DOCUMENTATION, DATABASE AND CONSERVATION OF EDIBLE MUSHROOMS RESOURCES OF KERALA

FINAL TECHNICAL REPORT

(2022-2025)

SUBMITTED TO

KERALA STATE BIODIVERSITY BOARD

THIRUVANANTHAPURAM

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2025

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PROJECT DETAILS

1.	Project title	: **Documentation, Database and Conservation of Edible Mushroom Resources of Kerala.**
2.	Sanction No.	: No. 740/A13/2022/KSBB dtd. 23–11–2022
3	Name & Address of P.I with mobile No.	: **Dr. C. K. Pradeep** Principal Scientist JNTBGRI, Palode-695 562 Thiruvananthapuram Mobile: 9446849654.
4	Institution where the work will be carried out	: KSCSTE-JNTBGRI, Palode-Thiruvananthapuram-695562
	Project duration	: 24 months
	Date of start	: 01-01-2023
5.	Total amount of assistance sanctioned	: Rs. 8, 81, 000/-

TECHNICAL REPORT

Introduction

Kerala, a state renowned for its vibrant biodiversity, is a treasure trove of diverse ecosystems that nurture a wide variety of flora and fauna. Amidst the lush forests, humid climates, and fertile soil, edible mushrooms thrive in hidden niches, enriching the culinary landscape with their unique flavours and textures. These mushrooms are not only essential to the local cuisine but also has deep cultural ties, with indigenous communities relying on them as an important food source.

The edible mushrooms found in Kerala are a living testament to the region's biodiversity. With species that range from commonly known varieties to those that remain lesser-known, these mushrooms are often harvested from the wild, providing sustenance to local communities. Despite their integral role in local economies and traditions, the sustainable harvesting of mushrooms is at risk due to deforestation, habitat destruction, and the increasing loss of indigenous knowledge.

To address these challenges, comprehensive documentation and the creation of a robust database are imperative. This would not only make it easier for locals to distinguish between edible and non-edible species but also provide critical information for researchers, conservationists and policymakers striving to ensure the continued availability and sustainability of these resources. A systematic approach to cataloging the diversity of wild edible mushrooms can support conservation efforts, ensuring that future generations can benefit from these invaluable resources.

The objectives of this document are twofold: to understand the rich diversity of edible mushrooms in Kerala and to highlight the urgent need for their conservation. It emphasizes the necessity of proper documentation, the creation of a reliable database, and the implementation of effective conservation strategies. These efforts will safeguard the ecological balance of Kerala's forests while promoting the sustainable use of mushrooms, benefiting not only the local communities but also researchers and the wider scientific community.

In order to achieve these goals, this study collects and documents information about common and lesser-known wild edible mushrooms found in the forests of Kerala. By focusing on the identification, preservation and sustainable use of these fungi, this work aims to build a comprehensive source that will serve as an invaluable resource for future generations. Moreover, this effort seeks to foster greater awareness of the environmental significance of mushrooms, ensuring their role in local food security and traditional knowledge is recognized and preserved.

Through this endeavor, we hope to bring attention to the remarkable diversity of edible mushrooms in Kerala and their significant contribution to the health and income of local communities. Beyond their role as a vital food source, these mushrooms are an integral part of local economies, often providing a sustainable income for many families who harvest and sell them. The sustainable harvesting and proper management of mushroom resources can empower local communities, create opportunities for economic growth, and promote better health outcomes. Ultimately, through comprehensive documentation, the development of a reliable database and effective conservation strategies, we can ensure that these valuable resources continue to benefit both present and future generations, supporting the health, culture, and economy of Kerala.

Objectives

- **Documentation and identification of edible mushrooms resources of Kerala**
- **Development of a database on the mushrooms resources of Kerala.**
- **Conservation**

Methodology

Survey and collection of edible mushrooms from different parts of Kerala was conducted during the off season and monsoon months. Detailed systematic macrofungal explorations were carried out in various forest localities of Kerala. Standard protocols were used for collection, identification and preservation of the samples collected (Largent 1997; Singer 1986). Field photographs were also taken.

The voucher specimens were preserved as herbarium and deposited in the Mycological herbarium of microbiology Division of Jawaharlal Nehru Tropical Botanic Garden and Research Institute [TBGT(M)] with accession numbers.

Pure cultures of wild edible mushrooms collected during the period were developed in PDA medium by tissue culture method. Fruit bodies were surface sterilized with 0.1% Mercuric chloride. A small piece of tissue from the context of the mushroom was transferred aseptically to the pre-sterilized PDA culture medium under aseptic condition and was then incubated at $25^0C \pm 2^0C$ in BOD incubator for a week. Mycelium from growing edges was carefully transferred to PDA slants and again incubated for 2–3 weeks to obtain the pure cultures. The culture is revised in every two weeks interval (Alves *et al*. 1998).

RESULTS

Objective-I -Documentation and identification of edible mushrooms

During the two principal monsoon season and pre-monsoon shower, extensive field collection trips were conducted to various forest localities of Kerala to collect germplasm of wild edible mushrooms. This includes different forest localities of Kerala in addition to the regular foray of 121 hectare JNTBGRI campus. Altogether 146 individual collections were made from different forest and other localities. All collections were fully studied and identified to 42 species. All collections were processed and deposited in the existing mushroom herbarium of JNTBGRI.

List of edible mushrooms documented during the period:

1. *Agaricus bingensis* Heinem.
2. *Agaricus bitorquis* (Quél.) Sacc.
3. *Agaricus flocculosipes* R.L. Zhao, Desjardin, Guinb. & K.D. Hyde
4. *Agaricus gratolens* C.K. Pradeep & R.L. Zhao
5. *Agaricus subrufescens* Peck
6. *Amanita hemibapha* (Berk. & Broome) Sacc.

