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Kewra: A 24-Million-Year-Old Living Fossil

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Kewra: A 24-Million-Year-Old Living Fossil

Kewra gives many Indian sweets their flowery scent. In July 2026, scientists showed that its plant family grew in Assam at least 24 million years ago. This lesson explains the find, the two timelines it involves and where kewra grows today.

At a glance

Four key facts on this topic

01 **24 million years** The least age of the four fossil leaves.

02 **Assam** The Makum Coalfield gave the leaves.

03 **BSIP** The Lucknow institute that led the study.

04 **Pandanaceae** The plant family of kewra.

The plant and the find

1 What is kewra?

1.1 What are its names?

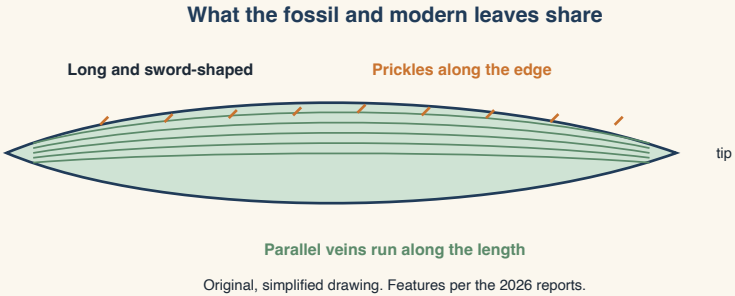
Kewra, kewda, kevda and ketki are names of one fragrant plant. Its English name is screwpine. It belongs to the family Pandanaceae, in the order Pandanales. A family is a group of related plants.

Books use more than one botanical name. The Ganjam GI file calls it Pandanus fascicularis. The same file's history notes use Pandanus odoratissimus. Exam questions often use the second name.

1.2 What does the plant look like?

It is a bushy shrub and a dominant plant of India’s coastal vegetation. It has thick stilt roots. Its long leaves carry prickly spines along the edges and mid-ribs.

Male and female flowers grow on different plants. The male spike is the fragrant one. The female spike has no scent.



Original diagram: the leaf features reported for both the fossils and modern kewra.

1.3 What is kewra used for?

Kewra essence flavours sweets and goes into perfumes. It is also used in traditional medicine and religious rituals. The essential oil comes from the male flowers.

7. **Think it through:** Why do we pick the male flower only? See answer ↓

Quick check 1. True or false: Kewra's essential oil comes from the female flowers. *(True or False?)* See answer ↓

Sources: origin-gi.com; devdiscourse.com

2 The Assam fossil leaves

2.1 Who found them?

Scientists at the Birbal Sahni Institute of Palaeosciences (BSIP) did. BSIP is in Lucknow. Birbal Sahni founded it as the Institute of Palaeobotany. Palaeosciences means the study of ancient life and old environments.

The team was led by Harshita Bhatia and Gaurav Srivastava. They published the work in the journal Geobios. Press reports on it are dated 15 July 2026.

2.2 Where were they found?

The team recovered four exceptionally preserved fossil leaves. They came from the Tikak Parbat Formation in the Makum Coalfield of Assam. A formation is a named layer of rock. A coalfield is an area with coal beds.

2.3 What did the leaves show?

The leaves have long sword-shaped blades, parallel veins and prickly margins. These match modern kewra. The team compared the fossils with herbarium specimens, botanical databases and fossil records from other places. A herbarium is a library of dried plants.

The analysis confirmed that the fossils belong to the Pandanaceae family. Fossils of this group are rare.

> 8. **Think it through:** Does a matching leaf prove the very same species? See answer ↓

Quick check 2. True or false: The fossil leaves were found in the Makum Coalfield of Assam. *(True or False?)* See answer ↓

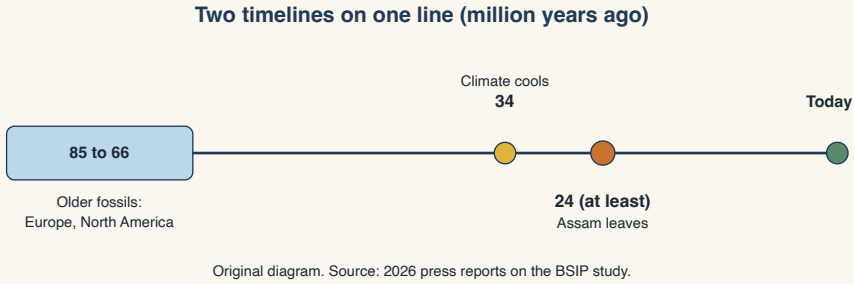
Sources: newsbytesapp.com; bsip.res.in

What the find means

3 Two timelines, not one

3.1 What are the two numbers?

The fossil leaves are at least 24 million years old. The wider family is much older. Earlier fossils from Europe and North America show its ancestors spread across the Northern Hemisphere 85 to 66 million years ago.



