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ENVIS Newsletter
Forest Genetic Resources & Tree Improvement

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INSTITUTE OF FOREST GENETICS AND TREE BREEDING
 (Indian Council of Forestry Research and Education)



From the
Director's Desk

IFGTB ENVIS wishes all its readers a very happy New Year! The ENVIS RP on FGR and TIT would henceforth like to bring information on many of the lesser known and underutilized tree species of the country. The current newsletter discusses about *Albizia procera*, a multipurpose tree species and its various potential uses. The IFGTB ENVIS, to create an awareness on the need for conservation and sustainable utilization of forests, arranged for an ecotour to the riparian forests of Bhavani and sensitized the need for such ecofriendly activities to safeguard the forests and sustain the livelihood of fringe forest dwellers. With the successful completion of three GSDP courses during the year 2019-2020, IFGTB ENVIS is now poised to take up larger challenges to support the youth of the country through skill enhancement.

Dr S. Murugesan
 Director, IFGTB

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Know Your Trees - *Albizia procera* (Roxb.) Benth.

Introduction

Albizia procera (Roxb.) Benth. is a fairly large deciduous straight-stemmed fast growing leguminous tree. It is commonly called as White siris, Red siris, Safed siris, Tall albizia (English), Konda vaghe (Tamil) and Vella vaka (Malayam). This tree has the potential to become a weed in some environments because of its aggressive growth. Binggeli, (1996) classified it as a potentially / possibly invasive woody species.

Taxonomy classification

Kingdom : Plantae
 Class : Dicotyledonae
 Order : Fabales
 Family : Fabaceae
 Genus : *Albizia*
 Species : *procera*

Distribution and habitat

Albizia is a genus of more than 160 species of mostly fast - growing sub tropical and tropical trees and shrubs in the Mimosoideae of Fabaceae family. It is native to moist deciduous and semi evergreen hill forests and low- land savanna woodlands in Asia from northern India, through South and Southeast. In the areas of its natural distribution the absolute maximum shade temperature varies from about 36° to 46°C and normal annual rainfall from about 1000 to 5000 mm. It is naturally found in India, Bangladesh, Nepal, Pakistan, Thailand, Vietnam, Philippines, Indonesia, China, Burma, Laos,



Cambodia, Papua, New Guinea, Melanesia and Northern Australia. In India this species is found in the Sub-Himalayan tracts from Yamuna eastwards to West Bengal, Satpura range, Gujarat, South India and Andamans.

It grows well in drained alluvial soil, but can tolerate clayey, moderately alkaline and saline soils. It grows on dry, sandy stony and shallow soils makes it a useful species for reforestation of difficult sites. The tree is classified as a light demanding species; at pole stage it requires moderate shade. It is a very useful species for the rehabilitation of degraded fallow lands because of its rapid growth nitrogen fixing ability (association with *Rhizobium* spp.) and tolerance to moderately alkaline and saline soils (Alam *et al.*, 1996). Planting of this species improves the environment and enriches soil conditions through nitrogen fixation, water conservation and erosion control (Khan and Alam, 1996; Das and Alam, 2001).

Botanical description

The mature *A. procera* trees in some localities reaches 36 m height and 2-3 m in girth with a clear bole of 12 m but is usually 18 to 24 m in height. Mature individual trees are characterized by a tall, clear, erect, sometimes curved trunk and large branches which form a thin, spreading crown. In the drier regions such as Madhya Pradesh, the Satpura, Gujarat and parts of Tamilnadu the trees grow up to 1.2 to 1.5 m and the bark is about 1.2 cm thick, peeling off in thin flakes often with horizontal lines.

