

# A short report on the first account of morphological variants of *Trillium govani anum* observed at Tungnath, Indian Himalayas

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## ABSTRACT

Three new morphotypes (2, 4 and 5 leaved) of *Trillium govanianum*, commonly known as Nagchattri, have emerged in cultivated as well as natural conditions at Tungnath (30°29'60"N and 79°12'98"E), Uttarakhand, India, and are reported here for the very first time. Various flora and articles have been checked and none found for any prior published data or sighting reports of such individuals. A general description along with photographs has been presented here.

**Key words:** *Trillium govanianum*, New morphotypes, First report, Four leaves, Five leaves

## Introduction

*Trillium* derives its name from the Latin word for three because all parts in it occur in threes (Dave's Garden). *T. govanianum* belonging to family Melanthiaceae is a native of the sub alpine Himalayan regions of India, Nepal and Pakistan. *T. govanianum* has been proven a potent medicinal plant and is found to contain steroids as disogenin and trillarin. Rigorous illegal exploitation of the plant has led to a significant decrease in its natural population in almost all the Himalayan region (Vidhyarthi *et al.*, 2013).

### a. Habit and Habitat

*T. govanianum* can be commonly found growing in moist and shady places under the canopy of trees like *Abies*, *Rhododendron* etc. and is easily identifiable because of its three leaved morphology with a solitary flower sitting on top of it. In various floras and e-floras a general description of *T. govanianum* has

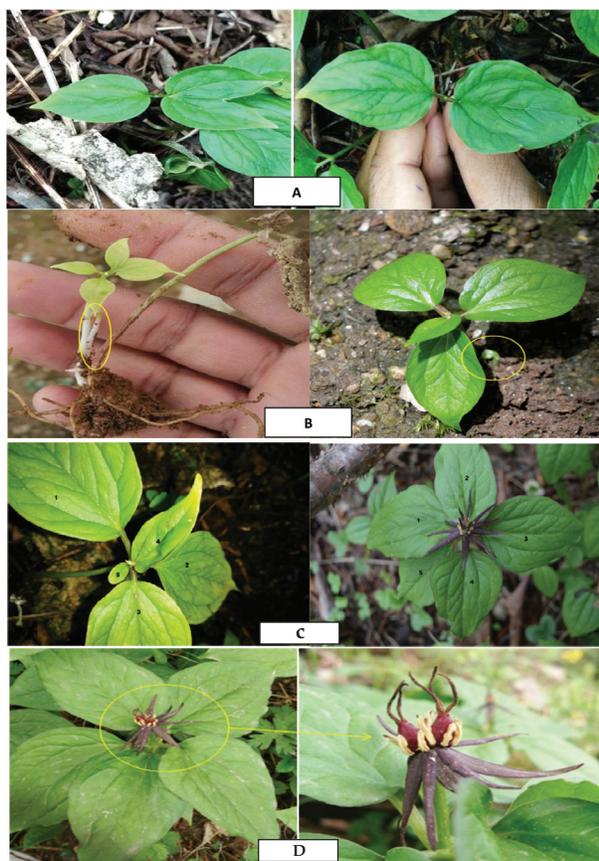
been given as such:

### b. Morphology

*T. govanianum* is a perennial plant with underground rhizomatous structure. It emerges either as one leaved juvenile, three leaved vegetative or three leaved reproductive plant and remain as such till senescence. The leaves are ovoid in shape and emerge from beneath a single, small, starry flower of deep red and green color. This species is unusual in that the sepals and petals resemble each other, giving a six-petalled appearance. These contrast well with the prominent yellow anthers and red style that sits atop the flower. The flower is followed by a grape-red fruit.

### Key Findings

The present findings are part of an in-situ conservation study on *T. govanianum* in which the plants were grown under open top warming chamber, shade house at lower elevation (2200m asl) and



**Fig. 1.** A) Two leaved individuals, B) Four leaved individuals C) Five leaved individuals D) Five leaved plant with two fruiting bodies

were also protected by fencing in their natural pockets. During the study it was observed that an individual with four leaves emerged in late September 2017 inside the open top warming chamber and subsequently in the following year another such individual emerged at the lower elevation. Also dur-

ing our field visits in the year 2018 we found five and four leaved individuals of *T. govanianum* in the natural protected populations. The frequency of the four leaved plants was highest followed by two and five leaved plants. Two kinds of four leaved individuals were found, one with the fourth leaf developing from the middle portion of the leaf whorl above the three leaves and the other with the fourth leaf forming in the same whorl. Gates (1917) have also reported appearance of extra leaf whorls in *Trillium grandiflorum*. The five leaved individual had a single flower with 09 tepals (sepals+petals) and 11 anthers and later formed two fruiting bodies. These five, four and two leaved individuals were again sighted in 2019 in the same natural patch. These individuals lasted up till senescence in the year 2018 and 2019 (Figure 2).

### Acknowledgements

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