Original diagram: the Assam leaves are far younger than the oldest family fossils.

Two numbers that are easy to mix up

Number	What it dates	Where
At least 24 million years	The four fossil leaves	Makum Coalfield, Assam
85 to 66 million years	Older fossils of the plant's ancestors	Europe and North America

Number	What it dates	Where
About 34 million years	When world temperatures began to fall	Worldwide

Source: press reports on the 2026 BSIP study.

3.2 What changed in between?

World temperatures began to fall around 34 million years ago. The plants slowly vanished from many regions. They survived mainly in tropical places.

> 9. **Think it through:** Which number is the age of the leaves? See answer ↓

> **Quick check 3.** True or false: The 24-million-year figure is the age of the Assam fossil leaves. *(True or False?)* See answer ↓

> **Quick check 4.** True or false: World temperatures began to fall around 34 million years ago. *(True or False?)* See answer ↓

4 India as a refuge

4.1 What is a refuge?

A refuge is a place where a group of living things survives while it dies out elsewhere. The press reports say India acted as a safe refuge for ancient tropical plants. They say India preserved such lineages through major climate change.

4.2 What gap does the find fill?

The new fossils connect two sets of records. The older ones are from Europe and North America. The younger ones are from tropical Asia and Australia. The Assam leaves sit in the middle of that story.

4.3 Is kewra a 'living fossil'?

The phrase is informal. A living fossil is a living group that looks much like its fossil past. Here it points to how closely the fossil leaves match kewra. It does not mean the species is unchanged.

> **Quick check 5.** True or false: The fossils link older Europe and North America records with younger tropical Asia and Australia records. *(True or False?)* See answer ↓

Kewra today

5 Kewra in India today

5.1 Where does kewra grow?

It grows abundantly along the Odisha coast. The main belt lies on the Ganjam coast, between the Rushikulya and Bahuda rivers. The belt is about 45 km north to south and 15 km east to west, along the Bay of Bengal. The plants are good soil binders.

The GI file counts about 140 distillery units in Ganjam. Distillation is how the scented water and oil are drawn out of the flowers.

5.2 What is its GI tag?

A GI, or Geographical Indication, tag shows that a product belongs to a place. Ganjam Kewda Flower is a registered GI. Its area is Odisha and its class is 31, which is agriculture.

- **Applicant:** Ganjam Kewda Development Trust.
- **Certificate date:** 19 March 2012.
- **Valid up to:** 23 December 2030.

5.3 Is kewra an old plant in culture too?

Yes. The GI file says the plant, as ketki, is praised in many Sanskrit writings, Puranic and Classical. It also says Pandanus odoratissimus appeared in religious, social and language contexts since ancient times.

> **Quick check 6.** True or false: Ganjam Kewda Flower is a registered GI from Odisha. *(True or False?)* See answer ↓

Sources: search.ipindia.gov.in

Exam Practice

6 How exams test this

6.1 Which facts are asked most?

- **Who:** BSIP, Lucknow, not a bigger body such as ICMR or CSIR.
- **Where:** Makum Coalfield, Assam.
- **Age:** at least 24 million years.
- **Family:** Pandanaceae.
- **Journal:** Geobios.

6.2 Which mix-ups come up?

- **24 against 85 to 66:** leaf age against the older family fossils.
- **Role of India:** a refuge, not the place where the family began.
- **Fossil against species:** the leaves match kewra and share its family.

Remember this

- **Finders:** BSIP, Lucknow, in the journal Geobios.
- **Place:** Makum Coalfield, Assam.
- **Leaf age:** at least 24 million years. The family's older fossils are 85 to 66 million years old.
- **Family:** Pandanaceae.
- **Role:** India as a refuge after cooling about 34 million years ago.

Explain it back: Say which number dates the leaves and which dates the older family fossils. Then say what a refuge is.