Leaves are bipinnate with 2-5 pairs of sub opposite pinnate; rachis is 10-30 cm, glabrous; leaflets 5-11 pairs per pinna, opposite rigidly chartaceous to sub-coriaceous, asymmetrically ovate to sub-rhombid, base asymmetrical; apex rounded or subtruncate often emarginated, mucronate; both surfaces sparsely appressed puberulous, rarely glabrous on top side. Inflorescence composed of pedunculate glomerules collected in an axillary, sparsely puberulous panicle up to 30 cm long; flowers are glomerule, sessile, uniform and bisexual. Fruits rich red or reddish brown in colour, flattened pods, chartaceous glabrous, with distinct marks over the seeds, mature pods each containing 6-12 seeds, usually remaining on the tree until the whole twig bearing the pod is shed; seeds small, greenish,-brown, elliptical to round, flat, with a hard, smooth seed coat (Sivakrishnan and Kavithaa, 2018).

Reproductive biology and breeding system

The mature leaf fall takes place in the month of January- February. In favourable localities the

tree is rarely leafless. Temperature is a more important climatic factor than rainfall and humidity. After the leaf fall the new leaves may appear in the month of April-May. Flowering season varies from location to location. In India the flowering season is reported during June to September, after new leaves are formed (Troup, 1921). In Indonesia it is reported during January– March (Djogo, 1992), September in Manila (Hensleigh and Holaway, 1998) and August to October in Puerito Rico (Parrota, 1987). Flowers are borne in racemes 8-25 cm long at the end of



Photo Courtesy : Plant Mohabbat

the twig. Numerous greenish-yellow flowers form whitish heads 20-24 mm in diameter. The pods are developed soon after the flowering and attains its full size by November-December.



Photo Courtesy : Phytolimages.siu.edu

Usually the pods ripen from January to May depending on the locality. Ripe pods are 10-25 cm long.

Fruit collection and processing

The mature seed are collected from ripped pods. The collected pods are dried in the sunlight till they open up. The seeds are extracted manually by hands or gentle trashing of pods (winnowing). The extracted seeds are dried thoroughly under the sun light. One kg of dry



pods yield about 250-375 gm of seeds and approximately 1 kg of pods contains 20,000 individual seeds.

Germination

Germination in *A. procera* is epigeous. The seeds may be sown in April – May without any treatment, Seed germination is facilitated if seeds are immersed in boiled water for 3 minutes and allowed to cool for 24 hours to soften the seed coat and sown immediately. Normally seeds retain their viability for at least one year. For increasing viability it may keep in gunny bags for 2 years. Fresh seed germinate readily without

any treatment in 3-21 days, provided there is sufficient soil moisture. 30 g seed is sown per square meter of nursery area. After sowing the seeds in beds they are covered with straw and daily watering with rose can. 50-90%



germination can be expected. The straw is removed after germination and watering is continued for keep the soil moist and for pricking out seedlings in beds or in polythene bags. The seedlings raised from April-May sowing attain a height of about 15 cm by July-August when these are planted out in pits in the field. In case the seedlings do not attain plantable size by July, these are retained in the nursery for one more year. In drier areas 15 month old seedlings are planted in the field. Regular weeding of nursery beds or polythene containers is very essential to keep the seedlings free from any weed competition.

Vegetative propagation

In *A. procera*, stumps are prepared for vegetative propagation as they give better results. Stumps can be prepared from either 3 months old or 15 months old seedlings. They should be planted at the break of monsoon rains.

For good results the stumps made from one year old seedlings are planted in polythene bags filled with a mixture of soil, sand and FYM in equal proportions. These are regularly watered. Since the seedlings develop strong tap root, the polythene containers are shifted periodically to avoid the root from striking and penetrating in to the ground. With the onset of rains these develop into healthy plants which give almost 100% success in the field.



the pods. Once the grub turns in to pupa and adult it emerges out of the pods. The developed beetles again start laying eggs on fresh pods and stored seeds. This can be controlled by spraying 0.05% monocrotophos on the tree in the first half of September. Mixing of Folidal (2%) dust with seeds in the ratio of 1:100 is recommended for protecting seeds from damage. *Eurema blanda*,



closely lay eggs on the lower surface of the *A. procera* leaves. The larvae on hatching out from eggs feed gregariously on the leaves. Lepidopterous insects like *Eurema hecaba*, *Cusiala raptaria*, *Hyposidra successaria*,



