

প্রকৃতি

Treasures of Nature

জৈবী লতা

জৈবী লতা (Vitis rotundifolia) হল একটি উষ্ণপ্রদেশীয় ফলপুষ্পী লতা। এটি মূলত উত্তর আমেরিকাতে পাওয়া যায়। এর ফলগুলি হল গুঁড়ি।

Rare Endangered Threatened (RET) Species

An endangered species is a native species that found a significant risk of extinction in the near future throughout all of a significant portion of its range. Approx. 10% of all plants species in the world are at risk of being endangered or going extinct. Though there are thousands of interesting & unusual plants, here are some common plants which face serious rare & endangered species in the past 20 years due to habitat destruction.

Some of the RET species found in Assam are:

- Vanilla planifolia** Rafin
- Albizia sambarensis** Ben
- Family: Ericaceae**
- Vernacular name: Kharpa-laha**
- Ecological importance:** It is used as an ornamental plant.
- Classroom exercise:**
- Vernacular name: Kharpa-laha**
- Ecological importance:** The wood of this plant is highly valued for construction purposes.

Wild Himalayan cherry

Wild Himalayan cherry (Prunella cerasifera) is a species of cherry native to the Himalayas. It is a small tree or large shrub with white flowers and red fruit.

Alstonia digitata

Alstonia digitata is a species of tree native to the Indian subcontinent. It is a large tree with a thick trunk and large, heart-shaped leaves.

MAGIC OF ORCHIDS

Orchids are beautiful flowering plants and a group of plants known for their diverse and intricate patterns of flowers. They are one of the most diverse groups of flowering plants in the world, with over 25,000 species.

Poyfai
Madhavi's

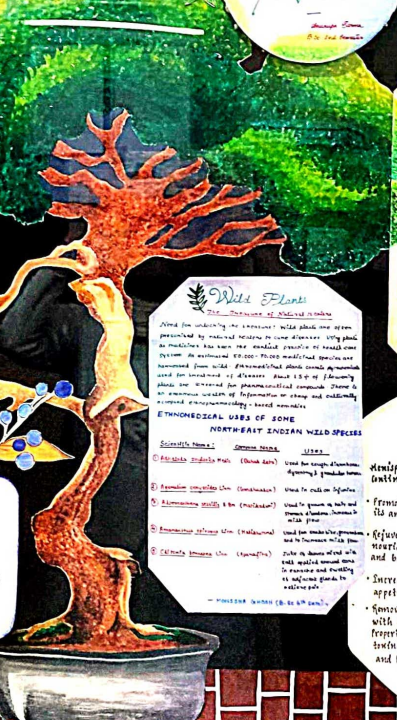


Plastic Degradation Fungi

Plastic degradation fungi are a group of fungi that have the ability to break down plastic. This is a significant discovery as it offers a potential solution to the growing problem of plastic waste.

HIMALAYAN BITTER GOURD

Himalayan bitter melon (Mormona charantia) is a species of bitter melon native to the Himalayas. It is a small, round fruit with a bumpy, green skin.



Wild Plant

Wild plants are those that grow naturally in the wild, without human intervention. They are an important part of the natural world and provide many benefits to humans.

Wild Plant

Wild plants are those that grow naturally in the wild, without human intervention. They are an important part of the natural world and provide many benefits to humans.

THE DRAGON TREE

The dragon tree (Dracaena draco) is a species of tree native to the Canary Islands. It is a large tree with a thick trunk and red, dragon-like branches.

EDITORIAL BOARD

Chairman: Dr. [Name]
Members: [List of names]

FROM THE EDITOR

Dear readers, We are pleased to announce the launch of this journal. It is our hope that it will provide you with interesting and useful information.

Inaugural's Colours

By [Name]

Giloy (Tinospora cordifolia)

Giloy is a herbaceous vine of the family Menispermaceae indigenous to tropical regions of the Indian subcontinent. The stem of Giloy is considered highly effective.

- Promotes digestion with its antispasmodic and antidiarrhoeal properties.
- Contains thermotropic ferrous salt and anti-diabetic, anti-sporadic, anti-asthmatic and anti-allergic properties.
- Boosts immunity and metabolism.
- Improves the body's defence mechanism against infectious agents.