7. *Cantharellus cibarius* Fr.
8. *Candolleomyces candolleanus* (Fr.) D. Wächt. & A. Melzer
9. *Coprinopsis cinerea* (Schaeff.) Redhead, Vilgalys & Moncalvo
10. *Coprinus comatus* (O.F Mull.) Pers.
11. *Hygrocybe punicea* (Fr.) Kummer
12. *Hymenopellis radicata* (Relhan) R.H. Petersen
13. *Laccaria amethystina* Cooke
14. *Laccaria lacata* (Scop.) Cooke
15. *Lentinus sajor-caju* (Fr.) Fr.
16. *Lentinus squarrosulus* Mont.
17. *Lepista sordida* (Schumach.) Singer
18. *Macrocybe crassa* (Sacc.) Pegler & Lodge
19. *Macrocybe titans* (H.E. Bigelow & Kimbr.) Pegler, Lodge & Nakasone
20. *Macrolepiota dolichaula* (berk. & Broome) Pegler & R.W. Rayner
21. *Macrolepiota procera* (Scop.) Singer
22. *Oudemansiella canarii* (Jungh.) Höhn.
23. *Panus neostrigosus* Drechsler-Santos & Wartchow
24. *Phlebopus portentosus* (Berk. & Broome) Boedijn
25. *Pleurotus djamor* (Rumph. ex Fr.) Boedijn
26. *Pleurotus flabellatus* Sacc.
27. *Pleurotus giganteus* (Berk.) Karunarathna & Hyde
28. *Pleurotus ostreatus* (Jacq. Fr.) Kumm
29. *Pleurotus tuber-regium* (Fr.) Singer
30. *Pluteus cervinus* (Schaeff.) P. Kumm.
31. *Russula aciculocystis* Kauffman ex Bills & O.K. Mill.
32. *Russula congoana* Pat.
33. *Russula mariae* Peck
34. *Strobilomyces strobilaceus* (Scop.) Berk.
35. *Termitomyces clypeatus* R. Heim
36. *Termitomyces eurrhizus (*Berk.) R. Heim
37. *Termitomyces heimii* Natarajan
38. *Termitomyces microcarpus* (Berk. & Broome) R. Heim
39. *Termitomyces microcarpus* (Berk. & Broome) R. Heim
40. *Termitomyces radicatus* Natarajan
41. *Volvariella bombycina* (Schaeff.) Singer
42. *Volvariella volvacea* (Bull.) Singer

Objective-II: Development of a database on the edible mushrooms

Mushrooms are an essential part of the rich biodiversity found in Kerala, known for its tropical climate, lush forests, and diverse ecosystems. Kerala, located in the southwestern part of India, is home to a variety of edible mushrooms that are not only consumed for their nutritional benefits but also hold cultural significance in local cuisine and traditional medicine. The database on edible mushrooms of Kerala would serve as a comprehensive digital repository to document and study these fungi. It would provide information on their identification, ecological significance, nutritional values, medicinal properties and local usage. This resource would be invaluable for researchers, foragers, chefs and health enthusiasts.

Key Components of the Database

1. Taxonomy and Morphology: Information on the scientific classification and physical characteristics (size, shape, color, texture, etc.) of the mushrooms.
2. Habitat Data: Geographic distribution and specific environments where each mushroom species is commonly found in Kerala.
3. Images and Identification: High-quality images of each species for easier identification.

The database on edible mushrooms of Kerala focuses on collecting and documenting crucial information about the various species of edible mushrooms found in the region. The primary objective of the database is to provide comprehensive data that can aid in the identification, study and sustainable use of these mushrooms. The database includes key aspects such as:

1. Morphological Data

Morphological data refers to the physical characteristics of the mushrooms, which are essential for identifying and distinguishing different species. This includes:

- Cap Shape and Size: The shape (e.g., convex, bell-shaped, flat) and size (diameter) of the cap.

- Gills or Pores: Information on the gill structure (for gilled mushrooms) or pore structure (for boletes or polypores).
- Stem Characteristics: The size, shape, color and texture of the stem.
- Spore Print: Colour and shape of the spores when the mushroom cap is placed on a surface to release its spores.
- Odour and Taste: Description of any distinct smells or tastes that may help in identification.
- Colour and Texture: Detailed description of the color and texture of different parts of the mushroom (cap, gills, stem, etc.).

2. Locality

Locality data provides insights into where these mushrooms are typically found in Kerala. This includes: Specific regions, districts, or areas within Kerala where each mushroom species has been found.

3. Period of Fruiting

This aspect provides critical data about when the mushrooms fruit or appear in their edible form. Information on the seasonality and fruiting period is important for foragers, mushroom growers and researchers. Many mushrooms in Kerala fruit during the monsoon season, which starts around June and lasts till September.

4. Field Photographs

High-quality field photographs are crucial for the identification and classification of mushrooms. Images of the mushrooms in their natural habitat, highlighting key morphological features such as cap shape, gills, stem, and spore print.

Benefits of the Database

- Accurate Identification: This database would help users easily identify edible mushrooms, minimizing the risk of consuming toxic or inedible species.

- Conservation Efforts: By tracking the localities and fruiting periods of different mushroom species, the database can help in monitoring the conservation status of various species.

- Sustainable Foraging: With detailed locality data, foragers can understand the sustainable harvesting times and avoid over-exploitation of certain species.

- Culinary Exploration: It can enrich Kerala's culinary traditions by promoting lesser-known edible mushroom varieties, expanding the use of local mushrooms in cuisine.

- Research and Education: The database serves as an educational tool for students, researchers and naturalists interested in the diverse fungal species of Kerala.

Conclusion

The database on edible mushrooms of Kerala primarily include information on various aspects of the collected edible mushrooms such as morphological data, locality, period of fruiting, association, field photographs etc. were recorded. This forms the basic database of the edible mushrooms collected during the two year period. This forms the first level of information and in subsequent years additional data can be added.

AGARICUS BINGENSIS Heinem.

Pileus (Cap): 7–9 cm convex, later plano-convex to applanate with or without an umbo, surface chalky white in young ones with punctiform scales throughout.
Lamellae (Gills): free, dark brown.
Stipe (Stalk): 7–9 × 1–1.2 cm central, cylindrical with a bulbous base, brittle, surface chalky white with punctiform squamules below the annulus (ring).
Context (Flesh): White, fleshy
Annulus (Ring): White, superior, pendant
Odour & Taste: Strong of anise; Taste excellent
Spore print: Brown
Spores: Brown, ellipsoid to oblong 6.4–10 × 4.4–5.6(6) µm
Habitat: Solitary on soil among grass
Locality: Sreenivasapuram, Varkala, Thiruvananthapuram Dt.
Season: May
Common Name: Nil
Status: Wild
Cultivation practices: Nil
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Good

Notes: *Agaricus bingensis* is a large species recognized by its large white pileus (up to 25 cm diam.) with punctiform scales over the cap surface and large white pendent annulus. A good edible species (Rammeloo & Walleyn1993; Chen *et al*. 2015).

AGARICUS BITORQUIS (Quél.) Sacc.