Insect-pests and disease management

In nursery the seeds are bored by five species of insects. Of these 80% damage is caused by *Bruchus bilineatopygus* (Watt and Brandwijk, 1962). It is 4.45 m long light brown beetle; it lays light yellowish oval shape eggs. Initially the eggs are laid on young pods and hatch small grubs later. It enters in to fresh pods which results in the oozing of gummy fluid on the outer surface of



Semiothisa emersaria and *Ascotis selenaria* also feed on the foliage and other soft tissues of *A. procera* seedlings. For controlling all these pests, collection and destruction of conspicuous clusters of pupae, and spray of 0.05% water emulsion of Malathion, Endosulfan or Sevin is recommended. *Oxyrhachis mangiferana* (Hemiptera) another insect lays eggs in V-shaped slits in thin bark of shoots. The eggs hatch leaving, a broad oval scar, which distorts the growth of the shoot or kills it. This pest can be controlled by application of 0.04% Monocrotophos. Seedling wilt is caused by *Fusarium oxysporum*. The lower leaves initially turn yellow and then fall off. The yellowing proceeds towards the growing shoot and within a month the seedling dies. The roots of affected seedlings get discoloured. Application of 0.3% Dithane M-45 or 0.2% Bavistin may control this. Treating the seed beds with 0.2% Bavistin before sowing prevents the occurrence and damage. Leaf spot disease is caused by *Collectotrichum*

develops in the advanced stages of infection causing premature defoliation. The disease can be controlled by spraying 0.2% Captaf fungicide. Little leaf disease caused by Mycoplasma is often observed in seedlings after the germination of seeds. The cotyledons and first pair of leaves turn yellow after the little leaf disease infestation. Later on the foliage becomes bunchy with much reduced sized of leaves. *Ravenelia clemensiae* attacks leaflets of the seedlings. Profuse development of postules takes place on the leaf surface adversely affecting the metabolic activity of plants resulting even in death. The disease is controlled by application of 0.2% dia thane M 45 or Sulfex.

In plantations the larvae of *Xystrocera globosa* bore into the inner bark and sapwood. This infestation may kill less resistant trees. Spraying a mixture of Paradichlorobenzene 1 part and kerosene 10 parts kills the larvae and callus quickly covers the wound. The larvae of *Indarbela quadrinotata* bores in the wood of standing green trees. They are minor pests. Removing the silken mat and then brushing the eaten bark with any insecticidal emulsion, kills this borer.



Photo Courtesy : enaacademic.com

dematium. It attacks the foliage of *A. procera*. This disease manifests on older leaves of seedlings; a spot is formed on the leaves which later develops into a circular light brown lesion with a distinct yellowish margin. The spot hole



Photo Courtesy : pinterest.com

Mature old trees of *A. procera* are subject to attack by a highly virulent bark and stem disease which produces a grayish black canker on the stem. It is called pit canker disease caused by the fungus *Fusarium solani*. It can be controlled by application of 0.3% Fytolon solution.

Agroforestry practices

The growth performance of *A. procera* tree was better in Blackgram (*Phaseolus mungo* Roxb.)/Mustard (*Brassica juncea* Coss.) (Ram Newaj *et al.*, 2005). In the Teraj and Bhabar tracts of Uttar Pradesh, *A. procera* has been raised by sowing in mixture with other species like *Senegalia catechu* (khair), *Dalbergia sissoo* (sissoo), *Bombax ceiba* (semal), etc., in continuous ridges 4 m apart. In areas subject to strong winds, it is mixed with other wind-firm species in plantations. *A. procera* under silvipastoral system in association with *Cenchrus* and *Stylosanthes* pasture, in Jhansi, U.P. gave a mean height of 10.75 m and 30.60 cm diameter at breast height in 8-9 years. The average dry matter production of tree parts (kg/tree) was main bole 87.54, branches 62.72, total wood 150.26, leaves 18.39, pods 2.45 and total biomass 174.07 in the above mentioned silvipastoral system. Annual wood production of about 10 m³/ha has been recorded in Java.

