trade practices and resource management. This is exactly what the FairWild Standard provides - giving wild plant harvesters, processors and producers and everyone involved in the process, a sustainable management framework.

The FairWild Standard has been identified as fulfilling the requirements of CITES non detriment and legal acquisition findings (Timoshyna *et al* 2019), with the ongoing pilot in Nepal presenting the opportunity to support industry with meeting CITES requirements for export and import of this species.

Local partner Nepali Non-Governmental Organisation (NGO) ANSAB provided training on production quality, value-addition and the FairWild Standard to 2,000 Jatamansi harvesters; ANSAB also helped to integrate FairWild requirements on species and area management planning into the community forest user groups operational management plans. Together, these actions helped to simultaneously protect wild ecosystems, and improve local livelihoods from wild collection activities (TRAFFIC 2020). With rigorous requirements on species, and area management plans built on resource inventories and integrating monitoring, FairWild also sets a unique framework for what equitable trade and benefit-sharing to harvesters and workers means in practice. ►

## What can you do?

This project has delivered positive conservation and management outcomes for Jatamansi and the alpine ecosystems in which the species occurs. It has created positive livelihood outcomes for wild-harvesters, and improved product quality and profitability for producer enterprises in the short-term. It has provided mechanisms for replicating project outcomes, supporting more sustainable and equitable trade in Jatamansi and other CITES-listed species and associated ecosystem conservation, as well as livelihood outcomes in the long-term. Beneficiaries include: harvesters, producer enterprises, traders and manufacturers, government agencies, and consumers (Timoshyna, Ghimire *et al* 2020).

While it was a long journey, there's more to come from FairWild and the other project partners. In the end, the plants, companies and harvesters benefit exponentially, ensuring that the resource does not get depleted. Giving the plant materials exclusive certification means that top prices can be achieved and a steady and reliable income for all involved can be ensured.

While this project focused on a single species, it offers an example of how the livelihoods of harvesting communities and the conservation of highly desirable medicinal plants are intertwined. As a practical illustration of this, a FairWild audit is also being carried out for Kutki (*Neopicrorhiza scrophulariiflora*), harvested in the same collection areas as Jatamansi.

Many other essential oils are also sourced from wild plants, including the iconic Frankincense and Myrrh. It is up to industry to lead the way in ensuring the survival of these species for the people who depend upon them and the continuance of their traditional use.

Next time you purchase oils, make sure to discuss FairWild with your supplier, and keep the conversation on sustainability and ethical sourcing alive with your colleagues. To find out more about FairWild, visit [fairwild.org](http://fairwild.org).

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