DEPARTMENT OF BOTANY

Treasures of Nature

Rare Endangered Threatened (RET) Species

An endangered species is a native species that faces a significant risk of extinction in the near future throughout all or a significant portion of its range. Approximately 1% of all plant species in the world are at risk of being endangered or going extinct. Though there are thousands of interesting & unusual plants, here are some common ones which have become rare & endangered species in the past 50 years due to habitat destruction.

- Some of the RET species found in Assam are:
- Salimus nambarensis** Benth.
 - Family: Arecaceae
 - Vernacular name: HOOKA-bet
 - Economic importance: A high quality of cane used in furniture industry.
 - Alseodaphne serrata** L.
 - Vernacular name: SUDYAKHON
 - Economic importance: The wood of the tree is highly valued for construction purposes.
- ~ Nisha Saikia, B.Sc 3rd Sem

Wild Himalayan cherry

Prunella cerasoides (L.) Link. & DC.
 This species is native to the Himalayas. It is a small tree or shrub with white flowers and red fruit. It is commonly found in the Himalayan region.

Albroma augusta

Albroma augusta is a species of the genus *Albroma*. It has dark red flowers with a strong fragrance and is commonly found in the Himalayas. It is a small tree or shrub with white flowers and red fruit.

MAGIC OF ORCHIDS

Orchids are beautiful flowering plants and are found in various regions. They are a diverse and widespread variety of flowering plants that possess the most advanced floral structure and the most diverse floral parts. There are more than 24,000 species. The genus of orchids is the largest in the plant kingdom. Orchids are native to the tropics and subtropics. They are found in all parts of the world. Orchids are used in traditional medicine for various ailments. They are also used in perfumery and as ornamental plants.

HIMALAYAN BITTER GOURD

Cucurbitaria pedunculata of the family Cucurbitaceae, is a large perennial climber. It is a bitter melon. It is native to the Himalayas. It is commonly found in the Himalayan region. It is a small tree or shrub with white flowers and red fruit.

Wild Plants

The discovery of natural products from wild plants has been a major source of new drugs. Many natural products have been discovered from wild plants. These products have been used in traditional medicine for various ailments. They are also used in modern medicine for various ailments.

ETHNOMEDICAL USES OF SOME NORTH EAST INDIAN WILD SPECIES

| Scientific Name | Common Name | Uses |
|----------------------------------|-------------|----------------------------|
| <i>Albizia lebbekii</i> (L.) DC. | (Shikha) | Used for various ailments. |
| <i>Albizia lebbekii</i> (L.) DC. | (Shikha) | Used for various ailments. |
| <i>Albizia lebbekii</i> (L.) DC. | (Shikha) | Used for various ailments. |
| <i>Albizia lebbekii</i> (L.) DC. | (Shikha) | Used for various ailments. |
| <i>Albizia lebbekii</i> (L.) DC. | (Shikha) | Used for various ailments. |

Giloy (Tinospora)

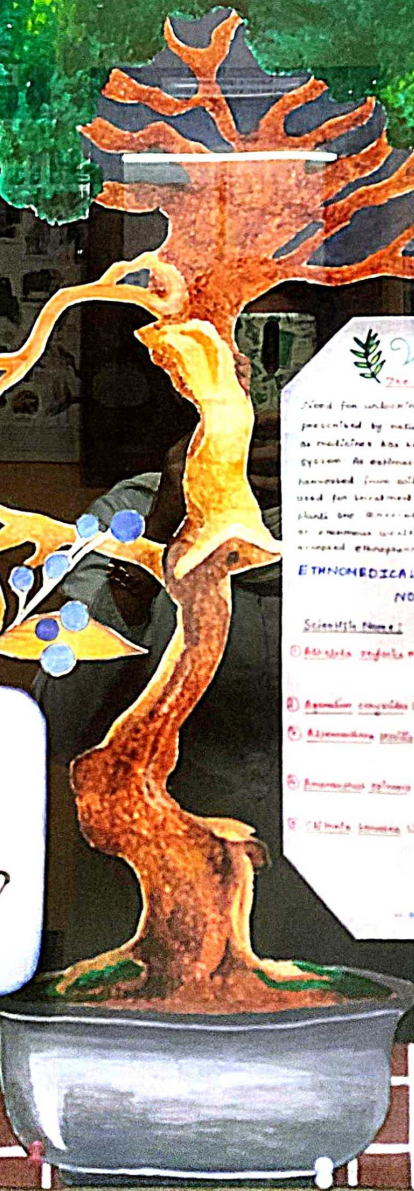
Giloy is a herbaceous plant. It is native to the Indian subcontinent. The stem of Giloy is considered to be a natural tonic. It is used in traditional medicine for various ailments. It is also used in modern medicine for various ailments.