Pileus (Cap): 7.9–14 cm, globose, semi globose, later convex to plano-convex, surface white, smooth.
Lamellae (Gills): free, dark brown, crowded.
Stipe (Stalk): 40–70 × 20–43 mm, central, cylindrical, solid, surface white smooth.
Context (Flesh): thick, fleshy, soft.
Annulus (Ring): intermediate, double, white.
Odour & Taste: Mild; Taste excellent
Spore print: Brown
Spores: Brown, 5.5–8.5 × 5.1–6.2 µm, ellipsoid, smooth
Habitat: Solitary, scattered on soil and on manure heaps
Locality: JNTBGRI campus Palode, Thiruvananthapuram.
Season: October to December.
Common Name: Pavement mushroom
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/palatability: Cultivation/ excellent

Notes: *Agaricus bitorquis* is an edible cosmopolitan mushroom widely distributed world over (Wasser 1989; Kerrigan 2016). It can easily be recognized by its large, fleshy white or fruitbody, reddening of the flesh, solid stipe, double intermediate annulus (ring) and large basidiospores. It is found in a wide variety of habitats such as in broad leaved forests, parks, gardens, kitchen-garden, pastures, on heaps of debris. *Agaricus bitorquis* is a choice edible and cultivated species.

AGARICUS FLOCCULOSIPES R.L. Zhao, Desjardin, Guinb. & K.D. Hyde

Pileus (Cap): 6–16 cm, subglobose becoming convex, plano-convex to finally upturned; surface yellowish white becoming greyish orange with brownish orange to dark grain like squamules throughout.
Lamellae (Gills**)**: free, white becoming dark brown, crowded.
Stipe (Stalk): 9–20 cm × 8–30 mm, central cylindric, hollow, brittle, with a sub-bulbous to clavate base, milky white to off-white becoming brown on handling.
Context (Flesh): white, thick, soft
Annulus (Ring): superior white, pendant
Odour & Taste: Pleasant aniseed like; Taste excellent
Spore print: Brown
Spores: Brown, 3.2–6 × 2.4–4 µm ellipsoid, smooth
Habitat: Solitary to scattered in groups on forest soil
Locality: JNTBGRI Campus, Palode, Thiruvananthapuram Dt.
Season: April, July to November
Common Name: Nil.
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique:
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/palatability: Cultivated/ Excellent

Notes: A potentially cultivable species is distinguished by its relatively large white fruitbody (110–80 mm), erect floccose scales on the surface of the stipe, persistent, pendent membranous ring on the upper part of the stipe and anise odour. *Agaricus flocculosipes* is edible and recently cultivated (Thongklang *et al*. 2014).


AGARICUS GRATOLENS C.K. Pradeep & R.L. Zhao

Pileus (Cap): 3–12 cm diam., subglobose or parabolic with a flat disc expanding to more or less applanate, sometimes broadly and lowly umbonate or with a depressed centre, surface chalky white with brownish disc, brownish appressed scales on the centre
Lamellae (Gills): free, white in bud becoming orange white
Stipe (Stalk): 4.5–19 cm × 5–14 mm, central, cylindric, with a slightly thickened base; white, smooth above, floccose scales present at the base.
Annulus (Ring): superior, membranous, white, pendant, skirt like
Odour & Taste: Pleasant, flowery; Taste excellent
Spore Print: Brown
Spores: Brown, 5.6–6 × 3.2–4 µm, thick-walled, ellipsoid to oblong
Context (Flesh) thick, soft, white
Habitat: Solitary, pairs or scattered in soil among leaf litter
Locality: JNTBGRI Campus; Perayam, Palode, Thiruvananthapuram Dt.
Season: June to October
Common Name: Nil
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Excellent

Notes: This species is recognized by its moderately large white cap with minute appressed squamules and the pleasant flowery smell. It is an excellent edible species.

AGARICUS SUBRUFESCENS Peck

Pileus (Cap**)**: 5.3–10.9 cm diam., expanding convex to plane with a flat or slightly depressed centre, surface off-white covered by teak brown to dark brown fine appressed scales; margin of the cap with remnants from the partial veil in young basidiomata
Lamellae (Gills): At first white, then pink, finally attain dark brown, free
Stipe (Stalk): 6–9.5 × 0.7–1.6 cm, central, cylindrical, stuffed later become narrowly hollow, brittle, tapering upwards from a broad base; surface white, yellowing on touching or on scratching
Annulus (Ring): large, white, skirt like, pendant, persistent
Context (Flesh): 6 mm thick at the pileus disc, white, yellowing on cutting
Odour: Strong of anise
Spore Print: Dark brown.
Spores: Brown, 5.2–6 × 3.6–4 µm, ellipsoid, smooth
Habitat: Solitary on bare soil and under living bamboo stands
Locality: JNTBGRI Campus, Thiruvananthapuram Dt; Villiyappally, Kozhikkode Dt, Kuruva Island, Wayanad Dt.
Season: July, September to October
Common Name: Almond mushroom
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/ Good

Notes: *Agaricus subrufescens*, sometimes referred to as the almond mushroom, is edible, has a slightly sweet flavour and smells like almonds.

AMANITA HEMIBAPHA (Berk. & Broome) Sacc.

Pileus (Cap): 5–11 cm diam., expanding to plane, often depressed at the centre, surface uniformly tomato red in the bud, capsicum red to tomato red with deep orange margin, fading with age, without any scales, smooth and glabrous
Lamellae (Gills): Free, creamy white in buds, pastel yellow to light yellow when mature
Stipe (Stalk): 7–15 cm × 6–12 mm, central, maize yellow in the upper half, pastel yellow in the lower half, decorated with patches of maize yellow to sunflower yellow sub-felted scales
Annulus (Ring): Superior, membranous, persistent, skirt like, yellow
Volva: **S**accate, white
Odour & Taste: Mild, taste excellent
Spore print: White to cream
Spores: White, 8.9–9.5 × 5.9–6.2 µm, ellipsoid to elongate inamyloid
Habitat: Solitary or gregarious on soil associated with *Hopea parviflora*, *Vateria indica* and *Myristica* sp.
Locality: JNTBGRI campus, Kallar, Bonacaud, Thiruvananthapuram Dt; Thenmala, Kollam Dt.
Season: February, April, June to September
Common Name: Half-dyed slender Caesar
Status: Wild
Cultivation practices: No
Uses: Food and medicine.
Parts used: Fruit body(Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/excellent

Notes: Commonly known as the half-dyed slender Caesar is an excellent edible species commonly found in association with trees of Dipterocarpaceae trees.



CANTHARELLUS CIBARIUS Fr.