Tree improvement

The species finds favor in plantation programs, especially in poor, marginal, dry, and degraded lands due to its varied adaptability. Its resistance against drought has made this species popular in dry zones. *A. procera* has been

extensively used in experimental planting in saline and alkaline areas. Besides its good soil-binding capacity due to fast growth, it has excellent power to fix nitrogen and thereby enrich soil status. It is often grown in gardens and avenues for ornamental purposes. The mean annual girth increment has been recorded from different regions varying from 2.5 to 12.4 cm. In Tripura, plantations of average height of 10.66 m and average diameter of 17.8 cm in 10 years have been reported. In Allen forest, Kanpur, in a group of three trees growing close together, at the age of 14 years the largest was 21.3 m high and 173 cm in girth at breast height. In Rajasthan in strip planting along roads, this species is used to the extent of 10%. Three rows are planted on either side, the distance between the rows and the plants being 5 m and 10 m respectively.

In the afforestation of depleted fuel forests of Tamil Nadu, clear felling and burning are done preliminary to planting operations. This species is one of many raised in such areas. Container plants give better results than either direct sowing or entire transplanting with naked root. This valuable species of *A. procera* is underutilized and lesser known among the farmers or commercial tree growers. It can be popularized to raise in plantation to utilize its benefits.

Uses

A. procera is widely planted for its good soil-binding capacity (Jha, 1994). In Bangladesh, it is regarded as a soil improver and cultivated as shade as a shade tree in tea, coffee and cocoa plantations (Mohiuddin, 1997). Its ability to grow



Photo Courtesy : dbiodbs.units.it

on dry, sandy, stony and shallow soils makes it a useful species for afforestation of difficult sites. It is a valuable timber and is used in general construction like house posts, beams, scantlings, planks, boards, carriage and carts, motor-lorry and bus bodies, agricultural implements, tool handles, packing cases and crates, etc. It is a high grade furniture timber, though not so decorative. It is used for a variety of other purposes such as well construction, canoes and dug-outs, oars, cane-crushers, oil presses and rice pounders.

In India, the leaves of *A. procera* are considered good fodder for domestic and wild



Photo Courtesy : dbiodbs.units.it

animals (cattle, sheep, goats, elephants and deer) and the tree is lopped for fodder in several states. In Australia, it appears that early settlers regarded *Albizia procera* as a good fodder tree (Lowry and Seebeck, 1997).

It is commonly used in traditional medicines (Venkataramany, 1968). The leaves are used to treat ulcers and have insecticidal properties (Parotta, 1987). The leaves are valued as insecticide. All parts of the plant are reported to show anti-cancer activity. The roots contain alphaspinasterol and a saponin. The saponin has been reported to possess spermicidal activity at a dilution of 0.008%. The tree gives a copious gum. The bark is used for tanning as it contains about 12-17% tannin. A decoction of the bark is given in rheumatism and haemorrhage. It is used as a fish poison. The seeds of *A. procera* contain proceranin A, which is toxic to mice and rats when administered parenterally and orally.

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ENVIS ACTIVITIES

Observance of World Wetlands Day

The ENVIS Resource Partner on Forest Genetic Resources and Tree Improvement at IFGTB observed the World Wetlands Day, 2020 on 3rd February. Dr S Murugesan, Director, IFGTB inaugurated the function and spoke on the role of wetlands which are important carbon sinks, in mitigating climate change. Dr Kannan CS Warriar, Scientist F and ENVIS Coordinator detailed on the significance of 37 Ramsar Sites in India and how they serve as abode of many threatened species of flora and fauna including 213 species of fish and 74 amphibians. Sundarbans, the world's largest halophytic block harbours two globally threatened species of mangroves. Though wetlands are rich with biodiversity, they are disappearing three times faster than forests, he added.

