

BURANSH

(RHODODENDRON ARBOREUM)

STATE TREE OF  
UTTARAKHAND



## Introduction: -

The Government of India has declared Buransh Tree to be the **state Tree of Uttarakhand** and its flower as the state flower of Nagaland. Although, it is wild plant but it's very first species with medicinal value i.e. *Rhododendron arborium* was discovered in the Srinagar Forest of Jammu Kashmir in India. Buransh is not only the tree with medicinal properties but also is an evergreen plant and thus can be used throughout the year Rawat et al. (2021). Other than medicinal properties we can also use it for food processing and marketing purposes like making refreshing drinks, juices, colouring agents, decorations and firewood

## Scientific Classification of Buransh: -

Local Name: Buransh  
Scientific Name: *Rhododendron arboreum*  
Order: Ericales  
Family: Ericaceae  
Genus: *Rhododendron*  
Sub genus: *Hymenanthus*  
Species: *Rarboreum*

S.No	Sub species	Colour of Flowers	Location
1	R.arboreum spp. Arboreum	Red	Western Himalayas
2	R.arboreum spp. Cinnamomeum	White, pink orred	Central Himalayas
3	R.arboreum spp. Delavayii	Red	Eastern Himalayas
4	R.arboreum spp. Nilagiricum	Red	Nilgiri

### Botanical Description of *Rhododendron arboreum*: -



1. *Rhododendron* is an evergreen shrub with maximum height of about 15m, distributed all around Western Indian Himalayas.
2. The Bole is found to be as much branched and gnarled.
3. Bark is found to be soft and rough with reddish brown colour
4. Oblong- lanceolate rolled crowded towards the end of branches leaves with length 10- 20cm and width 3.6cm.
5. Young petals are covered with white scales Lal et al. (2019)
6. Flower colour varies from pink to white and deep scarlet to red with white markings.



7. At lower portion of the tree bright red colour flowers can be found.
8. Orwaa reported that Seeds are small like minute as well as dark brown as Madhvi et al. (2019).

## Buransh Juice Benefits: -

- 1) Good for diabetes: - Buransh flower can be used to treat both type I and type II diabetes as it has anti-diabetic or in-vitro anti diabetic activity potential. The action of certain glucose enzymes gets restricted due to the presence of hyperin which has an antioxidant property, which results in reducing blood sugar and cholesterol level Bhula, P. (2014).
- 2) Reduces Inflammation: - Buransh flower has an anti-inflammatory property of flavonoids, quercetin and rutin which helps in reducing inflammation. As Quercetin helps in reducing the inflammation of prostate, kidney and Urinary bladder while mouth and stomach ulcers can be treated through Rutine Krishna, H. (2012).
- 3) Prevents Cancer: - Buransh flower contains the Quercetin and Rutin content which helps in reducing the risk and growth of cancer. As the phytochemicals and anti-oxidant properties of flower avert the damage of body cells which lead to mutation and development of cancer (Nanda, A.)
- 4) With painkilling ability: - Paste is made from the leaves of Buransh is applied on the forehead for the relief of headache. Buransh flower can be used to make a drink in summer to avoid dehydration, stomach pain and to get relaxed Chauhan et al. (2021).
- 5) To treat Anemia and Body Weakness: - As the flower of Buransh contains an iron content which is used to overcome an anemia. As the Buransh flower are rich in nutrients Fe, Ca, Zn, Cu etc. helps in reducing body weakness and have an anti- microbial property which helps in keeping the body healthy Negi, V.S. (2013)
- 6) To treat Covid-19 infection- The IIT and ICGEB researchers have made an experiment on Buransh and identified that the Himalayan Buransh petals contains phytochemicals which shows antiviral activity and is very useful for the treatment of Covid-19 infection as it fights against the virus.

Petals of Buransh hot water can be used for drinking juices as it is rich in quinic acid and its derivatives Sharma, G. (2022).