FROM THE EDITOR

We represent you 'Treasures of Nature'. We are grateful to all the teachers and students for their valuable suggestions and also to the students for their helping hand.

Inaugurator's Corner

~ Nisha Saikia, B.Sc 3rd Sem



A TREASURY OF TREASURES

EDITORIAL BOARD

- **Teacher Advisors** : Dr. Manoj Basihakur (HOD, Department of Botany)
Dr. Nijara Goswami
Dr. Utpal Chowdhury
Dr. Hemen Chandra Majumdar
Dr. Jyoti Moni Shyam
- **Teacher In Charge** : Dr. Prajli Das
- **Editor** : Nisha Salkia
- **Members** : Niharika, Ipsita, Shreuti, Madhusmita, Smriti, Pahipriya
- **Art and designing** : Jaiba, Shreuti, Madhusmita, Smriti, Ajanika, Saswati, Rambha, Himani, Pahipriya
- **Writing** : Niharika, Ipsita, Shreuti, Smriti, Madhusmita
- **Other members** : Shilpika, Nayanika, Bikash, Pratiksha, Biswajit, Siddharth.

FROM THE EDITOR

Dear readers,

We represent you 'Treasures of Nature', Botany Department, B. Barooah College official Wall Magazine. It captures some of the underrated useful species of plant kingdom. We in general are unaware of these useful species that surrounds us. Therefore, we have tried to showcase the importance of these underrated plant species.

The aim of this annual issue of 'Prakriti' is to focus on the importance of these underrated species and their various roles in the field of ethnomedicine, ornamental, etc... Our 'Treasures of Nature' contains the various contribution of articles from students of our department.

We are hereby grateful to all the teachers of the department for their valuable suggestions and also thankful to the students for their helping hand.

~ Nisha Salkia, B.Sc. 6th Semester

Inaugurator's Corner

Sumit Anand
23/5/2022



EDITORIAL BOARD

- **Teacher Advisors** : Dr. Manoj Barthakur
(HOD, Department of Botany)
Dr. Nijara Goswami
Dr. Utpal Chowdhury
Dr. Hemen Chandra Majumdar
Dr. Jusi Moni Shyam
- **Teacher In Charge** : Dr. Prapti Das
- **Editor** : Niha Saikia
- **Members** : Niharika, Ipsita, Shreuti,
Madhusmita, Smriti, Pahipriya
- **Art and designing** : Jaiba, Shreuti, Madhusmita,
Smriti, Ajanta, Saswati, Rambha,
Himani, Pahipriya
- **Writing** : Niharika, Ipsita, Shreuti, Smriti,
Madhusmita
- **Other members** : Shilpika, Nayantika, Bikash,
Pratiksha, Biswajit, Siddhasth.

FROM THE EDITOR

Dear readers,

We represent you 'Treasures of Nature', Botany Department, B. Barooah College official Wall Magazine. It captures some of the underrated useful species of plant kingdom. We in general are unaware of these useful species that surrounds us. Therefore, we have tried to showcase the importance of these underrated plant species.

The aim of this annual issue of 'Prakriti' is to focus on the importance of these underrated species and their various roles in the field of ethnomedicine, ornamentation, etc.. Our 'Treasures of Nature' contains the various contribution of articles from students of our department.