An inter house Quiz programme on environment and wetlands in particular was organized for IFGTB staff members. Dr S. Vigneswaran, Programme Officer, ENVIS conducted the quiz and created awareness among the participants and audience on various issues related to environment. Prizes were awarded to the winners by the Director and certificate of participation was awarded to all. An



- India has about 757.06 thousand wetlands with a total wetland area of 15.3 m ha, nearly 4.7% of the total geographical area of the country (89% inland wetlands, 27% coastal wetlands, and 4% other wetlands).
- Indian wetlands harbour a number of globally threatened species requiring urgent conservation action. The 646 threatened faunal species include 213 fishes and 74 amphibians.
- 21 of the 28 species of freshwater turtles found in the country's wetlands are assessed as being globally threatened.
- 49 Indian wetlands water bird species are classed in threatened category (4 as critically endangered, 7 endangered, 15 vulnerable and 22 near threatened); Chilika lake in Odisha is one of the only two lagoons in the world inhabited by Irrawaddy Dolphin (*Orcaella brevirostris*). It also maintains a healthy population of the species.
- Keibul Lamjao, a floating National Park on the south of Loktak lake in Manipur is the only known among the 5 natural habitats of globally endangered swamp deer commonly known as Brow-antlered deer (*Rucervus eland*).
- The largest population of critically endangered Gharial (*Gavialis gangeticus*) is found in riverine wetlands of rivers Son, Girwa and Chambal of Central India.
- The spectacular wetlands of Ladakh in Jammu & Kashmir are the only known breeding grounds of globally vulnerable Black-necked Crane (*Grus nigricollis*).
- Sundarbans, the world's largest block of halophytic mangroves harbours two globally threatened mangrove species, *Sonneratia griffithii* and *Heritiera fomes*.
- The conifer diversity in the country, constituted by 478 species of 89 genera, forms 60% of the global hemitypic genera.

WHY TO CONSERVE WETLANDS?

- The high altitude Himalayan wetlands capture the glacial melt and form the source of the eight largest rivers of Asia.
- The floodplains of Ganga and Brahmaputra account for over 40% of the total cultivated area in the country.
- Wetlands in East Kolkata are an important component of the wastewater treatment infrastructure of the city. These wetlands help to treat nearly 600 million litres of sewage daily.
- Wetlands are globally important carbon sinks, storing vast amounts of carbon and thereby helping to mitigate climate change.
- Wetlands act as a sink for contaminants in many agricultural and urban landscapes.

awareness poster highlighting the current year's theme identified by the UN "Wetlands and Biodiversity" was released during this occasion. Copies of the poster and handouts were distributed to the school children in and around Coimbatore. An awareness short film on the significance of conservation of wetlands released by the Ministry of Environment Forest and Climate Change was also screened.



Observance of International Day of Forests, 2020 by ENVIS, IFGTB Digitally through Facebook Live

ENVIS Resource Partner on Forest Genetic Resources and Tree Improvement at the Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore marked the International Day of Forests 2020 digitally by hosting the event on Facebook live on the theme "Forests and Biodiversity", prescribed by the United Nations. The rationale was to avoid a public gathering in the wake of the novel coronavirus outbreak in the country.

The programme began with an invocation on Nature in Sanskrit composed by Dr Kannan CS Warriar, Scientist F and Coordinator ENVIS in diverse ragas in Carnatic music as an analogy to



biodiversity. During his welcome speech, Dr Kannan CS Warriar highlighted the importance of observing International Day of Forests as an important platform for dissemination of information on how forests can be conserved and utilized sustainably. Assessment of biodiversity in forests is important since it provides an indicator to represent the state of conservation of forest ecosystems and it can help to evaluate and monitor the sustainability of the biological resources, he added. Speaking on the richness of biodiversity in the forests of various states, he explained that states of Karnataka, Tamil Nadu, Andhra Pradesh, Kerala, Odisha, Arunachal Pradesh and Jammu & Kashmir are among the leading states of India in terms of tree / plant diversity. Dr S Murugesan, Director, IFGTB in his special address explained the importance of forests and their role in balancing the ecosystem. He described that forests are the key source of many products and services, both tangible and intangible. He also explained about