Pileus (Cap**)**: 3–10 cm diam., convex becoming nearly plane, disk shallowly depressed, surface deep yellow to butter yellow fading in age and dry weather, glabrous, margin in rolled and incurved.
Lamellae (Gills): Decurrent, narrow, cream to yellow, blunt, forked
Stipe (Stalk): 2.5–6.5 cm × 7–22 mm, central cylindric to compressed, solid equal or often tapered at base. Surface light yellow to yellowish white, smooth and glabrous
Odour: Pleasant like apricots when fresh
Spore Print: White
Spores: White, 7.5–12 × 5–6.5 µm, ellipsoid, inamyloid with a thin smooth wall
Habitat: Solitary or in groups on soil in association with Dipterocarpaceae trees
Locality: Muthanga, Ponkuzhy, Wayanad Dt.; Kallar, JNTBGRI Campus, Thiruvananthapuram Dt.
Season: June to October
Common Name: Golden Chanterelle
Status: Wild
Cultivation practices: No
Uses: Food and medicine.
Parts used: Fruit body (Whole)
Processing technique: Dried/freezed
Existing value added products: Nil
Possibility of value added products: Yes
Palatability: Excellent

Notes: One of the most popular edible fungi with delicate aroma of apricot and golden yellow colour. Thick, blunt, shallow, fold-like deccurent gills, golden orange colour and fruity odour are characteristic features. They are rich in vitamin A & D and pigment carotene (Pilz *et al*. 2003).

CANDOLLEOMYCES CANDOLLEANUS (Fr.) D. Wächt. & A. Melzer

Pileus (Cap): 3–8 cm diam., conical then convex-applanate, greyish brown, darkening to brownish at the centre, occasionally with a few velar scales, slightly slimy when moist.
Lamellae (Gills): free, cream to flesh-pink, 3–6 mm wide, crowded
Stipe (Stalk): 2–12 cm × 0.5–2 mm, cylindrical, solid, brittle; surface whitish to cream colour, fibrous
Context (Flesh): White, up to 1.5 cm thick at the disc white
Odour: Not distinct
Spore Print: Pale to dark brown
Spores: Brown, 5.5–7.5 × 3.7–4.5 µm, ovoid to ellipsoid, hyaline, with few contents
Habitat: In small groups around stumps and on lawns and pastures
Locality: Throughout Kerala
Season: June to August
Common Name: Pale Brittle Stem.
Status: Wild
Cultivation practices: Nil
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Nil
Palatability: Medium
Notes: Despite being edible and possibly tasty, it is not recommended because of its thin flesh, perceived lack of culinary value and consistency and difficulties in identification (Trudell & Ammirati 2009; Miller Jr. *et al.* 2006).

COPRINOPSIS CINEREA (Schaeff.) Redhead, Vilgalys & Moncalvo

Pileus (Cap): 1.8–3.8 cm diam., campanulate to convex, with slightly raised apex, surface initially white, turning grey to greyish brown, light brown at apex, cap covered with white woolly appressed scales in buds easily removable, pileal margin radially splitting.

Lamellae (Gills): Free, crowded, narrow, deliquescent, white when young become grayish black at maturity

Stipe (Stalk): White, 6.5–8.7 × 5–8 mm, central, tapering up from a bulbous base with a short white root, hollow, brittle, surface white fibrillose, often with a short white root, solid

Context (Flesh): white, blackening at maturity

Annulus (Ring): Absent

Odour: Mild

Spore Print: Black

Spores: Black, 8.5–12 × 5–7 µm, ellipsoidal with a broad central germ pore, thick-walled, brown to blackish brown.

Common Name: Gray Shag mushroom

Habit: Scattered or in dense clusters in arecanut husk

Locality: Throughout Kerala

Season: May to November

Common Name: Grey shag

Status: Wild

Cultivation practices: Yes

Uses: Food

Parts used: Fruit body (Whole)

Processing technique: Dried

Existing value added products: Nil

Possibility of value added products: No

Methods of popularization/ palatability:Cultivation/Good

Notes: *Coprinopsis cinerea* commonly known as the Gray shag mushroom, is a small thin edible species found growing in arecanut wastes. It is edible, however, must be consumed in the young stage before opening of the cap (McKnight &

COPRINUS COMATUS (O.F Mull.) Pers.

Pileus (Cap): 2 cm diam., parabolic, surface white turning black when cap opened, covered with recurved scales when young, smooth and glabrous when mature.

Lamellae (Gills): Adnexed, deliquescent, grey become black when mature

Stipe (Stalk**)**: 9.5 cm × 6 mm, central, cylindric, hollow, tapering upwards from a broad base, brittle, white, smooth, glabrous

Context (Flesh): White, soft, thin

Annulus (Ring): Nil

Odour: Nil

Spore Print: Black

Spores 12–16 × 7–8 µm, smooth elliptical with an apical pore

Habit: Scattered, grouped, or in dense clusters on disturbed ground in grass or lawns

Locality: Muthanga, Wayanad Dt.; Munnar, Idukki Dt.

Season: May to November

Common Name: Shaggy ink cap, Lawyer's wig, Shaggy mane

Status: Wild.

Cultivation practices: Yes

Uses: Food.

Parts used: Fruit body (Whole)

Processing technique: Dried

Existing value added products: Nil

Possibility of value added products: Yes

Methods of popularization/ palatability: Cultivation/Good

Notes: This thin small species is found in growing on lawns and waste lands. The young fruit bodies first appear as white cylinders emerging from the ground and later become bell-shaped as it open. When young it is an excellent edible mushroom if it is eaten soon after being collected (it keeps very badly because of the autodigestion of its gills and cap). It is often cultivated for consumption (Nowakowski *et al*. 2020).

HYGROCYBE PUNICEA (Fr.) Kummer

Pileus (Cap): 2–7.5 cm diam., conic to conico-convex or campanulate when young, surface orange red, scarlet, carrot red, fire red, orange yellow, light orange, smooth, greasy to viscid.
Lamellae (Gills): adnexed, becoming free, pale yellow, pastel yellow or yellowish white, thick and waxy
Stipe (Stalk): 3.5–9.5 cm × 3–17 mm, central, cylindric, orange red to deep yellow, chrome yellow, light yellow, white at the extreme base, slimy when wet
Context (Flesh): White, yellow to orange below cuticle
Annulus (Ring): none
Odour: Nil
Spore Print: White
Spores: White, 8.8–11.7 × 4.7–6.46 µm, ellipsoid, to elongate
Habitat: Solitary to scattered or in groups on ground among litter
Locality: Throughout Kerala
Season: April to July, August, October
Common name: Crimson waxcap/Scarlet waxcap
Status: Wild
Cultivation practices: Nil
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Nil
Methods of popularization/ palatability: Mild

Notes: Despite being edible, this quite large and attractive species is not very appealing because of its greasy and viscid cap (Pradeep *et al*. 1996, Arora 1986, McIlvaine & Macadam 1900).

