Discover India Program 2022-23

Eucalyptus in Kodaikanal,Tamil Nadu: Economic and Ecological Perspective



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Introduction

- **Invasive species planted by Britishers in Palini Hills in 1843**
- **Planted for medication, fuel, draining marshes and swamplands to reduce insects**
- **Aggressively planted by the government post-independence for economic benefits, locals incentivized to grow them too.**
- **Thus, there is a conflict of interest between ecological harm**

literature review

1

Allelopathic Impacts



- It **inhibits** the **plant growth.**
- The **chemicals** stem from the **biomass litter** of **Eucalyptus** Plants.
- Litter plays a **crucial role** in the **plant population** and the **quality of the crops** grown.

- **Heavily impacted** by the introduction of Eucalyptus.
- Planting more Eucalyptus Trees due to the **rising demand for timber and fuelwood.**
- Eucalyptus has a **potential to aid in the regeneration** of Sholas.



Shola Forests & Grasslands

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Eucalyptus Oil



- Eucalyptus Oil **is rich in medicinal properties.**
- Also used in **Perfumery industry.**

- **Allelopathic compounds attract bees** which helps with the production of honey.
- Eucalyptus Honey carries some **medicinal properties.**

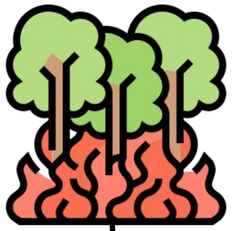


Eucalyptus Honey

4

5

Forest Fire



- Due to their **dry barks and high volatile oil** containing leaves, they play a major role in causing Forest Fires.
- The trees tend to **regrow after the forest fire.**



gaps identified



- Scarce availability of secondary data on the economic impact of Eucalyptus in Kodaikanal
- Understanding the role that Eucalyptus trees play in Forest fires of Kodaikanal.
- Understanding in detail why sholas are now regenerating under Eucalyptus trees.
- Present-day impacts of Eucalyptus on the grasslands in Kodaikanal.
- Impact of Allelopathy by Eucalyptus trees in Kodaikanal.

research questions

What has been the overall impact of Eucalyptus on the grassland ecosystem?

What has been the overall impact of Eucalyptus on the Sholas forests?

What role do Eucalyptus trees play in the forest fires of Kodaikanal?

To what extent has the Kodaikanal economy benefitted from the Eucalyptus Oil and the Eucalyptus Honey industry?

What is the overall nature of the allelopathic impact that eucalyptus is having on other plant species in Kodaikanal?

methodology

Literature Review

Research articles : JStor, Google Scholar, and ResearchGate.

Newspaper articles : The Times Of India, Hindustan Times, & The Kodai Chronicle.

Primary Data

Pre-field : Pre-field google meets & telephonic conversations with a few respondents to collect initial information.

On field : Collection of data in form of Field-visits, surveys, interviews, & focus group discussions.

Data Analysis

First method - Descriptive analysis using literature review to back up on-field results.

Second method - Usage of infographics for the economic analysis of Eucalyptus Oil's impact in Kodaikanal.

ecological findings

- **The impact of *allelopathy* can be seen in Kodaikanal. Solutions to avoid this phenomenon were also found*: ring-barking* & avoiding crop growth in the vicinity of eucalyptus.**

- ***Grasslands* got most affected and *outcompeted* because of being considered *"wastelands"* and there is no sign of regrowth.**

- ***Sholas* also got affected but they can now be seen *regrowing* under eucalyptus canopy.**

Natural disasters

- **Eucalyptus doesn't cause *forest fires* but ends up *spreading* it.**

- **During Cyclone Gaja, *majority* of the trees that fell were *eucalyptus* because of their *shallow roots*.**

eucalyptus oil

- ***Economies of scale*** **play a role for the** ***small-scale extractors*** **and distilleries. Thus, there isn't a lot of profitability in the business for small-scale producers.**

- **From the producers' perspective, the whole process of making eucalyptus oil gives** ***jobs*** **to a lot of** ***locals*** **which acts as their** ***main source of income.***

- **From a consumers' perspective, there is strong indication of** ***high demand.***

Secondary products

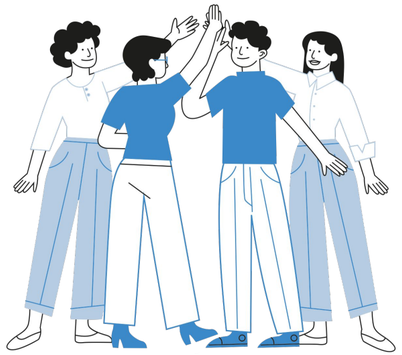
- **Eucalyptus Firewood: Villagers in Poombarai *prefer Eucalyptus Firewood over gas stoves*.**
- **Eucalyptus Honey: *No common consensus* as to existence of eucalyptus honey in Kodaikanal among respondents.**

limitations

- Lack of our expertise as undergraduate students when it came to conducting scientific experiments.
- Lack of time for our on-field research limiting stakeholder coverage
- Hesitancy amongst consumers to fill out survey forms resulting in limitation of data collected.

FUTURE SCOPE: Explore the eucalyptus honey industry in greater depth; researching the sub-topics with greater expertise and time; studying the impact of other invasive species in Kodaikanal.

learnings & reflections



On-field Research Experience



Communication & Group Work



Time Management

references

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thank you!