the underlying physical and biological forces that shape and change the forest ecosystem. Phytochemical diversity is a key component of functional diversity in forests, he added. An awareness poster highlighting the theme "Forests and Biodiversity" was released during the occasion. Softcopies of the poster and handouts were transmitted electronically to all the employees of IFGTB and various other organizations. Hard copies will be distributed to school children and college students after reopening. Dr S. Vigneswaran, Programme Officer ENVIS proposed the vote of thanks. The event can be accessed at <https://www.facebook.com/ifgtbenvisrp/videos/2466329100362513/>.

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INTERNATIONAL DAY OF FORESTS - 2020
FORESTS AND BIODIVERSITY
TOO PRECIOUS TO LOSE

30 March
International Day of Forests

Why We Need Forests?
Forests are the most diverse ecosystems on land, because they hold the vast majority of the world's terrestrial species. They provide natural habitat for wildlife and the ecological conditions for maintenance and natural evolution of genetic diversity of flora and fauna. In India it is endowed with diverse types ranging from tropical wet evergreen forests in the northeast and the southwest, to tropical dry forest forests in central and western India. The forests of India can be divided into 18 major types comprising 721 sub-types.

GREEN COVER IN INDIA
Total forest cover 69.75 million hectare (24.56% of the geographical area)

TOP FIVE STATES IN TERMS OF INCREASE IN FOREST COVER	LARGEST FOREST COVER IN THE COUNTRY	TOP THREE STATES IN TERMS OF INCREASE IN MANCROVE COVER
Karnataka (7,325 sq km)	Madhya Pradesh (77,467 sq km)	Gujarat (37 sq km)
Andhra Pradesh (698 sq km)	Arunachal Pradesh (66,988 sq km)	Mizoram (16 sq km)
Kerala (623 sq km)	Chhattisgarh (56,611 sq km)	Odisha (3 sq km)
Jammu & Kashmir (371 sq km)	Odisha (51,819 sq km)	
Madhya Pradesh (334 sq km)	Nagaland (46,718 sq km)	

Biodiversity
India, known for its rich heritage of biological diversity. The varied climatic, climatic and topographic conditions and years of geological stability have resulted in a wide range of ecosystems and habitats such as forests, grasslands, wetlands, deserts, and coastal and marine ecosystems. The country is one amongst the 12 mega-diversity countries of the world and has a rich biological species and genetic stocks of flora and fauna.

Causes of Biodiversity loss
The depletion of biodiversity is an alarming problem all over the world. The rate of extinction has been enhanced by human intervention-related habitat loss and climate change, industrial revolution and the increase in human population from 200 million in 1954 to 7 billion in 2014 and in domestic animals from 200 million to 500 million in the same period, the gap between demand for and supply of fuelwood, timber, fodder and non-wood forest products has rapidly increased, resulting into over-harvesting and degradation. 73% of the forest land is subjected to heavy, unregulated grazing, nearly 10 million ha area is subject to shifting cultivation, 30% of the vegetation cover in Indo-Burma, 77% in Western Ghats- Sri Lanka and 75% in Himalaya has been lost nearly because of habitat encroachment.

Directions for Conserving Forest Biodiversity

- Protect habitat
- Reduce fragmentation
- Control introduced animals or plants
- Follow sustainable harvesting practices
- Reduce pollution

Protecting the forest is everyone's responsibility
"Forests are the lungs of our land, purifying the air and giving fresh strength to our people."