HYMENOPELLIS RADICATA (Relhan) R.H. Petersen

Pileus (Cap): 2–10 cm diam., convex to applanate, umbonate, surface yellowish grey or paler to dark bistre brown, viscid and translucent striate when moist, sticky, ridged rugose at the centre.

Lamellae (Gills): Adnate, white or pale cream, broad, up to 10 mm thick

Stipe (Stalk): 5–8 cm × 5–10 mm, elongate, cylindric, tapers to both ends; base with a long root; surface similar in colour with the pileus, paler towards the cap, scaly

Context (Flesh): thin, white, unchanging

Annulus (Ring): Nil

Odour: Nil

Spore Print: White

Spores: 12–20 × 9–13 µm, ovoid to ellipsoid, hyaline smooth with a slightly thick wall

Habitat: Solitary in soil

Locality: Nelliyampathy, Palakkad Dt.; Munnar, Idukki Dt.; Thenmala, Kollam Dt.; JNTBGRI campus, Kallar, Thiruvananthapuram Dt.

Season: June to November

Common Name: Rooting shank

Status: Wild

Cultivation practices: No

Uses: Food

Parts used: Fruit body(Whole)

Processing technique: Dried

Existing value added products: Nil

Possibility of value added products: No

Methods of popularization/ palatability: Good

Notes: This moderately large edible species readily identified by its deeply rooted stalk. It is known for its high nutritional and medicinal value (Kasik 1994 & Thủy *et al*. 2023).

LACCARIA AMETHYSTINA Cooke

Pileus (Cap): l.7–5 cm diam., broadly convex to flat, often with a central depression, bright grayish purplish lilac, fading during loss of moisture
Lamellae (Gills): Subdecurrent, distant or nearly so, thick, waxy, dark purple 3 mm broad
Stipe (Stalk): 3.5–4.0 cm × 2–3 mm., central, cylindric, similar in colour with the cap or slightly paler, stuffed, becoming hollow with age, fibrous
Context (Flesh) thin, waxy, dark purple
Annulus (Ring): Nil
Odour: Nil
Spore Print: White
Spores: White, 6.7–8.3 × 6.3–8 µm, globose rarely subglobose, hyaline, inamyloid, echinulate
Habitat: Scattered in troops on forest soil
Locality: JNTBGRI campus, Kallar, Thiruvananthapuram Dt.; Nilambur, Malapputram Dt.; KFRI campus, Thrissur Dt.
Season: July to December
Common Name: Amethyst deceiver
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Nil
Palatability: Mild
Notes: It grows solitary to scattered on soil with a variety of deciduous and coniferous trees with which it forms mycorrhizal association. Though this species is edible, generally not considered a choice edible (Mueller 1984).

LACCARIA LACATA (Scop.) Cooke

Pileus (Cap): l–4.5 cm diam., convex becoming flat,often with a central depression; surface salmon pink, brick-red, or shades of orange or brown when moist and fades markedly when dry
Lamellae (Gills): Adnate, widely spaced, pinkish
Stipe: 5–10 cm × 6–10 mm, central, cylindric, fibrous
Context (Flesh): Reddish brown, thin
Annulus (Ring): Nil
Odour: Not distinct
Spore Print: White
Spores: White, 8–10 × 7.5–10 µm, globose, spiny
Habit: Solitary to scattered in groups in wooded areas on soil
Locality: Thenmala, Kollam Dt.; Eringol, Eranakulam Dt.; Muthanga, Ponkuzhy, Wayanad Dt.; Bonacad, Kallar, TBGRI Campus, Thiruvananthapuaram Dt.
Season: January to December
Common Name: The deceiver; Waxy Laccaria
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Nil
Palatability: Mild
Notes: It is a small edible mushroom found throughout in Kerala. *L. laccata* is mycorrhizal with several types of trees, including members of the Pinaceae and Dipterocarpaceae. Though small, the deceiver is edible and mild-tasting. It is one of many mushrooms traditionally eaten by the Zapotec people of Oaxaca in Mexico (Orijel 2007).

LENTINUS SAJOR-CAJU (Fr.) Fr.

Pileus (Cap**)**: 2.5–10.5 cm diam., funnel shaped; surface greyish white with brownish scales throughout; cap margin in rolled and wavy
Lamellae (Gills): Deeply decurrent, white, crowded
Stipe (Stalk): 1–5 cm × 10–26 mm, white lateral or excentric, solid, curved with an annulus in the middle or lower half
Context (Flesh): White, tough, leathery
Odour & Taste: Mild, good
Spore Print: White
Spores: White, 5.3–8.7 × 1.5–1.9 µm, ellipsoid
Habitat: In clusters and scattered on rotting or fallen tree
Locality: Nelliyampathy, Palakkad Dt.; Muthanga, Wayanadu Dt.; Kallar, JNTBGRI campus Thiruvananthapuram Dt.
Season: May, June to October
Common Name: White-rot Fungus
Status: Wild
Cultivation practices: No
Uses: Food and medicine.
Parts used: Fruit body(Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes, good for pickle, soup powder etc
Methods of popularization/ palatability: Cultivation/ Good

Note Notes: *Lentinus sajor-caju* is formerly known as *Pleurotus sajor-caju* is a widely consumed species in India (Purkayastha 1985, Varma *et al*. 1995). It is though edible,

LENTINUS SQUARROSULUS Mont.

Pileus (Cap): 2–7 cm diam., convex to applanate with a depressed at center, infundibuliform, with concentrically arranged off white to brownish scales crowded at center and scattered towards margin; surface white, with pale brown scales.
Lamellae (Gills): White, decurrent, up to 2 mm wide, crowded.
Stipe (Stalk): 3–7 cm × 10–20 mm, central to lateral, with white scales.
Context (Flesh): white, thin, tough to leathery.
Annulus (Ring): absent.
Odour: Mild, mushroomy
Spore Print: White
Spores: White, 5–8 × 1.5–3 µm, cylindrical, thin–walled, hyaline
Habitat: Mostly grow in large clusters on dead trees especially in Mango or Anacardiaceae members
Locality: Throughout Kerala
Season: May-August
Common Name: Nil
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Good.

