

# Indian Aconites: Boon or Bane?

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## Abstract

Aconites were widely recognized as deadly poisonous plants since ancient times and are used in various traditional systems of medicine such as Chinese, Ayurveda, Siddha, Unani, Tibetan medicine, etc. after eliminating the toxic effect through traditional methods and are also used in modern Homoeopathic and Allopathic systems. *Aconitum ferox* is known as Indian aconitum, which is seven times more poisonous than the *Aconitum nepellus*, the European aconitum. Further, *Aconitum ferox* is also known as 'the king of poisons' due to the presence of highly poisonous alkaloids in its roots. This article highlights the botanical/medicinal importance of Indian Aconites and their legal status for trade/export.

**Keywords:** Aconitum; Aconites; *Aconitum ferox*; Pharmacognosy; Vegetable crude drugs; Siddha; Ayurveda

## Introduction

The herbaceous genus, *Aconitum* L. belongs to the buttercup family, Ranunculaceae. It comprises ca. 100 species, distributed majorly in North temperate mountainous regions of the world [1]. In India, the genus is represented by 27 species, mainly distributed in the alpine and subalpine regions of Himalayas [2]. Of these, 18 have been reported to have poisonous/medicinal properties. Aconitum is also known as Aconite, Monkshood, Wolf's bane, Leopard's bane, Women's bane, Devil's helmet or Blue rocket. The crude Aconite root drugs are well-known for their therapeutic values across the globe since ancient times. Crude aconites have an extremely lethal substances. However, the processed aconites are less toxic and can be utilized therapeutically [3]. The crude root of *Aconitum ferox* can be processed using traditional Ayurvedic Shodhana method. The roots were cut into small pea-sized pieces and kept in earthen pot containing cow urine for 8 days and on each day, the cow urine was changed for 7 days. On the 8th day, cow urine was not changed, but the earthen pot was kept in sunlight. Then, it was washed with cold water. The pieces of crude roots were dried immediately by exposing them to sunlight. The dried root pieces were grinded to get powder of it. Shodhana method eliminates harmful matter in the crude aconite root, and modifies or converts undesirable properties to desirable, thereby enhances therapeutic actions. By Shodhana method, the toxic constituents from the roots are either removed or made less toxic before using them in the drug formulations [4].

## Classification of aconites

Stapf [5] classified the Indian Aconitum/Aconites into three main sections based on the life span of the root (annual, biennial and perennial), and by the external/internal structural features of the individual Aconite species. The three sections are: Gymnaconitum, having annual roots; Lycotconum, possessing perennial roots; Napellus, with biennial roots. The majority of the species fall into the biennial, Napellus section. This section has been further divided into three sub-sections with reference to their anatomy: True Napellus, with continuous cambium; Anthora, with up to six discontinuous concentric rings or irregular batches of cambium embedded in uniform tissue; Deinorrhizum, with isolated bands of cambium embedded in secondary phloem. Though Stapf's arrangement of Aconites had been criticized, it still serves as good baseline information to taxonomists and anatomists to identify the species to a greater extent [6]. Roots/

rhizomes of *Aconitum ferox* are used in Tibetan medicine, Ayurveda, tribal and folk medical systems. It has been used as an arrow poison since early times and it is also used in medicine due to its narcotic and sedative properties [2]. Consumption of unprocessed tuberous Aconite roots is fatal due to the hazardous effect of alkaloids present in the roots, which directly acts on the central nervous system of our body [7]. In Ayurveda, the plant is used to treat asthma, cough, throat pain, swelling, pain, fever, dysentery, diarrhoea, intestinal diseases and cut wounds and also as heart tonic.

## Indian aconites - A boon to the society?

In general, the term Aconites refer to all the species of the genus *Aconitum* in India, however, in particular, Indian Aconite refers to the one and only species, *Aconitum ferox*. It is seven times more poisonous than the *A. nepellus*, the European aconitum. The Indian Aconite is also referred to as 'The King of Poisons' due to the presence of highly poisonous alkaloids in its roots. Considering its usefulness in getting relieved from various diseases/disorders, it can be regarded as a boon to the human society. Generally, the underground roots/rhizomes are not distinguished into mother or daughter roots/rhizomes. However, most of the Aconites possess a pair of tuberous roots, the first formed root is known as mother root and later formed root is known as daughter root. Sometimes, more than one daughter roots are formed. Further, the tuberous roots/rhizomes of Aconites possess diverse anomalous anatomical characters. These structural differences can be considered as a boon to the anatomists, which help to delimit the taxa anatomically in their crude form to certain extent.

## Indian aconites - A bane to society and/or ban for illegal trade?

The highly poisonous nature of the Aconites may be considered as bane to society, however after detoxification, they may be used as

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medicine under proper guidance of the herbal practitioners. It should be noted that Aconites are having some common names such as Wolf's bane, Leopard's bane and Women's bane due to their deadly poisonous properties. Most of the medicinal plant species which possess very effective therapeutic properties have become rare, threatened, vulnerable and endangered in the wild, either due to over-exploitation or due to loss of their natural habitats. Such plants have been enlisted under the title 'Negative List of Exports' in 1998 by Government of India, so as to regulate their trade/export on one hand and on the other to check unplanned/illegal exploitation from wild sources. All the 27 species of Indian Aconitum have been placed under Negative List of Exports in India, the trade/export of these species collected from the wild sources has been banned. The ban would aid in conserving these plant species in their natural habitats to certain extent. In short, the legal ban on Aconites by Government of India may also be considered as a boon, since it indirectly protects the wild population of Aconites to certain extent.

## Conclusion

The title of the article has been designed in a debatable way to make the content of the article interesting, informative and useful to the readers. In general, the Indian Aconitum, whether it is a boon or bane to the society, is depending on the cause, good or bad and the usage, whether it is used for constructive purpose to heal a person or used for destructive purpose to kill a person. Aconites are mostly poisonous and rarely non-poisonous. The highly poisonous (highly medicinal) species among the Aconites is *Aconitum ferox*, which is popularly known as Indian Aconitum and also referred to as 'The King of Poisons'. It can

be considered as a boon to the global human society in general and Indian society in particular in view of its usefulness in treating the diseases/disorders. Further, a ban on all the species of Aconitum for illegal trade/export procured from wild sources may also be regarded as a boon to the wild Aconitum species population including *A. ferox*, why because it paves the way for the very survival of the Aconites in the wild to certain extent.

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