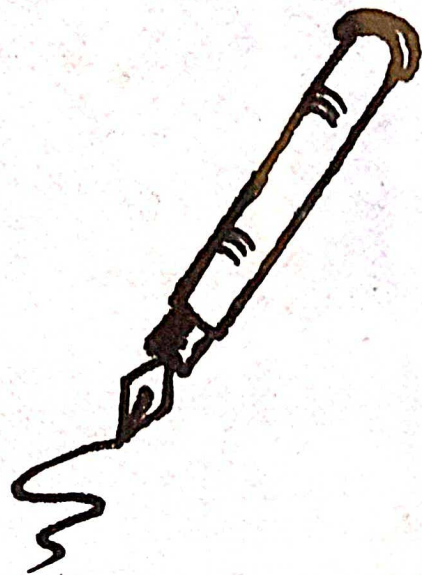
We are hereby grateful to all the teachers of the department for their valuable suggestions and also thankful to the students for their helping hand.



~ Niha Saikia, B.Sc. 6th Semester

Inaugurator's Corner

5/22/12 - Ann
23/5/12/12



জোয়ানী লতা

Mikania micrantha, Asteraceae পৰিয়ালৰ গছ। আদিতে মধ্য আৰু
দক্ষিণ আমেৰিকাৰ গছ আছিল। দ্বিতীয় মহাযুদ্ধৰ পাছত প্ৰায় সৰ্বস্ব বিসুৰীয়
অঞ্চলত ছিপি পৰে। ইংৰাজী নামবোৰ হ'ল "mile-a-minute", Bittervine,
African rope, Chinese creeper, Climbing hempweed, Mikania vine.
অসমত বিস্তাৰিত হোৱাৰ কাহিনী এনেৰূপে, দ্বিতীয় মহাসম্ভাৰৰ কাহিনী, অসমৰ
সৈন্য চাউনী ডিব্ৰুগড়ৰ ফালে, ঘোঁৰাৰ বাবে আমেৰিকাৰ পৰা হাঁহ আনুদানি,
তাৰে স্তিতৰত আছিল ইয়াৰ গাঁচ, অসমৰ পৰিবেশ পাই লহপহৰো বাঢ়ি আহিল।
ঠাইভেদে ইয়াৰ নাম বেলেগ বেলেগ, জাৰ্মানী লতা, প্ৰেমলতা, গাহৰি লতা,
চীনা লতা আদি। বাংলাদেশত আচাৰ্য লতা বোলে; নিৰ্দিষ্ট ৰোগলো নাম নাই।
অসমৰ বনভূমিৰ প্ৰায় বিংশ শতাংশ ভূমি ইয়াৰ বনলত, চাহ বাগিচাবোৰত
এটা সমস্যা হৈ পৰিছে। দক্ষিণ-ভাৰতৰ কিছু অঞ্চল যেনে - কোম্বালা
আদি ঠাইত গৰু-হাঁহৰ খাদ্য হিচাপে ব্যৱহাৰ কৰে যদিও বহুদিন
ব্যৱহাৰ কৰিলে লিভাৰ ৰোগ হয়। আফ্ৰিকাৰ কিছু খলুৱা-জাঞ্জিয়ে
কোম্বালা আৰু লতা হিচাপেও খায়। প্ৰতিজৈৱিকতা (Antibacterial)
গুণৰ বাবে অসম তথা উত্তৰ-পূৰ্বাঞ্চলত ইয়াক কটা-ছিটাৰ দৰৰ
হিচাপে ব্যৱহাৰ কৰা হয়। কাৰ্বি-জনজাতীয় লোকসকলে পোক,
পৰুৱা, বৰল ইত্যাদিয়ে কাৰ্মুৰিলে দৰৰ হিচাপে ব্যৱহাৰ কৰে।



- পিংকী বৰ্মন
চতুৰ্থ শাল্যায়িক

Rare Endangered Threatened (RET) Species



An endangered species is a native species that faces a significant risk of extinction in the near future throughout all or a significant portion of its range. Approximately of all plant species in the world are at risk of being endangered or going extinct. Though there are thousands of interesting & unusual plants, here are some common plants which have become rare & endangered species in the past 30 years due to habitat destruction.

Some of the RET species found in Assam are:

- Vanilla borneensis Rolfe

Family: orchidaceae

Vernacular name: Harjora-lota

Economic importance: It is used as an ornamental plant.