Notes: *Lentinus squarrosulus* is an edible wild and cultivated mushroom that is generally consumed by the local/tribal people of Kerala. It grows naturally on old dead tree trunks of Mango and other Anacardiaceae trees. It is good to consume when young before maturing as it turn tough and leathery. It is nutritious with high in protein, minerals, carbohydrates, and B vitamins, and low in fat (Das & Samajpati 1998, Eziuche *et al*. 2024).

LEPISTA SORDIDA (Schumach.) Singer

Pileus (Cap): 2–6 cm diam., initially convex sometimes with a slight umbo, gradually flattens while retaining a central bump, flattening out or developing a central depression at maturity, surface violet, sometimes with brownish, smooth without any scales; pileus margin wavy and in rolled
Lamellae (Gills): Sinuate to adnexed, greyish lilac fading with age, crowed
Stipe (Stalk): 2–4 cm × 4–10 mm, cylindrical to compressed, solid, fibrillose, lilac
Context (Flesh): smooth, firm, white with violet hues
Annulus (Ring): Nil
Odour & Taste: Strong fungal; taste pleasant
Spore Print: Creamy-white
Spores: 6–9 × 4–5µm, ellipsoid, inamyloid, ornamented with tiny spines
Habitat: Gregarious, scattered on soil
Locality: JNTBGRI campus,Thiruvananthapuram Dt.; Chithara, Thenmala, Kollam Dt.; KFRI campus, Thrissur Dt.
Season: July to August
Common Name: Sordid blewit
Status: Wild
Cultivation practices: No
Uses: Food and medicine
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Nil
Methods of popularization/ palatability: Cultivation/Good

Notes: Despite being an edible fungus, *Lepista sordida* is not often sought for its culinary qualities. Only when cooked properly can these mushrooms be eaten and never eat them raw. The species is cultivated in Thailand (Thongbai *et al*. 2017).

MACROCYBE CRASSA (Sacc.) Pegler & Lodge

Pileus (Cap): 8–30 cm diam., large, fleshy, convex to applanate, surface chalky white, smooth and glabrous; margin lobate, in rolled
Lamellae (Gills): Adnexo-adnate to sinuate, creamy white with a pinkish tinge up to 12 mm thick
Stipe (Stalk): 7–14 cm × 20–80 mm, thick, central, rarely excentric, cylindric to obclavate, often with swollen base, solid; white, smooth or sometimes disrupting into small reflex squamules in dry weather
Context (Flesh): Thick, fleshy, white
Annulus (Ring): Nil
Odour: Strongly cyanic
Spore Print: Pale cream to cream
Spores: Cream, 5.5–6.6 × 4.5–5 µm, ovoid to ellipsoid, hyaline
Habitat: Solitary or scattered in groups on soil
Locality: Sankili, Kollam; Kudappanakunnu, Poojappura, JNTBGRI campus, Thiruvananthapuram
Season: January to November
Common Name: Nil
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body(Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes, Pickle
Methods of popularization/ palatability: Cultivation/Good

Notes: *Macrocybe crassa* is native to Sri Lanka, India (Kerala), Thailand and Malaysia. This large white mushrooms can weigh up to 1.25 kg with large caps up to 40 cm diameter. This species is widely consumed in many parts of India.

MACROCYBE TITANS (H.E. Bigelow & Kimbr.) Pegler, Lodge & Nakasone

Pileus (Cap): 5–13 cm diam., hemispheric at first, convex and then plano-convex often with a broad obtuse umbo, surface buff-ochre with a darker centre, brown leather brown, paler or even more whitish elsewhere towards the margin; pileus margin incurved and in rolled at first undulate or lobed later

Lamellae (Gills): Sinulate, whitish or with pale brown tints, up to 8 mm wide, crowded

Stipe (Stalk): 10–26 cm × 15–40 mm, central, cylindric to clavate, solid, curved, swollen at the base; surface whitish or with brown tints fibrillose with appressed to recurved squamules at the extreme apex

Context (Flesh): thick, flesy, white up to 23 cm thick

Odour & Taste: Mild; taste good

Spore print: Pale cream to cream

Spores: 5.6–6 × 3.5–64.5 µm, ovoid to short ellipsoid smooth, inamyloid

Habitat: Solitary or scattered in tufts on soil

Locality:Venjaramoodu, Kilimanoor, JNTBGRI campus, Ploade, Thiruvananthapuram Dt.; Chithara, Kollam Dt.; Kodakara, Thrissur Dt.

Season: May, September to November

Common Name: Nil

Status: Wild

Cultivation practices: No

Uses: Food

Parts used: Fruit body (Whole)

Processing technique: Nil

Existing value added products: Nil

Possibility of value added products: Yes

Methods of popularization/ palatability: Cultivation/Good

Notes: *Macrocybe titans* is one of the largest gilled mushroom and is reported to be edible (Kimbrough 2000; Bessette *et al*. 2007). It can occur alone or in small clusters of 2–3 mushrooms but sometimes grow in dense clusters of up to 10 fruiting bodies.

MACROLEPIOTA DOLICHAULA (Berk. & Broome) Pegler & R.W. Rayner

Pileus (Cap): 6–16 cm diam., fleshy, campanulate when young, become convex to plano-convex with age, with a low umbo at disc; surface pure white to whitish, covered with brownish to brownish granular scales, which become minute and sparse towards the cap margin
Lamellae (Gills): White when young, white to cream when mature, crowded
Stipe (Stalk): 7–24 cm × 8–25 mm, twice as long as the diameter of the cap, white to whitish, stains slightly brown, cylindrical, with minute farinose granules, base slightly enlarged, hollow, brittle
Context (Flesh): White, sometimes becoming orange when cut
Annulus (Ring): Ascending, double, whitish, membranous, movable
Odour: Nil
Spore Print: White
Spores: White, 12.5–16 × 8.0–10.5 (–12) µm, ovoid to ellipsoid, thick-walled, dextrinoid, metachromatic in cresyl blue with a germ pore
Habitat: Solitary to scattered on soil
Locality: Thenmala, Kollam Dt.
Season: September to December
Common Name: White parasol mushroom
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Palatability: Good
Notes: Some of the key features of this species are the large size and long stem, often twice as long as the diameter of the cap, stains slightly brown, large floppy, movable 'double' ring and the white spore print. It is widely consumed in China, India and northern Thailand as seasonal delicacies (Leela *et al*. 2016).