Green Skill Development Programme (GSDP)

A Green Skill Development Programme (GSDP) on “Quality Planting Material Producer” at level 4 was conducted for a period of 30 working days (240 hours) from 03rd February to 13th March 2020 by the ENVIS Resource Partner on Forest Genetic Resources and Tree Improvement at the Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore. The training module included theory, field visits, field exercises and assignments. Dr S. Murugesan, Director, IFGTB



inaugurated the training programme. Dr Kannan C.S. Warriar, Scientist F, Coordinator ENVIS, Nodal Officer GSDP and Training in charge presented an overview about IFGTB and various institutes under the Indian Council of Forestry Research & Education (ICFRE). Both theory and practical sessions most suited for the theme have been included in the modules of the GSDP course. In addition, hands-on training and field trips were also arranged to commercial clonal nurseries, bio-fertilizer production units, pioneer industries such as Tamil Nadu Newsprint and Papers Limited and various research and educational institutions to provide a real time exposure. Lectures on entrepreneurship development and banking linkages were also imparted to motivate the participants to become entrepreneurs and for seeking self employment. The trainees were participated in the session on “Clonal Farm Forestry for Increased Productivity” at Tree Growers Mela 2020 organized by IFGTB in collaboration with the Tamil Nadu Forest Department, Tamil Nadu Newsprint and Papers Limited (TNPL), Krishi Vigyan Kendras (KVKs) and NGOs. The Valedictory Function of the certificate course was held on 13.03.2020. Dr S. Vigneswaran, Programme Officer, ENVIS welcomed the gathering. A video covering the highlights of the training from day one was screened by ENVIS staff. Dr Kannan C.S. Warriar, Scientist F, Coordinator ENVIS, Nodal officer GSDP and Training in charge coordinated the month-long training programme and provided an insight on the various Green Skill Development Programmes of MoEF&CC enabling a large number of Indian youth to take up skill training that will help them in securing a better livelihood. Dr S. Murugesan, Director, IFGTB awarded the certificates to 19 trainees on successful completion of the GSDP on QPMP.



Eco Tour to Western Ghats Region

An eco tour to Baralikadu, a tribal village, situated on the banks of Athikadavu river, on the foothills of the Western Ghats was organized by ENVIS Resource Partner on Forest Genetic Resources and Tree Improvement at the Institute of Forest Genetics and Tree Breeding, Coimbatore for the **Ministerial staff of IFGTB** on 25.01.2020. The field visit focused primarily on creating awareness on conservation of nature and natural resources including flora, fauna and water. Tribal traditions in management and conservation of forest genetic resources and water resources were also experienced by the participants, **who have never been exposed to interior forest areas**. This is a first of its kind programme arranged by IFGTB for an inclusive involvement of all its family members in forest conservation initiatives. The group was sensitised on the role of mountain ecosystems in sustainable livelihood support by way of providing food, fodder, fibre, fuel and fertilizer to the forest dwelling communities.



IFGTB PRODUCTS



INSTITUTE OF FOREST GENETICS AND TREE BREEDING

(Indian Council of Forestry Research and Education)

(An autonomous body of Ministry of Environment, Forest & Climate Change, Govt. of India)

P.B. No. 1061, R.S. Puram, Coimbatore - 641 002, Tamil Nadu, India



The following Services are provided at IFGTB for various stakeholders. Please contact us for details as below.