- Calamus nambariensis Becc.

Family: Arecaceae

Vernacular name: Hooka-bet

Economic importance: A high quality of cane used in furniture industry

- Nesua assamica (King & Prain) Kosterm.

Vernacular name: Sia-Nahor

Economic importance: The wood of the plant is highly valued for construction purposes.

- Elaeocarpus serratus L.

Vernacular name: Rudraksha

Economic importance: The fruit was employed to ward-off evil spirits which could be microbial infection

~ Niha Saikia

B.Sc 6th Sem

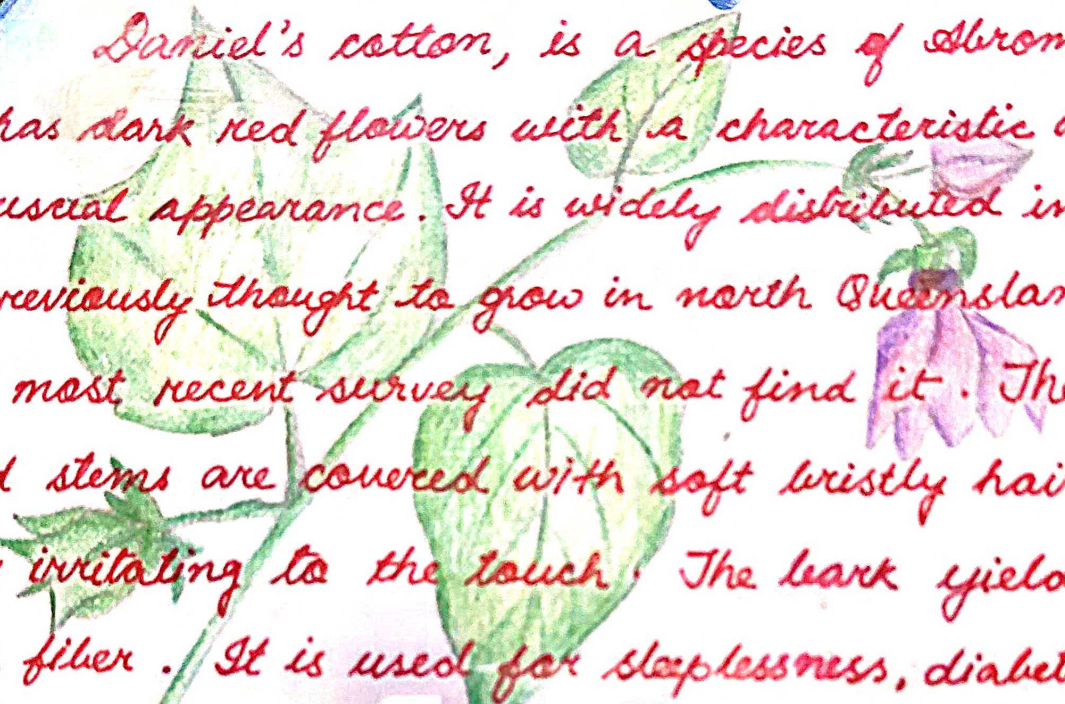
Wild Himalayan cherry

Prunus cerasoides, also known as Wild Himalayan cherry and sour cherry, is a deciduous cherry tree found in East Asia, South Asia and Southeast Asia. It is of the family Rosaceae and genus Prunus.

Its range extends in the Himalayas from Himachal Pradesh in North-Central India, to southwest China, Burma and Thailand. It is beneficial for backaches, fractured bone, vomiting, asthma, foot and mouth diseases.

— Manisha Paul
B.Sc 2nd Semester

Abroma augusta



Daniel's cotton, is a species of Abroma. It has dark red flowers with a characteristic and unusual appearance. It is widely distributed in Asia. It has previously thought to grow in north Queensland but the most recent survey did not find it. The leaves and stems are covered with soft bristly hairs that are very irritating to the touch. The bark yields a jute like fiber. It is used for sleeplessness, diabetes mellitus

Anurupa Barma

B.Sc. 2nd Semester

MAGIC OF ORCHIDS

Orchids are beautiful flowering plant and is grown in tropical regions. These are a diverse and widespread variety of flowering plant. These are the most resilient plant alive on this planet with more than 24,000 species. The species of Orchid are family, orchids are naturally grown in Thailand, Brazil, Hawaii, India, Malaysia, Mexico, Peru, Japan. In India it is grown in Assam, Meghalaya, West Bengal, etc.