MACROLEPIOTA PROCERA (Scop.) Singer

Pileus (Cap): 8–23 cm diam., convex to broadly convex to almost plane when mature, white to cream, covered with brown, dark brown to grayish brown plate like squamules irregularly arranged towards the margin, below a whitish surface, dark brown in the centre
Lamellae (Gills): White when young to cream when mature, free, crowded
Stipe (Stalk): 17–33 cm × 10–24 mm, whitish, cylindrical, very fibrous covered with brown squamules sometimes in irregular bands
Context (Flesh): White, firm, up to 10 mm wide, thick
Annulus (Ring): Superior, movable, underside brownish, upper side whitish
Odour: Nil
Spore Print: White
Spores: White, 10–16 × 9–13 µm, broadly elliptical with a small germ pore, thick-walled, dextrinoid
Habitat: Scattered on soil
Locality: JNTBGRI campus, Palode, Thiruvananthapuram Dt.; Chembotty, Wayanad Dt.
Season: October to December
Common Name: Parasol mushroom.
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Good
Notes: *Macrolepiota procera* is an edible mushroom that can be eaten raw. Its large size and seasonal recurrence contribute to its popularity and high demand throughout Europe. Although the cap can be consumed in a variety of ways, the bulb and the hollow fibrous stem are frequently not used. They can, however, be dried and processed into mushroom powder to add to sauces, stews and soups (Phillips 2010; Miller Jr. *et al.* 2006). It is infrequently observed in Kerala.

OUDEMANSIELLA CANARII (Jungh.) Höhn.

Pileus (Cap): 1–9 cm diam., convex then applanate, surface white with a darker centre, becoming paler, smooth, slimy
Lamellae (Gills)**:** Adnexed to adnate, white
Stipe (Stalk): 1–6 cm × 1.5–8 mm, central, cylindric, solid, surface white shiny
Context (Flesh) white, soft
Annulus (Ring): Nil
Odour: Mild, agreeable
Spore Print: White
Spores: White, 15–24 × 12–40 µm, globose to subglobose, inamyloid, smooth
Habitat: Scattered in groups on dead fallen trees and rotting wood
Locality: Throughout Kerala
Season: January to December
Common Name: Nil
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: No
Methods of popularization/ palatability: Cultivation/Mild

Notes: It is an edible white, pileate stipitate mushroom that grows on wet, fallen and decomposing logs. Despite being edible, its slimy fruit body makes it not the best option.

PANUS NEOSTRIGOSUS Drechsler-Santos & Wartchow

Pileus (Cap): 2–7 cm diam., convex with a depressed or vase-shaped centre, tongue-shaped to irregular, densely hairy, surface purple at first, but soon fading to reddish brown, pinkish brown, orangish brown or tan
Lamellae (Gills): Purplish when fresh and young, eventually white, decurrent, crowded
Stipe (Stalk): 1–2 cm × 5–10 mm, sub-centric to lateral, densely hairy, similar in colour with the pileus
Context (Flesh): white, tough and stringy.
Annulus (Ring): Nil
Odour & Taste: Mild
Spore Print: White
Spores: White, 4–5.5 × 1.5–2 µm, cylindric to ellipsoid
Habitat: Solitary or in clusters on dead wood
Locality: JNTBGRI campus; Karakulam, Thiruvananthapuram Dt.
Season: January to December
Common Name: Nil
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Mild

Notes: It is edible when young but becomes very tough with age (Miller Jr. *et al.* 2006). Despite being edible, it's tough, hairy fruit body makes it not the best option.

PHLEBOPUS PORTENTOSUS (Berk. & Broome) Boedijn

Pileus (Cap): 8–24 cm diam., convex becoming plano-convex, often with a shallow depression at the centre. Surface initially olive brown to sepia brown at the centre, paler towards the periphery, slimy when wet, smooth and glabrous
Hymenophore tubulate (not lamellate), adnexed to adnate, lemon yellow, up to 14 mm long, darkening on cutting, pores greenish yellow with a brownish tinge, up to 0.8 mm diam., bluing when injured or rubbed
Stipe (Stalk) 6–17 cm × 40–80 mm, central, robust, clavate with swollen base, solid. Surface colour similar to the pileus, discolouring henna when bruised or touched
Context (Flesh): Up to 5 cm thick, spongy, butter yellow/sun yellow/sulphur yellow, bluing on bruising or cutting when fresh and young
Annulus (Ring): Nil
Odour: Pleasant
Spore Print: Olivaceous brown
Spores: Olivaceous, 6–9.5 × 4.5–7.5 µm, ovoid to short ellipsoid
Habitat: Solitary to scattered on ground
Locality: Throughout Kerala
Season: January to December
Common Name: Tropical black bolete.
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Nil
Methods of popularization/ palatability: Cultivation/Good
Notes: The tropical black bolete, or *Phlebopus portentosus*, is a common edible fungus that grows in tropical areas of Asia, America, and Oceania. This species is being consumed by the trbies in Thiruvananthapuram and Wayanad districts. The only species in the Boletales in the Boletales order that is successfully cultivated (Kumla *et al*. 2012).

PLEUROTUS DJAMOR (Rumph. ex Fr.) Boedijn

Pileus (Cap): 1.5–7 cm diam., orbicular, reniform to irregularly flabelliform, rarely with an excentric to central stipe. Surface pinkish red becoming pale pink with age, smooth, shiny
Lamellae (Gills): Pink, crowded, decurrent
Stipe (Stalk): Lateral, reduced or absent
Context (Flesh): Pink, soft
Annulus (Ring): Nil
Odour: Mild; taste good
Spore Print: White
Spores: White, 5.2–7.9 × 3.5–4.9 µm, oblong cylindric, smooth
Habitat: In clusters or scattered on rotting or fallen tree
Locality: Throughout Kerala
Season: May to October
Common Name: Pink Oyster mushroom
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried /powdered
Existing value added products: Mushroom powder
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Excellent

Notes: This widespread edible and cultivated fungus is commonly referred to as Pink *Pleurotus*. Compared to other mushrooms, pink oyster mushrooms have higher potassium and vitamin C contents (Singh *et al*. 2018). It can be grown on a range of agricultural waste, including wheat/paddy straw, tea leaves, and barley straw. Best when young before becoming tough and leathery.

PLEUROTUS FLABELLATUS Sacc.

Pileus (Cap): 1.5–12 cm diam., orbicular, reniform to irregularly flabelliform, rarely with an excentric to central stipe. Surface pure white becoming yellowish white with age, smooth, shiny
Lamellae (Gills): White, crowded, decurrent
Stipe (Stalk): reduced or absent
Context (Flesh): white, soft
Annulus (Ring): Nil
Odour: Mild; taste excellent
Spore Print: White
Spores: White, 7–8.5 × 4–5 µm, oblong cylindric, smooth
Habit: In clusters and scattered on rotting or fallen tree
Locality: Throughout Kerala
Season: January to December
Common Name: Oyster mushroom
Status: Wild.
Cultivation practices: Yes
Uses: Food.
Parts used: Fruit body(Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Excellent

Notes: This large white *Pleurotus* species are quite common in the forests and also commercially cultivated. This large white species is found on dead fallen trees and logs.


