

KUTKI

Picrorhiza scrophulariflora

The Kutki is one of the major incomes generating non-timber forest products of Nepal found in the Himalayas. It is known to be one of the oldest medicinal plants traded from the Karnali zone. In Jumla, it is collected from government controlled alpine pastureland, national park, and community managed land and sold to village traders who air lift the product to Nepalgunj to a wholesaler. Kutki is a perennial herb and is used as a substitute for Indian gentian (*Gentiana kurroo*).

1. BIOLOGY

A. Taxonomy

Picrorhiza scrophulariiflora is the only species of this genus found in Nepal (Hara et al, 1982). The synonym of this species is *P. Kurroo* Hook.f. in part non Royal ex Beth.

Family - Scrophulariaceae
Local Name - Kutki, Katuki
English Name -



Kutki is easily distinguished by its elongate, stout creeping rootstock associated with withered leaf base. The skin of the rootstock is thick, wrinkled and prominently stratiated. The rhizome is evascent inside hence can be easily compressed. Leaves are radical, spatulate and sharply serrated. Flower of this taxon is white or pale blue-purple in dense terminal spicate raceme. Fruits are borne in ovoid capsule.

B. Habitat and Range

Kutki grows naturally in wild in alpine regions on rock scars as well as in organic soils. It is found in Himalayan region (Garwal to Bhutan), Southeast Tibet, North Burma and West China. In Nepal, Kutki is distributed abundantly in Alpine Himalaya between 3500 to 4800m. It is found in rocky places of Himalaya. It prefers to grow generally on the rock's crevices. It mostly grows on sloppy and cliffy mountains.

In Nepal it is also found in the eastern and central regions but abundantly in the north-western region growing on open, stony and grassy slopes, and on the turf of glacial flats.

C. Ecology

Kutki is a perennial herb of Himalaya. The flowering occurs during June-August and Fruiting occurs from September onwards. At the beginning of October, the plant turns yellowish and become ready for pereniation. After December, the plants remain under snow and at the beginning of summer the snow melts and plants regenerate from the dormant parts.

The associated plant species of Kutki are: Bhedakhaja (*Anemone tetrasepala*), Bukephool (*Anaphalissp*), Bhojpatra (*Betula utilis*), Dhupi (*Juniperus indica*), Dhupjari, Jatamansi (*Nardotachys grandiflora*), Ratoghans (*Geum elatum*) and Sunpate (*Rhododendron anthopogon*).

D. Regeneration

The natural regeneration takes place by seeds and rhizome. The plant may be cultivated at the higher altitudes in the Himalayas by both seeds and rhizome cuttings (Chopra 1958, 1982). Cultivation by the means of rhizome is considered faster than that by seeds.

2. RESOURCE MANAGEMENT

A. Management System

It is found in CFUG managed forest, government forestlands. Since Kutki is not yet included in the operational plans, the royalty still goes to DFO even if it is collected from community forest.

B. Harvesting

Harvesting season of Kutki is from October to December. However, the local people collect Kutki from May to December. The whole plant is pulled out manually. Mostly men are involved in collection of this plant. The mature plant with long rhizome is easier to harvest.

C. Sustainability Issues

Kutki is collected from May to December while the fruit matures after September, threatening the sustainability of this species. Because of unscientific collection, procedure each year the availability of this species is decreasing and the farmers have to go further far from their communities to collect. The species is threatened to extinction because over-harvesting without any management system and domestication.

3. UTILIZATION

A. Subsistence

The root is bitter in taste and has a cooling effect. It is used as a cardio-tonic, antipyretic, anthelmintic and laxative. It is also used in stomachic. It promotes an appetite and is

useful in 'Kapha', biliousness, bilious fever, urinary discharge, hiccough, blood troubles, burning sensations, leucoderma, and jaundice, purifies the nurse's milk (Ayurveda). Locally two variety of *Picrorhiza* are distinguished:

- a) White - root has a very bitter sharp taste
- b) Black - root is less bitter, purgative expectorant

B. Commercial

Kutki is in high demand in and outside of Nepal for its valuable rootstocks. It furnishes the drug, picrorhizin, obtained as dried rhizomes and roots; which is used as an adulterant of or as a substitute for Indian gentian (*Gentiana kurroo*). The dried rhizomes and roots of the plant consist of bitter principles, mainly a glucoside named picrorhizin (CSIR, 1950). Alcoholic extracts of the roots are active against *Micrococcus pyogenes* var. *aureus* and *Escheria coli*

4. MARKETING

A. Production Volume and Trade

There according to DFO information, a total of 6901 kg of dried Kutki was traded last fiscal year (2057/058 or 2000-2001), but due to ban in collection by Government there is no official record about the trading of Kutki. Now this species is traded illegally. Local traders or middlemen buy the product and airlift to Nepalgunj wholesalers.