Orchids are rich in anti-oxidant which make it ideal for diet. The flowers are rich in calcium and magnesium which makes it an excellent source of maintaining strong bones and teeth. It also prevents Osteoporosis and teeth damage.

One of the magical properties of orchids is to enhance digestion. The fibre and fluid content in orchid flower make it suitable for preventing the condition of diarrhoea, constipation, bowel movements.

Orchids also increases the immunity of human due to the presence of Vitamin C, which made it a pioneer for research during Covid-19 pandemic.

With such amazing benefits orchids play a key role in balancing the nature and organisms.

— Ipsita Sarma
B.Sc. 6th Semester



वे
Pla
रन
पि

Ponytail Palm

Ponytail বা ইয়াক সাধাৰণতে Beaucarnea recurvata বুলিও কোৱা হয়। ইয়াক কোৱা হয় Ponytail বা উলৰ অংশ কেইটা Swollen stem বুলিও কোৱা হয়। ইয়াক পনীয়া লৈ পালে। সাধাৰণতে Ponytail palm যিমান ডাঙৰ হয় সিমানৈই Plant টোও ধুৱেই কম পৰিমাণৰ পানীৰ সংগ্ৰহন হয়। সাধাৰণত পানী পৰিমাণেই হয়। ইয়াক বাবে যথেষ্ট দিলে ইয়াৰ উদ্ভিদ সংৰক্ষণ হয়। সম্ভাৱত দুবাৰ পানী এইবিধ জীৱন কাল সাধাৰণতে ১০০ বছৰলৈ হাব জিভত থাকে। সংগ্ৰহ কৰা হয়।

- Madhusmita
 Bahia
 6th
 Sem

THE DRAGON TREE

An unique plant found in Land of "Blue hills and Red rivers", Assam is Dracaena combodiana

This is a dragon tree species which is found in Assam West Karbi Anglong district. Its unique quality is that the sap turns bright red after coming in contact with air which is why it is also known as blood oozing tree.

The Dracaena genus belonging to the family Asparagaceae is represented by nine species and two varieties in the Himalayan region, the north east and Andaman and Nicobar Islands. But Dracaena combodiana is the only true dragon tree species.

It is a plant that yields the bright red resin used since ancient times as medicine, body oil, varnish, incense and dye. It is an important medicinal plant as well as an ornamental tree. Several antifungal, antibacterial compounds, antioxidants, flavonoids etc. have been extracted from various parts of the plant.

This non-ubiquitous plant should be preserved as it is for the first time reported in India.

— Priyanshvi Bhargava
B.Sc. 4th Semester

Lichens - The Little Things That Matters

Lichens are neither plant nor animal, but rather they are organisms unlike any other on Earth. While most people may think lichens are a type of moss, they are actually a combination of an algae and a fungus. The fungus provides a structure for the algae to live in while, algae provides food for the fungus.

Different
different roles
where they are
keystone in
they call home.
important to
and they have



many benefits for nature.

lichen species play
within the ecosystem
found. Lichens are a
many of the places
Lichens are ecologically
many National parks

Here are some of the many benefits that lichens give to nature -

- I) They are keystone species in many ecosystems.
- II) They serve as a food source and habitat for many animals such as deer, birds & rodents.
- III) They provide nesting materials for birds.
- IV) They protect trees and rocks from extreme elements such as rain, wind & snow.
- V) They clean environment hence air lowers the risk of respiratory problems like asthma or chronic obstructive pulmonary disease.

~ Jyotima Saharia
(4th Sem)

Giloy (Tinospora cordifolia)

Giloy is a herbaceous vine of the family

Menispermaceae indigenous to tropical regions of the Indian Sub-continent. The stem of Giloy is considered highly effective.

- Promotes digestion with its anstringent action
- Rejuvenates and nourishes the mind and body
- Increases energy and appetite
- Removes free radicals with its detoxifying properties that eliminate toxins from the liver and kidneys.