## Rhododendron in Uttarakhand and their uses

### Rhododendron arboreum

Amongst the Indian species, *Rhododendron arboreum* Smith (Ericaceae) is the most widely distributed and occur from the western to the eastern Himalayan region of India and other neighboring countries. *Rhododendron arboreum* is the state tree of Uttarakhand. It is called Burans, “Bras” and „Buras” in the local dialect. *Rhododendron arboreum* holds the Guinness Record for World Largest *Rhododendron* and is widely popular for its medicinal benefits & economic value In Uttarakhand, it is widely popular for processed juice of its flowers which have gained market popularity as Rhodojuice/Sharbat. It is a small evergreen tree often with a somewhat crooked trunk. Bark soft, easily cut through with a pocket knife, 0.5-1 inch thick, old bark grey, exfoliating in irregular longitudinal plates, exposing the smooth pinkish new bark beneath. The wood is of inferior quality, both as timber and as fuel.

**Distribution and habitat:** - This is a common tree in western Himalaya, occurring chiefly at 2500 - 2800 meter in association with *Quercus leucotricophora* and *Lyonia ovalifolia*, and at the lower elevations with *Pinus roxburghii*, but ascending to 3400 mt. or even higher. It is somewhat rare in hazara, being commonest in the Siran *Pinus longifolia* forests at 1400 meters and upwards in moist ravines. It extends to the eastern Himalaya, where, it is less common; it is also found in the Khasi hills and the hills of Burma, southern India, and Ceylon.

**Flowering and Fruiting:** -The large showy crimson, sometimes pink, flowers in dense corymbs appear usually from March to May, but in certain years only partial flowering takes place then, and



a second flowering takes place in June and July; this happened in the Shimla hills in 1916, following an exceptional dry winter and spring, and the flowers of the second bloom were paler in colour than usual. Similar late flowering is also said to take place if the first bloom is checked by hail or other related injuries. Occasionally trees may be seen in flower in January- February. The fertilization of the flowers is carried out partly by insects. Mr. G.B.F Muir notes an interesting case observed in Tehri Garhwal of Indian martens (*Martes flavigula*) visiting one cluster of flowers after another and thrusting their noses into the flowers to lick up the nectar; fertilization is thus carried out by their agency, and possibly birds may also be agents in cross-fertilization.

The capsules are 2 to 3 cm long by 1 to 1.5 cm in diameter, oblong, curved, greenish brown when ripening, and then turning brown. They contain a large number of minute dark brown compressed oblong seeds about 0.05 in. long, with a fimbriate tuft at either end. The capsules open and shed their seeds chiefly from January and March (western Himalaya). The open capsules, as a rule, remain many months on the tree.



Plate 1: *Rhododendron arboreum* in Phairikhal

Table 2: Uses of Rhododendron Species

General uses		
Uses	Species	Parts used
Fuel wood	Rhododendron arboreum Sm. R. barbatum Wall. ex G. Don R. campanulatum D. Don	Main stem and branches
Preparation of Jams, jellies and Juice	Rhododendron arboreum Sm.	Fresh corolla
Making of cups, spoons, boxes, saddles, kukri handles	Rhododendron arboreum Sm.	Wood
Snuff		Powdered bark
In worship		Flowers
Decoration of hair bun		Inflorescence truss
In Indoor decoration	Rhododendron arboreum Sm. R. campanulatum D. Don	Inflorescence truss
Incense; used along with Junipers	R. anthopogon D. Don	Leaves and twigs
Medicinal uses		
In treatment of diarrhoea and dysentery	Rhododendron arboreum Sm.	Fresh flowers
Taken with ghee after		Dried flowers



frying to check blood dysentery		
Taken when fish bones stuck in the gullet		Fresh and dried corolla
Used as poultice in high fever and headache		Leaves
Used in treating chronic rheumatism, syphilis and Sciatica		Leaf decoction
Used as snuff after mixing with tobacco leaves to cure Hemicarnia and colds	PROJECT R. campanulatum D. Don	Powdered dried leaves
In treatment of chronic fevers		Dried twigs and wood in powdered form
In treatment of Catarrh; also in treating cold, cough, chronic bronchitis and asthma; administered to produce sneezing	R. anthopogon D. Don	Decoction of leaves