Services		Cost per unit		Contact Number with Email ID
Clonal Seedling: For Sale & Booking				
1.	Clones of Casuarina Hybrids (CH-1, CH-2 & CH-5)	Rs. 4.50 per plant		Smt. K. Shanthi, ACGO, Division of Plant Biotechnology, Phone : 0422 2484122 E-mail : shanthik@icfre.org
	Eucalyptus clones (EC-4, EC-6, EC-9 & EC-11)	Rs. 4.00 per plant		
	Tissue Culture Teak Plants	Rs. 25.00 per plant		
2.	Windbreak Clones (WBC-1, WBC-2, WBC-3 & WBC-4)	Rs. 4 per plant		Dr. C. Buvaneshwaran, Scientist - F, Silviculture & Forest Management Division, Phone : 0422 2484198, 94422 45047 E-mail : buvanesh@icfre.org
3.	ArborEasy® DNA Isolation Kit	Price	Packaging & Transportation	Dr. Modhumita Dasgupta, Scientist-F, Division of Plant Biotechnology, Phone : 0422 2484123 E-mail : gmodhumita@icfre.org gmodhumita@gmail.com
	Pack Size	Rs.	Rs.	
	10 Reactions	950.00	150.00	
	20 Reactions	1900.00	300.00	
	50 Reactions	4750.00	300.00	
4.	Soil Testing (pH, EC, OC, Micro and Macro Nutrients)	Rs. 2850.00		Dr. A.C. Surya Prabha, Scientist - C, Silviculture & Forest Management Division, Phone : 0422 2484150 E-mail : acsuryaprabha@icfre.org
5.	Phytosanitary Certificate	Rs.100.00 + Tax per application		Dr. John Prasanth Jacob, Scientist - G, Forest Protection Division, Phone : 0422 2484159 E-mail : jacob@icfre.org
Products of IFGTB: For Sale & Booking				
6.	Ny-ACT (Natural and Seed Oil Based Biopesticide)	Rs. 80.00 per bottle		Dr. N. Senthilkumar, Scientist - F & Head, Division of Chemistry & Bioprospecting, Phone : 0422 2484193 Mobile : 9629160703 E-mail : senthilk@icfre.org
	Tree-BALH (Natural and Seed Oil based Biopesticide)	Rs. 80.00 per bottle		
	Crawl-Clean (Plant based Green Insecticide)	Rs. 25.00 per packet		
	Tree-Rich Biofertilizer (Instant Organic potting mixture for home garden, terrace and kitchen garden)	Rs. 50.00 per packet		
	Tree-Rich Jam (with natural fruit colorant)	Rs. 60.00 per bottle		
				(or) Smt. R. Sumathi, ACGO Division of Chemistry & Bioprospecting, Phone : 0422 2484144 Mobile : 9942245542 E-mail : sumathir@icfre.org

ABOUT IFGTB

Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore is a National Research Institute under the Indian Council of Forestry Research and Education. IFGTB envisions a wood secure society. The Institute primarily aims to carry out research to improve productivity of forest tree species through conventional breeding programmes and biotechnological interventions. The major areas of research include tree improvement, breeding, planting stock improvement, marker assisted selection, genomics, clonal propagation, agroforestry systems, climate change research, integrated disease and pest management, seed handling and testing, eco restoration and conservation.

ABOUT ENVIS

ENVIS established by the Government of India, in 1982 has been on providing environmental information to decision makers, policy planners, scientists and engineers, research workers, etc. all over the country. It is a comprehensive decentralized information system on environment involving effective participation of institutions / organisations in the country actively engaged in work relating to different subject areas of environment. A large number of nodes, known as ENVIS Centres, have been established in the network to cover the broad subject areas of environment with a Focal Point in the Ministry of Environment, Forest and Climate Change.

INSTRUCTIONS TO CONTRIBUTORS

Dear Author/Subscriber/Contributor,

We invite contributions to the ENVIS Newsletter issues! The ENVIS Resource Partner at IFGTB focuses on Forest Genetic Resources and Tree Improvement. It aims to act as a window for quality scientific publications and a forum for presenting your thinking on the challenges in the fields of FGRs and tree improvement. The ENVIS Newsletter, Van Vigyan, a quarterly publication, publishes original research articles, reviews, reports, research highlights, news-scan etc., related to the thematic area of the ENVIS Resource Partner. Original research and review articles, notes, research and meeting reports are invited for the newsletter. Details of forthcoming conferences / seminars / symposia / trainings / workshops also will be considered for publication in the newsletter. Articles may be sent in Times New Roman (with font size 12) in double spacing with a maximum of 5-6 typed pages. Photographs/line drawings and graphs need to be of good quality with clarity for reproduction in the newsletter. Only electronic submission will be accepted.

Details may be sent to: ifgtb@envis.nic.in.

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