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OPINION

Conservation of endangered medicinal species “*Picrorhiza kurroa*”

Dr Arvind Saklani, Vice President, Agri Biotech, Sami Sabinsa Group, traces down the origin, history, benefits, farming aspects, challenges and opportunities associated with “*Picrorhiza kurroa* (*Kutki*)”, amid much more

Sami-Sabinsa Group, a research-oriented international health science organisation with the intention to increase the area under cultivation of medicinal herbs in India, has begun work on the large-scale cultivation of an endangered medicinal species in the higher reaches of the Jammu & Kashmir region. The project, in addition to conserving the endangered species, “*Picrorhiza kurroa*” will also enhance the sustainable livelihoods of marginalised communities who live in harsh environments, such as high-altitude regions of Himalaya, where employment opportunities are too scarce owing to the region’s poor connectivity with the rest of the world.

Nature’s benevolence under threat

“*Picrorhiza kurroa*” is one of the most revered and well-researched herbs in Ayurveda that grows at high altitudes in the Himalayan region between 8,000 and 15,000 feet. Popularly called *Kutki*, it naturally grows in the wild in India, China, Pakistan, Nepal and Bhutan. In India, it is found from Kashmir to Sikkim. The roots and rhizomes of *Kutki* have immense healing properties, and are used in Ayurvedic and Unani medicines. Since a few decades ago, unlawful collectors have found success in exploiting this species from the wild for commercial purposes. This herb is in high demand in national and international markets due to its vast medicinal properties. The overexploitation and unsustainable harvesting have posed an alarming



MoU Exchange between Sami-Sabinsa Group, J&K State Medicinal Plants Board, Jammu, and the Farmers’ Group at Global AYUSH Investment & Innovation Summit, Gandhinagar (April 2022). (L to R) Dr Mahendra Munjapara, State Minister of AYUSH; Dr Arvind Saklani, VP, Sami-Sabinsa Group; Dr Mohan Singh, Director, ISM and CEO, J&K State Medicinal Plants Board; Farhan Rashid, Farmers Group Head, Kupwara, J&K; and Dr Wahid ul Hassan, Nodal Officer, J&K State Medicinal Plants Board

threat to the existence of this important species, and its population has declined drastically.

Realising the disappearing population of *Kutki*, this plant was listed as an endangered species in Appendix II of the Convention on International Trade in Endangered Species (CITES), a multi-lateral treaty drafted by the member nations of the International Union for Conservation of Nature (IUCN). This has made it mandatory to get a Legal Pro-

urement Certificate (LPC) for manufacturers and traders to export any *Kutki*-based products.

Kutki conservation for long-term sustainability

With a view to reduce the pressure on *Kutki* population in the wild, it became imperative to go for commercial cultivation of this species close to its natural habitat to ensure a regular supply of raw material to industries.

Motivated to conserve biodiversity, Sami-Sabinsa Group has initiated a conservation project for large-scale cultivation of *Kutki*. The plant needs a specific environment for its successful cultivation with the necessary therapeutic characteristics. A cool and moist climate with adequate snowfall is required for the plant to thrive well. After assessing critical growth parameters such as climate, soil factors, availability of pollinators and micro-climatic

conditions, a region in the higher altitudes of the Himalayas, which is the species’ natural habitat, was identified for cultivation by Sami-Sabinsa.

For the implementation of this conservation project, the company had signed a Tripartite Agreement with the J&K State Medicinal Plants Board, Jammu, and the Farmers’ Group, during the ‘Buyer-Seller Meet’ at the Global AYUSH Investment & Innova-

tion Summit, Gandhinagar, in April 2022.

