

***Hedychium spicatum* Buch.-Ham.: A high valued skin glowing and curing medicinal herb needs future attention on its conservation**

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Abstract: Himalaya is known for its rich biodiversity. Due to unique geographical setup, topography and undulant landscape the climatic conditions varied along an altitudinal gradients which attributes diversified ecological habitat ranging from tropical forest, grassland to alpine meadows with vast and diverse natural resources. This article describes a high valued skin glowing and curing medicinal herb needs future attention on its conservation. [New York Science Journal 2010;3(11):86-88]. (ISSN: 1554-0200).

Keywords: Himalaya; biodiversity

Himalaya is known for its rich biodiversity. Due to unique geographical setup, topography and undulant landscape the climatic conditions varied along an altitudinal gradients which attributes diversified ecological habitat ranging from tropical forest, grassland to alpine meadows with vast and diverse natural resources. Kedarkhand and Kurmanchal which is today's Uttarakhand is new hill state carved out of the northern part of Uttar Pradesh, and lies in 28^o 43' to 31^o 28' north and 77^o 32' to 81^o 00' east; which forms north-western part of country, starting from upper Gangatic plain in the south region and extends up to snow-claded peaks of the Himadri, marking the Indo-Tibeten boundary. The state constitutes a unique geographical and geological entity comprising a diverse social, cultural, agro-economic and environmental setup. The land comprising 13 districts of Garhwal and Kumaun with about 53,484 km² area and 84, 79,562 populations, has many charms to offer. If the timeless temples and joyous and colourful society lend it cultural importance, it is the abounding mountains, rivers, flora and fauna that invoke a feeling of awe in everybody. Being situated in the lap of Himalaya the region is rich in forest wealth that ranges from subtropical to alpine types. Floristically, it falls under the west Himalayan biogeographic zone and it is rife with floral diversity comparable to any other Himalayan region in the country with an estimated 4000 species of flowering plants having great economic, medicinal, aromatic, and aesthetic value.

In western Himalaya about 500 species of medicinal plants are used for curing illness from time immemorial. Anthology also reveals that the life

saving drug Sanjivani was taken from Dronagiri peak of the Himalaya, which is 3rd highest peak of western Himalaya, on the direction of a celestial physician Dhanvantri. The Uttarakhand has rainfed conditions and the people have very limited life supporting resources and are either dependent on subsistence agriculture and tourism as their primary livelihood. Hence traditional agriculture is uneconomical and can not support the poor farmers of the region. Nearly 75-78% population of the state is dependent for their food energy on horticultural crop and terrace faming. Though the maximum population involved in agricultural activities but due to subsistence agriculture ecosystem, the output to feed the needs of people is not sufficient and monetary gain is also very low which forces the youth of the region to migrate in the metropolitan cities in search of better livelihood. However, the state is home of many traditional medicinal resources which have been extracted for modern medicinal uses in the recent years at a large scale from all over the Uttarakhand and many of which remain unexplored for their trade potential and nutritional value and become a subject of great interest recently. The ethno-cultural diversity in the Uttarakhand is quite pronounced and folk medicinal practices evolved parallely using the native medicinal plants, may become viable and sustainable economic generating option for the region. A conservative society, weak economy, inaccessibility and consequently lack of modern medical facilities in the rural areas of the state are the factors leading to interest toward the indigenous medicinal plants for new and sustainable economic generating option. There is virtually no cultivation

cost involved, and therefore is a good source of extra income for farmers. Several medicinal plants (*Taxus baccata*, *Acorus calamus*, *Bergenia ciliata*, *Swertia angustifolia*, *S. chiriyita*, *Berberis* species, *Aconitum atrox*, *A. heterophyllum*, *Nardostachys jatamansi*, *Plantago depressa*, *Podophyllum hexandrum*, *Rauvolfia serpentina*, *Picrorhiza kurrooa*, *Rheum emodi*, *Dioscorea deltoidea*, etc.) are well known for their medicinal value in world market. But the resources are dwindling fast due to lack of any significant conservation efforts. The local people are by and large aware of the nutritional value and medicinal properties of these plants. Therefore, the medicinal plants of the region requires an immediate attention; listing of the medicinal plants and documenting the inherited knowledge passed through several generations. At the same time due consideration is also required for conservation of diversity protecting the threatened status of herbs for reckless exploitation.

