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PRAKRIT

Quest for nature



Officers' Club, CASFOS, Dehradun



FLORA OF THE WEEK Bixa orellana

Sindoor tree

Sindoor is small sized evergreen tree grows under warm, humid and sunny location. It is best known as a source of annatto pigment also called bixin. Annatto and its extract is used as industrial food coloring and in cosmetics. Hence it is also known as **lipstick tree**. It is cultivated for dye which is further used for sindur or roli making. It's invasive but cultivated widely to obtain dye. Commonly known as Latkan, Sindoor, Sindur, Annatto.

Cultivation Seed -Mature seeds, taken directly from fresh fruits, germinate readily in 7 - 10 days under moist conditions. Seed is sown directly in the field, 2 - 5 seeds per hole in well-prepared soil, usually at the beginning of the rainy season. After germination only one seedling per hole is retained. They are transferred to 1 kg bags containing a soil mixture and kept in the nursery for 3 - 4 months before they are transplanted into the field. Cleaned, sun-dried seeds retain viability for over one year, but their germination rate falls to 12% in 3 years Cuttings in sand. Hardwood cuttings of 8mm or more in diameter is planted. Roots are produced in abundance in 7 - 9 weeks. Rooted cuttings are first transferred into pots or bags and kept in a nursery and can be transplanted to the field after 3 months.



Distribution:

It is native to South America and Central American tropics. It is found in substantial wild and cultivated acreage from Mexico to Ecuador, Brazil and Bolivia. Due to distribution of annatto dye through trading in 16th to 17th century, now it is cultivated in tropical regions of Asia.

Medicinal use: A decoction of leaf is used to treat Bleharitis.

Tea made from the root is used to treat oliguria and jaundice.

The pulp around the seed is used to make an astringent drink to treat cancer, dysentery and kidney infections. It is also used as antidote for prussic acid.

A decoction of bark is used as treatment for malaria, angina and asthma. The leaves contain **cvanidine** and Ellagic acid.

Seed is used as flavouring agent in various

Red dye known as annatto obtained from

Bixin obtained from seed coat act as insect

A fibre for cordage has been obtained from

Bark yields a water soluble gum.



IUCN Status: Least Concern

Kingdom:	Plantae
Class:	Rosids
Order:	Malvales
Family:	Bixaceae
Genus	Bixa
Species	orellana

Distribution map:



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Biology:

Tree can reach 6- 10 m in height.

Uses:

dishes

seed coat.

repellent.

the bark of the tree.

It bears cluster of pink white or its combination fragrant flower 4-6 cm in diameter.

Flower produces a two-valved fruit covered either with dense soft bristles or smooth surface of color varying from scarlet, yellow, brownish green, maroon and most commonly bright red. Ripe fruit contains fleshy seeds about 5 mm in diameter and covered with red orange pulp, the embryo of which is poisonous.

Bark brown colored sometimes fissured, lenticellate; inner bark pinkish towards the outside with orange sap, slightly bitter. Leaves are glossy, ovate with reddish vein. Young leaves are scaly.



FAUNA OF THE WEEK Rhinoceros unicornis

(Genda or Gainda)

The Indian rhino has a single horn, which is present in both sexes. It is the largest of all the Asian rhinos. Considered to be the most amphibious of all the rhino species, the Indian rhino is an excellent swimmer. It can run at speeds of up to 55km/hr for short periods of time. Though it has an excellent sense of hearing and smell, its eyesight is relatively poor. The average height is about 170cm, a girth of 335cm. While a fully grown male rhino weighs around 1800 to 2800 kg, a female weighs around 1,600kg. The animal is solitary as a rule, though several may occupy the same patch of forest or water hole.



ECOLOGICAL ASPECT:-Basically, Indian one-horned rhinoceros is a grazer or grass eater. It also browses on certain herb, shrub species, and small tree species and fruits fallen on the ground. Rhinos are associated with the water bodies by using it for feeding, wall owing and resting. It is an adherent of wallowing during the hotter part of the day to lower its body temperature and also to relief from ectoparasites. Rhinos feed on number hydrophytes like Trappa spp, Hygrorhyzia, Water lily, Nymph, Vallisnaria and its roots. It has been observed that after burning of grassland within a week rhino feed on half burned sward of grasses with dry pith and also lick the ash on the Ground.