- fights & prevents respiratory infections.
- enhances functioning of white blood cells.

- Speeds up the wound-healing process with anti-inflammatory and antimicrobial properties.
- Contains therapeutic properties such as anti-diabetic, anti-spasmodic, anti-arthritic and anti-allergic properties.
- Boosts immunity and metabolism.
- Improves the body's defence mechanism against infections.

Shruti Dasgupta
6th Sem.



Wild Plants

The Treasure of Natural Healers

Need for unlocking the treasure: Wild plants are often prescribed by natural healers to cure diseases. Using plants as medicines has been the earliest practice of health-care system. As estimated 50,000-70,000 medicinal species are harvested from wild. Ethnomedicinal plants contain phytochemicals used for treatment of diseases. About 1.5% of flowering plants are screened for pharmaceutical compounds. There is an enormous wealth of information on cheap and culturally accepted ethnopharmacology-based remedies.

ETHNOMEDICAL USES OF SOME NORTH-EAST INDIAN WILD SPECIES

| <u>Scientific Name :</u> | <u>Common Name</u> | <u>Uses</u> |
|--------------------------------------|--------------------|---|
| ① <u>Adhatoda zeylanica</u> Medic. | (Bahak leta) | Used for cough, diarrhoea, dysentery & glandular tumours. |
| ② <u>Agematum conyzoides</u> Linn. | (Gondhuabon) | Used in cure of infusces. |
| ③ <u>Alternanthera sessilis</u> R.Br | (Matikaduni) | Used in growth of hair and stomach disorders, increase in milk flow. |
| ④ <u>Amaranthus spinosus</u> Linn. | (Hatikhutoma) | Used for snake bite, gonorrhoea and to increase milk flow. |
| ⑤ <u>Clitoria bennatea</u> Linn. | (Apanagita) | Juice of leaves mixed with salt applied around ears in earache and swelling of adjacent glands to relieve pain. |



Plastic Degradation Fungi

Use of plastic is considered as great threat to the world's environment as plastic polymers are non-degradable solid waste and produces toxic fumes when it is burnt.

Biodegradation process is the most effective way for plastic degradation due to its eco-friendly nature, non-polluting mechanism and cost effectiveness.

In the process of plastic biodegradation, many fungi play significant roles and acts by secreting some degrading enzymes like lipase, cutinase, proteases etc... Some fungi species which are proven to show effective degradation on plastics are - Aspergillus nidulans, A. flavus, A. oryzae, Penicillium sp. etc

Some saprotrophic fungi like Pleurotus abalones, P. eryngii, Agaricus bisporus etc... helps in degradation of plastics by growing on them.

Marine fungi also has potential to be important degraders of complex organic matter in the marine realm. Recent studies demonstrated that Zalenion manihimum have the ability to degrade polyethylene.

The increase in plastic pollution has adverse affects on living organisms which can be minimized by use of fungi for biodegradation of plastics.

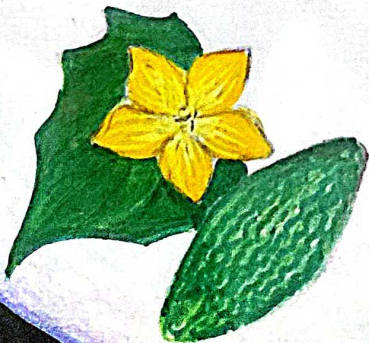
- Smriti Bora

B.Sc 6th Sem



HIMALAYAN BITTER GOURD

Herpetospermum pedunculatum of the family Cucurbitaceae, is a large herbaceous climber. This is an annual scandent herb. It is mainly distributed in South-east Asia i.e. southwest China, Nepal and north-east India. The plant can survive in extreme condition of the environment in Tibetan plate. This plant has high nutrition value and medicinal properties. The plant play as vital role in the ethnobotany of Tibetan community. The dried ripe seeds of the plant are widely used as Tibetan medicine to treat inflammatory, diseases and piles. It is also used as a drug for the treatment of piles and gastrointestinal inflammation. The plant is also full of cooling potency.



Niharika Sarma
B.Sc. 2nd Semester