Identification and cultivation of new wild medicinal and economically viable crops adapted to wide range of climatic and soil conditions are essential for sustainable agriculture in arid and semiarid regions, for higher economic return. It can replace the existing cultivation which is largely uneconomical. It can also play a vital role in sustaining natural resources and restoration of degraded lands and thus help the upgrading the natural resource and quality of poor farmers life. However, recently the Uttarakhand Govt. has declared itself an herbal state and the Herbal Research and Development Institute Gopeshwar (HRDI) have been created as a nodal agency for the furtherance of this cause. Besides the Govt. establishing the several nurseries all out the state, the participation of local traditional knowledge can not be ignored, which have may valuable practice unknown to outside world so far. The sufficient scientific skill, agricultural manpower and traditional knowledge of indigenous medicinal use of Uttarakhand has a great scope to exploit the global market of plant derived drugs and botanicals as raw ingredient of herbal products and can get considerable size of market both nationally and internationally. It is estimated that world market of plant derived drugs is about 2 lakhs crores. The new opportunities generated by recent technological advances in medical and aromatic plants cultivation, processing and business can make farmers capable for becoming viable industry of tomorrow. Out of several medicinal herbs reported from Himalayan region, *Hedychium spicatum* a high valued skin glowing and curing medicinal herb is one of them.

Hedychium spicatum Buch-Ham. belonging to family Zingiberaceae locally known as Ban-Haldi

is a tall perennial herb with leafy stems that grow the beneath of forest cover on marginal land and growing up to 1.5m by 0.7m. The leaves oblong or oblong-lanceolate, reaching 30 cm or more. Spikes sometimes 30 cm, densely flowered, bracts large, oblong, obtuse, calyx shorter than bract flower white ascending and closely imbricate type. Stamen rather shorter than lip, anther linear, capsule glabrous, globose. It flowers in October. The flowers are hermaphrodite (has both male and female organs).

Hedychium spicatum grows well in moist soil, sunny position and wide range of climatic conditions of forest margins from 1500 to 2800m asl. It tolerates temperature down to about -2°C and has been known to withstand temperatures down to -16°C. It can be grown at the foot of a south-facing aspect if given good mulch in the winter. Plants seem to be immune to the predations of rabbits. The tubers should only just be covered with soil. The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant thrives better in acid, neutral and basic (alkaline) soils. It cannot grow in the shade and susceptible to frost.

The fleshy rhizomes running at or just below the soil surface which have a so-called indeterminate growth habit The leafy shoots that emerge above ground and carry the spiky leaves that make *Hedychium* such striking plants even when not in flower. The flowers are borne from midsummer to autumn at the top of the leafy stems although not every stem will produce a flower spike or inflorescence. On the inflorescence the flowers emerges in the axils of green leafy bracts that in some species roll in on themselves to form a tube from which the flowers emerge. Deep dry mulch will help protect against the worst of the winter cold. It is suggested that *Hedychium* should be grown under light shade except in marginal gardens where they are best in full sun. Keeping plants well watered in summer can mitigate the tendency for flowers to go over quickly in full sun. *Hedychium* resent being lifted annually and stored as dry rhizomes over winter. *Hedychium* should preferably be left in situ in the garden over winter. If you are concerned about losing the plant to frost then it should be mulched for the. Alternatively whole clumps can be lifted and potted for the winter. In each case the plants are overwintered under protection still in leaf so that they continue to grow slowly in winter.

Medicinal Uses: The roots and leaves are used in several Ayurvedic preparations and has great potential for exports. The powder as well as decoction of root is carminative; digestive; emmenagogue. A small cup of root decoction twice in a day is expectorant; stimulant; stomachic; Tonic; Vasodilator. The one spoonful powder of root thrice

in a day is useful in the treatment of liver complaints, and is also used in treating fevers, vomiting, diarrhoea, inflammation, pains and snake bite. The root is used in Tibetan medicine, it is said to have an acrid taste and two spoonful powders twice in a day is given for heating potency to the female. It is used in the treatment of indigestion and poor circulation due to thickening of the blood. The rootstock is acrid, bitter, pungent, heating, and astringent. The root powder 3-4 gm 2 times in a day is used in asthma, foul breath, bronchitis, hiccough, vomiting, tridosha, diseases of blood. Root powder is laxative to bowel and decoction is tonic to brain.

Besides above medicinal properties the fruit cooked and eaten in savoury dishes with lentils and also used for essential oil and incense. Crushed dried root both the bruised and the dried root are very aromatic with a fragrant, somewhat pungent smell similar to orris root but more powerful. The rootstock yields 4% essential oil. This oil, which has a scent

somewhat like hyacinths, is so powerful that a single drop will render clothes highly perfumed for a considerable period. The dried root is burnt as incense. The Fresh flowers are sweetly scented, the scent being most pronounced towards evening.

Propagation

The seeds of this plant should be sown just after ripening of fruit. Allow to grow large enough and keep as such at least first winter in its natural habitat and plant out in late spring in the forests margin. For the vegetative propagation dig up the clump and divide it with a sharp spade or knife, making sure that each division has a growing shoot. Larger clumps can be planted out direct into their permanent positions, but it is best to pot up the smaller divisions and grow them in its own nature until they are established. Plant them out in the summer or late in the following spring.



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Hedychium spicatum

Family : Zingiberaceae

Local name : Van Haldi, Kapoor kachri, Sati

Trade Name : Kapoor kachri

Status : Near endemic threatened

Market value : Rhizome dry weight @ Rs. 15-60 per kg



Hedychium spicatum growing in natural habitat

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Date: 12/06/2009