

HIMALAYAN WILD YAM OR TAIDU (*Dioscorea deltoidea*) CULTIVATION FOR HIMALAYAN REGIONS *Naveen Chandra*

Abstract

A popular vegetable eaten during the fast of Shivratri, Taidu or Yam (in English) is a wild vegetable dug by locals in the forest of Uttarakhand and Himachal Pradesh. It also has a lot of medicinal and nutritional qualities because of which it is eaten post fast to nourish the body. Tarud (Tald) is a kind of tuber root food whose vegetable is made and it is found growing more in the mountains. Tarud, Taur or Taidu (botanical name *Dioscorea deltoidea*) is a perennial vine plant. Its rhizomatous stem continues to grow in thickness and length underground as a large underground tuber, which may take various shapes. Along with this, its vine also spreads above the ground and covers the surrounding vegetation. Its vine also bears fruits which are mainly used as its seeds.

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Introduction

Tree plant in the form of a vine in the Himalayan regions from Kashmir to Himachal Pradesh, Uttarakhand, Assam, Arunachal Pradesh and western China in various places at an altitude of 500 to 3000 meters above sea level on barren land or wild vine in forests. It is found growing as Somewhere in the mountains, people also grow it in their homes on the slope of the bunds of the hill fields or even inside a big pot. In Kumaon, the home-grown tree is called ghar tarud and the tree obtained from the forest is called ban tree. Tarud is known by various names in our country like Tald, Tarul, Taid etc. In English it is known as Himalayan wild yam or Nepal Yam. Its botanical name is *Dioscorea deltoidea* and under the *Dioscorea* genus, about 600 species are reported worldwide which belong to the *Dioscoreaceae* family. Wikipedia lists 613 species of the *Dioscorea* genus.

Plant Morphology

The arranged leaves of the tree are simple, length 5-11.5 cm, width 4-10.5 cm, ovate or triangular-ovate, often heart-shaped, basal lobe rounded or sometimes tapering outward, 7-9-pointed, Long-pointed, hairy above, velvety on the veins below. The leaf-stalks are 5-10 cm long, slender. The plant flowers during May–July, the male flower spikes solitary, simple or sometimes branched in the leaf axils, slender, rhombic, 7.5–25 cm long. The flowers are in small distant clusters; Stamens 6, antheriferous. Female spikes are solitary, slender, up to 15 cm long, few-flowered. The capsule is 2 cm long, 3 cm broad, thick or obtuse. The seeds are winged unevenly all-round. According to botanists, Tarud is generally a tropical plant, but some of its species have been found to extend to temperate regions. Some wild species of Tarud are toxic to human health due to the presence of steroidal saponins. But they can also be made edible by detoxifying them. Since ancient times, the species of edible plant and poisonous plant are identified by its leaves because the leaves of the edible species are found opposite to each other and alternate leaves are found in the poisonous species.



Medicinal Use

It is said that in some countries it is also used locally as medicine, hair wash. In general medical use, the juice of tarud's tuber is used in the treatment of roundworm, for which its root-tuber juice is extracted in the evening. Apart from this, this Ras is also used to reduce constipation. In modern medical science, Steroidal saponins present in poisonous species of Tarud are also used for Steroid hormones and contraceptives after passing through many chemical reactions. These compounds are of immense importance medicinally, industrially and commercially. *D. deltoidea* is expectorant and sedative. It is used in the treatment of diseases of the cardiovascular system, central nervous system, dysfunctional changes in the female reproductive system, bone and joint metabolic disorders, skin diseases, oncology, and immuno-deficiency and autoimmune diseases. *D. deltoidea* is commercially used for its bioactive chemical substances such as diosgenin, corticosterone and stigmasterol. *Prunus* is considered an important botanical in medicinal use primarily as a source of the active compound diosgenin. For which it is usually obtained from forests and it is also cultivated in some countries like Vietnam and Russia. A chemical called "diosgenin" with various medical uses is found in the root-tuber of most of its species. The roots of its different species contain an average of 4.8% diosgenin. Diosgenin, a steroidal aglycone, is the key compound chemical in the chemical synthesis of many hormones. Stigmasterol, Sapogenins, Cortisone, Pregnenolone, Progesterone, Beta-Sitosterol, Ergosterol are made commercially from Diosgenin which help in synthesizing Progesterone and also help in synthesizing Vitamin D3 in the body. Diosgenin is widely used in modern medicine for the manufacture of progesterone and other steroid drugs. These are used as contraceptives and in the treatment of various disorders of the genital organs as well as other diseases such as asthma and rheumatism. Diosgenin is used in medical science, apart from sex hormones and contraceptives, by bodybuilders to increase the level of testosterone hormones in the body.

Propagation

The tree *Dioscorea deltoidea* belonging to the species *Dioscoreaceae* produces rhizomes or bulbils that are rich in sapogenin steroidal compounds. Seed - sow March to April in a sunny position in a warm greenhouse and only just cover. It germinates in 1 - 3 weeks at 20°C. Prick out the seedlings as soon as they are large enough to handle and grow on in a greenhouse for their first year. Plant out in late spring as the plant comes into new growth. Basal stem cuttings in the summer. Division in the dormant season, never when in growth. The plant will often produce a number of shoots, the top 5 - 10 cm of the root below each shoot can be potted up to form a new plant whilst the lower part of the root can possibly be eaten. Tubercles (baby tubers) are formed in the leaf axils. These are harvested in late summer and early autumn when about the size of a pea and coming away easily from the plant. They should be potted up immediately in individual pots in a greenhouse or cold frame. Plant out in early summer when in active growth.

Conclusion

This plant is special because its rhizomes contain Diosgenin, which is a phytoestrogen that convert into the hormone progesterone. Diosgenin is a basis for anti-

infertility drugs such as contraceptive pills, and sex hormones, such as testosterone and supplements are used by body builders to increase their testosterone levels and build muscle strength. Dioscorea tubers are straight and zinger like shaped. The tubers Of Dioscorea are use in the management of a number of diseases such as gastrointestinal disorders, sour throat from struma, diarrhea, irritability, abdominal pain, wounds, burns and anemia. The tubers are also supposed to possess activities like antimicrobial, antioxidant, stomachic and hypoglycemic activities. Besides it, Dioscorea is used extensively in the treatment of dysentery, piles and chronic liver pain disease.

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