

Soil data

Texture	pH	Water holding capacity (%)	Organic carbon (%)	Nitrogen (%)	Available phosphorus kg/ac	Potash kg/ac
Lomy sand	4.6	62.14	2.90	0.028	19.95	149.68

Experimental Materials

Experimental studies included two species of Dioscorea viz. 1) D.prazeri and 2) D.composita. Short botanical descriptions of two species and their medicinal uses and distribution in India have been given below :-

1) D.prazeri, Prain & Burk. is native to this country. In Bengal it is known as Kukur-torul and Lepchas call it Kencheong.

It is a left twining herb, ascending to a height of 4 m or more. Rhizomes very poisonous, superficial, stout, horizontally creeping, freely branched; branches about 10 cm X 1.5 cm, flesh white or creamy. Stem terete or faintly ridged, sometimes purplish-brown, speckled. Leaves alternate, rarely opposite on the lower nodes; petiole 4-8 cm. Lamina ovate, usually 12 cm X 10 cm from petiole to ocumen,

sometimes upto 20 cm X 30 cm, cordate, acuminate, basal lobes divergent; Male flowering axes 2 or more together, rarely solitary, axillary, slightly winged and twisted upto 20 cm long; transitional stages approaching a terminal panicle are found. Male flower sessile, 1-3 together; female flowering axis solitary, axillary, 12 cm or more in length, bearing 20 flowers, capsule sessile.

D.prazeri occurs in wetter parts of the Himalayas in North Bihar, North Bengal, Nepal, Bhutan and in Abor hills of Arunachal Pradesh. It also grows in the Naga Hills, at an elevation of about 1,690 m. In Sikkim, it occurs in Shorea forest. It is found in Darjeeling Tarai, Jalpaiguri and Malda. In Bihar, it is found in Champaran district. According to information available on the basis of 1976 botanical exploration, it has been reported in Lungali district of Arunachal Pradesh.

2) D.composita Hemsl. is not native but have been found to be easily cultivable and perhaps one of the species which should mainly be encouraged for the commercial cultivation of Dioscorea. It is nearly glabrous, right-twining vine with large, deep-rooted tubers; leaves alternate, long, petiolate, abruptly acute. Cuspidate-acuminate shallowly or deeply cordate, 7-9 nerved. Flowers dense, sessile; in

staminate, simple or branched inflorescence, fasciculate-glomerate; fascioles short, stipitate; 2-3 flowered perianth rotate, .5-2 mm broad; male fascioles 15-30 cm long, fertile stamens, 6; in female flowers stigma bifid, Tubers are white, large and deep-rooted.

This Central American species grows well in Peninsular India. This plant does well at Bangalore and in the Union Territory of Goa, Jammu and Jorehat. It is also doing well in the Anaimalai Hills and in Darjeeling Hills.

The rhizomes, commonly known as yams, are the main sources of diosgenin. Diosgenin occurs as rhamno-rhamnoglucoside (dioscin) in the root tubers. Diosgenin is the base for several steroidal hormones including sex hormones (testosterone, estradiol and progesteron); Corticosteroids (Cortisone and Prednisolone) and also, an active ingredient in the oral contraceptive pill containing esterogen (ethynyl estradiol and menstranol) and Progesteron.

Experimental Methods

Selected crown portions of tubers weighed 60 gms each (for both the species) were taken and planted in experimental nurseries. After sprouting, the tubers were directly sown in experimental plots during 1st week of May, at spacing