D. Current Market Channel

Farmer/collectors --> Middlemen/local traders/airport traders -->Wholesalers -->Exporters
Farmer/collectors-->Middlemen/airport traders -->Exporters
Farmer/collectors --> Middlemen -->Regional traders -->exporters

C. Current processing

Quality is influenced by the maturity of the rhizomes at the time of harvest, the form of preparation, and duration of storage. Collected Kutki is sun-dried and stored in dry place or packed in jute sacs. Generally, the post harvesting operations practised by the collectors are limited to cleaning, cutting into small pieces and drying in the sun. In Nepalgunj, sometimes small shipments of raw material brought from different places are heaped together in the store of the trader to mix with bad quality of Kutki by traders. But no processing of Kutki is done in Nepal except grinding and mixing for the preparation of Ayurvedic drug by some Ayurvedic pharmaceutical companies.

D. Variability and Risk

There is a high fluctuation of market price each year. The price of this item varies in the district of origin according to the price in India and Nepalgunj. Transportation of these products is solely dependent on airlifting. The charges are borne by the traders. During the bad weather, when flights are cancelled frequently, the traders have to porter over land, which takes several days to reach road heads, and the volume of Kutki reduces 5–10% through the series of leading and unloading process on the way to Nepalgunj.

5. SOCIO-ECONOMIC AND POLICY ISSUES

A. Socio-economic Factors of Existing Activities

Kutki is usually found far away from the community. It takes a few hours to 1-3 days walk to reach Kutki growing habitat in Jumla district. Collectors take necessary equipment, extra clothes, food when they go harvesting. Sometimes they live inside caves, during the harvest. After sufficient harvest, they comedown with the load of Kutki. It takes at least 2 days to 5-6 days to make one full load for a person. Since the Kutki grows on cliffs and steep mountains, sometimes the collectors get injured or face serious accident during the harvest. Thus collection of Kutki is really an hardship. Sometimes the money generated from Kutki is less than their labour cost. If the Kutki collection is in a pleasant environment and a virgin area then the money generated by selling of Kutki becomes higher than the labour cost.

Generally the collectors are in financially weak position with very limited bargaining power and this situation is aggravated in places where few wholesalers have a monopoly position on the NTFP market. As a consequence, collectors are more or less obliged to accept any price fixed by the wholesaler. Moreover, the collectors have little capacity to stock NTFPs in order to take advantage of the price increases after the completion of harvest. As most of them are in dire need of money, they can not afford to invest in storage strategies. Only a few of them have knowledge of seasonal price variation.

Sometimes collectors get advance money from wholesaler or village traders. The money generated from the sale of Kutki is utilized to buy clothes, food, etc.

Wholesalers usually employ one or more agents to manage the trade of NTFPs. The agent visits individual collectors, fixes the price, and confirms the delivery to the wholesaler. The agent either receives commission or salary for his service. Agents also get other facilities from the wholesaler such as loans, credits, and presents.

Wholesalers from Jumla and Nepalgunj make “Mit” (mutual bond of trust between two people) with agent from Rimi, so that “Mit” will arrange required NTFPs in cheaper prices with collectors. This type of agent has good information about market price at Nepalgunj, India, and district trade centre. This type of agent delivers NTFPs to Nepalgunj from the collection site.

B. HMG Policy on Collection, Processing, and Trade

1. Current Policy

It is necessary to get collection permit from respective the district forest office specifying the collection area, method of collection, quantity and objective of collection. After getting the permit, collectors are legally allowed to collect but in practice collectors never take collection permit. Only the traders get a collection permit after the collection has taken place. Traders get release permission after paying royalty of Rs 15 per kg to DFO. Without the release permit, nobody is allowed to take Kutki from the district of origin. Officially, Kutki is now banned by Government for collection, processing and trading, this regulation about banning Kutki collection, processing and trading need to be change after ensuring the sustainable production of Kutki. Forest personnel are allowed to conduct search, undertake arrests, conduct investigation, and file cases to check the illegal collection and trade of this product.

2. Policy Constraints

After paying royalty to DFO and CFUG, the traders are legally allowed to release Kutki from respective district of origin within 15 days. During this period, if the traders could not manage air transport again they have to extend the date with the DFO.

6. REFERENCES

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