In treating indigestion and lung infection		Decoction of leaves and flowers
Mixed with oil and used in massage in post-delivery complications		Dried flowers in powdered forms
Drinks made is supposed to be purgative	<i>R. lepidotum</i> Wall. ex G. Don	Bark
Poisonous		
Harmful when consumed in excess	<i>R. arboreum</i> Sm.	Nectar of Flowers
Poisonous to livestock	<i>R. campanulatum</i> D. Don	Leaves
Fish Poison	<i>R. barbatum</i> Wall. ex G. Don	Leaves

## Rhododendron a keystone species of the biodiversity

Rhododendron plays an important role beyond admiring as keystone species of Himalaya region. It is one of the most important genera of the Himalayan region which has a major use in landscaping, accent, and woodland planting. It has the potential to attract tourism in the Himalayan region through its scarlet blooming in the flowering season which results in generating employment for local people and consequently boost up the needs of local people. Beside flourishing tourism, Rhododendron species has medicinal uses which increase its importance more. *R. arboreum* flower petals are used in making health juice (Badola, 1992) and to stop excessive bleeding in female when mixed with water (Pradhan and Badola, 2008). While *R. anthopogon* leaves are mixed with Juniper species to provide incense that is widely used in Buddhist monasteries.

The fruits are the favorites of birds, which also disperse the seeds. Furthermore, the plant provides the very good fuel which results in the degradation of this species in many areas. Ecosystem services are also an important area where Rhododendrons play a vital role. Rhododendrons grow in areas of high rainfall and high humidity on acidic soils; conditions under which few plants would survive. Therefore their role in slope stabilization and watershed protection should not be underestimated, particularly in the Himalayas where so many of Asia's major rivers start; nor should we overlook the role of Rhododendrons in providing the structure of plant communities which support a wealth of biodiversity. Thus, the Rhododendron plays a pronounced role as a keystone species, provides an ecological stability to the vegetation communities and associated niche of the region. Therefore, restoration of Rhododendron and their conservation in nature promotes an existence of other biodiversity components. Similarly on considering subalpine to alpine transition zone that includes timberline is the most fragile ecosystem in the Himalaya. Rhododendron is the only group of plants that has an existence in the aforesaid ecotone and beyond doubt maintains the biological sustenance in this fragile zone. Hence, after knowing the importance of these species which prove its dominant existence in higher altitude vegetation needs conservation as changes in climate particularly in temperature of earth definitely will affect the life cycle of this important species or may result in extinction.

#### CONCLUSION:

NATIVE PEOPLE OF INDIA IS UNAWARE ABOUT THE USES OF BURANS AND ITS MEDICINAL PROPERTIES, AS WE CAN MAKE USE OF EACH AND EVERY PART OF BURANSH TREE ITS LEAVES, FLOWERS, BARK, AND PETALS. BURANSH JUICE, IS A REFRESHING BEVERAGE WITH POTENTIAL HEALTH BENEFITS. IT'S RICH IN ANTIOXIDANTS, MAY BOOST THE IMMUNE SYSTEM AND AIDS IN HYDRATION. ALTHOUGH BURANSH GROWS IN HILLY AS WELL AS NORTHEASTERN REGION OF INDIA. BURANSH HAS ALSO PLAYED A VERY VITAL ROLE DURING THE PANDEMIC TIME OF COVID-19. PEOPLE SHOULD KNOW ABOUT THE MEDICINAL PROPERTIES OF THIS PLANT AND BY THE VALUE ADDITION CAN DELIVER IT TO THE DOORSTEP OF ALL OVER THE COUNTRY AS WELL AS A FOREIGN MARKET. WHILE TRADITIONAL USES SUGGEST DIGESTIVE BENEFITS, MORE RESEARCH IS NEEDED TO CONFIRM ITS EFFECTS.