Following the agreement, with assistance from local farmers, cultivation of *Kutki* was started in the Kupwara district of the Kashmir valley in July this year. The region under cultivation is at an altitude of 8,500 feet. The cultivation of the crop is currently being done on 10 acres of land. The technical guidance for raising the crop is given by the J&K State Medicinal Plants Board. Sami-Sabinsa, along with the Board, will assist the farmers on the technical front with field demos, workshops and crop monitoring, and support them in the post-harvest management of the produce. The crop has a harvesting cycle of 2.5 to three years. The organisation is also working to eventually increase the area of cultivation in consecutive years. It assures the farmers of a buy-back guarantee and will source the produce from them at a price that has been mutually agreed upon and is comparable to the market price at the time of harvest.

Financial assistance for *Kutki* cultivation

The Ministry of AYUSH is promoting large-scale cultivation of medicinal plants in agricultural land to ensure a regular supply of raw material to AYUSH industries besides offering opportunities for crop diversification, exports growth and improve the standard of living of these farmers. For en-



The roots and rhizomes of *Kutki* have immense healing properties, and are used in Ayurvedic and Unani medicines

dangered species as *Kutki*, the ministry, through National Medicinal Plants Board (NMPD), provides financial assistance in the form of subsidy at the rate of 75 per cent of the cost of cultivation.

Katuki (Kutki): The goodness of Ayurveda

“*Picrorhiza kurroa (Kutki)*” and *Katuki* in Ayurveda, is widely used since antiquity in traditional system of medicine for its varied pharmacological activities. It is vividly explained in

Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya as well as in later *Nighantus*. It is a well-known hepatoprotective agent and has utility in various ailments. It is a liver stimulant, blood purifier, cholagogue, and is used as a purgative agent too. *Katuki* is used in the management of various liver conditions, including jaundice. It also helps to improve digestion and metabolism. Sami-Sabinsa uses the rhizomes of “*Picrorhiza kurroa*” to make the ingredient *Picroliv*, which is

used to treat bronchial and hepatic conditions.

By gaining attention of researchers all over the world, “*Picrorhiza kurroa*” has been proven for various pharmacological activities such as hepatoprotective, anti-asthmatic, anti-cancer, anti-microbial, anti-inflammatory, anti-diabetic, anti-oxidant, immunomodulatory activity, etc, thus, justifying scientific evidence for the traditional claims given in the ancient treatises.

Conservation efforts in line with the Biological Diversity Act

Sami-Sabinsa’s conservation programme to help *Kutki* through commercial cultivation is in line with India’s Biological Diversity Act (2002), which aims to conserve biological resources, manage sustainable use of the resources, and enable fair and equitable benefit sharing arising out of the use with local communities. Along with raising the standard of living of the local community, this conservation measure also makes this community proud collaborators in their larger effort to conserve the endangered species for future generations and avert its extinction from the natural wild habitat.

Sami-Sabinsa Group, while pursuing its vision of identifying and serving products that provide better health and well-being to its community, is working on more such conservation projects to protect endangered medicinal plant

species. In Madhya Pradesh, the company is engaged in a ten-year reforestation project to plant more than 1,66,600 Indian Kino (*Pterocarpus marsupium*), which is a high-value, vulnerable medicinal tree.

There is high demand for *Kutki* extracts in international markets, especially from the US and European markets. However, as this species is an endangered one, and is listed under CITES Appendix II, there could not be a significant volume of exports from India. In the financial year 2021-22, *Kutki* extracts worth Rs 4.7 million only could be exported from India. Moreover, the process of going through the steps for cultivation and procurement of the raw material for production of extract is rather laborious. Apart from it, it is essential to obtain Legal Production Certificates and Legal Procurement Certificates from the appropriate authorities for its production and procurement, and a CITES export permit is needed to export its extracts. Due to this, *Kutki* exporters struggle to obtain the raw materials needed for manufacturing and exports. Additionally, low per capita land holding for cultivating the crop in the Himalayan region and a long gestation period for cultivation – 2.5 to three years of the crop are further impediments. Therefore, in order to make this species widely available for healthcare, more stakeholders and major companies in the herbal sector need to come forward.

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