Kingdom	Animalia
Phylum	<u>Chordata</u>
Class	Mammalia
Order	<u>Perissodactyla</u>
Family	Rhinocerotoidea
Genus	Rhinoceros
Species	unicornis

BEHAVIOURAL ASPECT:- The Great Indian One horned Rhino is solitary in nature with brief association of male to female during mating and get separated. Calf stays with its mother for at least four years. From time to time rhino meet with each other in the common ground like grazing areas. Tolerance between female to female is more as compared among males. Communication between rhinos is through audible and ultrasonic sound in varied frequencies. Rhino can identify each other by sniffing the pedal gland secretion left behind on the path ways. Since tiger and rhinos share the same habitat of flood plan. Tiger became the main predator and the young calves within 6 months to one year of age are more prone.



Vietnam is one of the world largest consumers of rhino horn, contributing to continue poaching of rhinos in the wild. **Reproduction:-**Breading takes place at all time of the year. The period of gestation is about 16 months and young at birth is length around 105 cm and weight up to 60 kg. Among rhinos sexual maturity starts at the age of 7 years in males and 5 years in females. If another potential male is nearby than severe fight between two took place and on number of occasion it become fatal and another male can lose its horn. On some occasion died because of internal injuries and infection.Mother always tries to keep away her calf from the male.

Habitat and distribution:-The preferred habitat of an Indian rhinoceros is alluvial flood plains and areas containing tall grasslands along the foothills of the Himalayas. Formerly, extensively distributed in the Gangetic plains, today the species is restricted to small habitats in Indo-Nepal terai and northern West Bengal and Assam. In India, rhinos are mainly found in Kaziranga NP, Pobitara WLS, Orang NP, Manas NP in Assam, Jaldapara NP and Garumara NP in West Bengal and Dudhwa TR in Uttar Pradesh.

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BIRD OF THE WEEK Zosteropus palpebrosus Indian white-eye

The Indian white-eye (Zosterops palpebrosus), formerly the Oriental white-eye, is a small passerine bird in the white-eye family. It is a resident breeder in open woodland in tropical Asia east from India to China and Indonesia. They forage in small groups, feeding on nectar and small insects. They are easily identified by the distinctive white eye-ring and overall yellowish upperparts.





Feeding Habits

The natural diet consists largely of fruit and insects. Fruit can form a large portion of its diet these are especially fond of pears and will accept oranges, grapes, papaya, banana, apples, mango and most other fruits as well. White eyes also relish small live crickets, mealworms and waxworms.

Physical Description:

White-eyes are a mere 4-6 inches long, and clad in olive to bright green feathers about the head and back. The breast is bright yellow, and lighter yellow flecks colour the rest of the plumage. The striking white eye-ring gives the species its common name and imparts a bright, alert "look".

Interesting Facts:

Much like human beings, Oriental White-eyes are social birds. One can see them congregating in flocks as small as 10 or much larger, everywhere even in the backyard. One can even see them in mixed flocks, with birds from other species. They thrive in a variety of habitats (scrubs, groves, gardens, orchards, forests), climate zones, and altitudes. In fact, they're known to be good colonizers, even adapting well to disturbed habitats (such as cities).



Scientific classification:

Kingdom	Animalia
Phylum	Chordata
Class	Aves
Order	Passeriformes
Family	Zosteropidae
Genus	Zosterops
Species	palpebrosus

Behavior and Ecology:

These white-eyes are sociable, forming flocks which only separate on the approach of the breeding season. They are highly arboreal and only rarely descend to the ground. The breeding season is February to September but April is the peak breeding season and the compact cup nest is a placed like a hammock on the fork of a branch. The nest is made of cobwebs, lichens and plant fiber. The nest is built in about 4 days and the two pale blue eggs are laid within a couple of days of each other. The eggs hatch in about 10 days. Both sexes take care of brooding the chicks which fledge in about 10 days. Though mainly insectivorous, the Indian white-eye will also eat nectar and fruits of various kinds.

Distribution and migration:

The species is found in a wide range of habitats from scrub to moist forest. This ranges from India to China and south through Indonesia. Although usually described as inhabiting lowland forests, white eyes are actually quite adaptable and may colonize open scrubland, farms, villages and parks. They sometimes occur on mangrove areas such as in the Karachi area and on islands they may lead a more insectivorous life. They are somewhat rare only in the drier desert regions of western India.



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