Practice MCQs

1. Kewra essence comes from which plant, commonly known as the screwpine?

A. Santalum album

B. Michelia champaca

C. Cinnamomum verum

D. Pandanus odoratissimus

See answer ↓

2. Which research institute led the fossil study confirming Kewra's ancient Indian lineage, reported in July 2026?

A. Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow

B. Geological Survey of India

C. Wadia Institute of Himalayan Geology

D. Zoological Survey of India

See answer ↓

3. The fossil leaves confirming Kewra's ancient presence in India were found in which state, and roughly how old are they?

A. Rajasthan, about 5 million years old

B. Kerala, about 50 million years old

C. Assam, about 24 million years old

D. Odisha, about 10 million years old

See answer ↓

4. Fossil evidence shows Pandanus ancestors once spread widely across the Northern Hemisphere. Roughly how old are those older fossil records, and from which regions?

A. 85-66 million years, from Europe and North America

B. 200-150 million years, from Antarctica and Australia

C. 10-5 million years, from Africa and South America

D. 24 million years, from Assam and Odisha

See answer ↓

5. What specific role did India play in Pandanus's evolutionary history, after global cooling began around 34 million years ago?

A. India had no Pandanus presence until it was introduced by humans

B. India was where the plant family went completely extinct first

C. India was where the plant family first evolved, before spreading elsewhere

D. India served as a refuge where the ancient lineage survived, even as it disappeared from most other regions

See answer ↓

Answer Key

1. **D.** The correct answer is **Pandanus odoratissimus**. The Ganjam GI file names this screwpine in its history notes, and kewra essence comes from its male flowers. The 'Cinnamomum verum' option is wrong because that is cinnamon. The 'Santalum album' option is wrong because that is sandalwood. The 'Michelia champaca' option is wrong because that is the champak flower. Memory hook: kewra comes from the screwpine, not a spice tree. ↑ Q1
2. **A.** The correct answer is **Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow**. A BSIP team led by Harshita Bhatia and Gaurav Srivastava studied the fossil leaves. The 'Wadia Institute of Himalayan Geology' option is wrong because it did not lead this study. The 'Zoological Survey of India' option is wrong because it studies animals. The 'Geological Survey of India' option is wrong because it did not lead this study either. Memory hook: plant fossils, so Birbal Sahni's institute. ↑ Q2
3. **C.** The correct answer is **Assam, about 24 million years old**. Four leaves came from the Makum Coalfield, Assam, and are at least 24 million years old. The 'Odisha, about 10 million years' option is wrong because Odisha is where kewra grows today, not where the leaves were found. The 'Kerala, about 50 million years' option is wrong on both state and age. The 'Rajasthan, about 5 million years' option is wrong on both. Memory hook: coal in Assam, 24 million years. ↑ Q3
4. **A.** The correct answer is **85-66 million years, from Europe and North America**. Older fossils there show the plant's ancestors spread across the Northern Hemisphere. The '10-5 million years' option is wrong because it is far too young. The '24 million years, from Assam and Odisha' option is wrong because 24 million years is the age of the Assam leaves. The '200-150 million years' option is wrong because it is far too old. Memory hook: 85 to 66 is the family, 24 is the leaf. ↑ Q4
5. **D.** The correct answer is **India served as a refuge where the ancient lineage survived**. Temperatures fell around 34 million years ago and the plants vanished from many regions. India preserved such tropical lineages. The 'first evolved in India' option is wrong because the reports do not say that. The 'went extinct first' option is wrong because the lineage survived. The 'introduced by humans' option is wrong because the fossils are millions of years older than people. Memory hook: refuge means survivor. ↑ Q5

Quick-check answers

1. **False.** The oil is extracted from the male flowers. The female spike is odourless. ↑ 1
2. **True.** Four leaves came from the Tikak Parbat Formation in the Makum Coalfield, Assam. ↑ 2
3. **True.** At least 24 million years is the leaves' age. The 85 to 66 million years range dates the older fossils. ↑ 3
4. **True.** That cooling is why the plants vanished from many regions. ↑ 4
5. **True.** That link is the gap the find fills. ↑ 5
6. **True.** The GI registry lists it as registered, with Odisha as the area. ↑ 6
7. **Think it through.** Only the male spike carries the scent that gets distilled. ↑ 7
8. **Think it through.** The reports say the fossils match kewra and belong to the same family. They do not say the fossil plant is the same species as today's kewra. ↑ 8
9. **Think it through.** 24 million years, at least. The 85 to 66 range dates the older fossils of the family's ancestors. ↑ 9

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