PLEUROTUS GIGANTEUS (Berk.) Karunarathna & Hyde

Pileus (Cap): 6–31 cm diam., convex to applanate becoming slightly depressed in the centre. Surface initially uniformly dark, fuscous brown, fuliginous or black, then fading with age to pale ochraceous or yellowish brown, with a darker centre, dry, disrupted into small, indefinite, squamules
Lamellae (Gills): moderately crowded, decurrent, white to cream
Stipe (Stalk): 5–20 cm × 70–100 mm, fusiform, with a radicating base, solid
Context (Flesh): 5–10 mm thick white
Annulus (Ring): Nil
Odour &Taste: Mild; taste excellent
Spore Print: White
Spores: White, 7–9 × 6–7 μm, broadly ellipsoid to ellipsoid, inamyloid
Habitat: In groups and scattered on soil or on base of rotting trees or tree stumps.
Locality: JNTBGRI campus, Palode, Thiruvananthapuram Dt.
Season: January to December
Common Name: Giant oyster mushroom
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Ecellent

Notes: This is one of the largest edible *Pleurotus* species which can be found either in groups or solitary on soil and buried woods. This large *Pleurotus* has been consumed by the indigenous people in Peninsular Malaysia, China and are now under cultivation in many countries (Phan *et al*. 2018).

PLEUROTUS OSTREATUS (Jacq. Fr.) Kumm

Pileus (Cap): 3–12 cm diam., broadly convex, becoming flat or shallowly depressed; fan or oyster-shaped; surface greyish brown, darkening to umbrinous at the centre although sometimes remaining very pale, pale to dark brown, fading to buff, glabrescent, slightly viscid when moist
Lamellae (Gills): White or with a gray tinge, 3-6 mm wide, descend on the stalk if present, crowded
Stipe (Stalk): Rudimentary or nearly absent and lateral, if present lateral, short, solid, white
Context: White, up to 5 mm thick, thin elsewhere, soft, fleshy
Annulus (Ring): Nil
Odour: Mild, mushroomy; taste excellent
Spore Print: White
Spores: White, 7–11 × 2–4 µm; cylindric-ellipsoid, smooth, hyaline, inamyloid
Habitat: In groups on dead wood
Locality: Nelliyampathy, Palakkad Dt.; Kallar; JNTBGRI campus, Thiruvananthapuram Dt.
Season: June- December
Common Name: Oyster Mushroom
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Cultivation/Excellent
Notes: This oyster mushroom is a choice edible and is a delicacy. The oyster mushroom is best when picked young as the mushroom ages, the flesh becomes

PLEUROTUS TUBER-REGIUM (Fr.) Singer

Pileus (Cap): 4.2–19 cm diam., infundibuliform (funnel shaped), leathery; surface yellowish white or pale yellow with brown pruinae, dense at centre, scarce towards margin; pileus margin straight, undulating, entire to incised
Lamellae (Gills): Deccurent, white, 3-6 mm wide, crowded
Stipe (Stalk): 2–6 cm × 6–11 mm, eccentric, equal or slightly tapering downwards, curved, solid, leathery; surface white with brown erect squamules throughout
Context (Flesh): off white, up to 1.5 cm thick, tough, leathery
Annulus (Ring): Nil
Odour: Mild
Spore Print: White/Cream
Spores: 7–9.5 × 3–4.5 µm, elongate ellipsoid to cylindric, hyaline
Habitat: Caespitose on decaying angiosperm wood
Locality: JNTBGRI campus, Palode, Thiruvananthapuram Dt.
Season: June to September
Common Name: King tuber mushroom
Status: Wild
Cultivation practices: Yes
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Mild.

Notes: *Pleurotus tuber-regium* is an edible mushroom that is used both as food and medicine in Africa (Isikhuemhen & LeBauer (2004). Although, like other *Pleurotus* species, the species can be economically grown in a variety of agro wastes, however, industrial production is not yet widespread.

PLUTEUS CERVINUS (Schaeff.) P. Kumm.

Pileus (Cap): 3–8 cm diam., conical then convex to plane, with a broad umbo; surface greyish brown, darkening to umbrinous at the centre although sometimes remaining very pale, radially fibrillose, slightly greasy when moist
Lamellae (Gills): Free, cream to flesh-pink, 3-6 mm wide, crowded
Stipe (Stalk): 2–12 cm × 8–20 mm, cylindrical or expanding slightly at ground level, solid; surface whitish to cream colour
Context (Flesh): White, up to 1.5 cm thick, white
Odour & Taste: Not distinct; taste mild
Spore Print: Pink
Spores: Pinkish, 5.5–7.5 × 3.7–4.5 µm, ovoid to ellipsoid
Habitat: Solitary or in groups dead decaying wood
Locality: Munnar, Idukki Dt.; Silent Valley National Park, Palakkad Dt.
Season: June to August
Common Name: Deer mushroom
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Mild.
Notes: Deer mushrooms, which grow on dead or decaying hardwood are edible. The mushroom may grow alone or in sporadic clusters. Although they are believed to be delicious when young, some people believe they are of low quality and are rarely gathered for the table (Boa 2004). It is rare in Kerala and not being consumed in the State.

RUSSULA ACICULOCYSTIS Kauffman ex Bills & O.K. Mill.

Pileus (Cap): 3.5–8 cm diam., convex to broadly convex, then plane with a central depression, surface greyish red, brownish red, dull red, reddish lilac or sometimes pink, with a greyish rose, greyish ruby, dark, violet or greyish magenta, centre, sticky when wet

Lamellae (Gills): Adnate, yellowish white up to 1 cm wide, ventricose, sub-crowded, lacking lamellulae, sometimes bifurcating near to the stipe

Stipe (Stalk): 2–5 cm × 5–20 mm, central, cylindric, equal, or slightly attenuated below; surface white, sometimes pastel red to pale red or with a reddish pink to greyish red tinge, more often entirely pink

Context (Flesh): White

Annulus (Ring): Nil

Odour: Mild

Spore Print: Cream

Spores: Cream, 6.5–7.5 × 6–7.5 µm, subglobose to broadly ovate, ornamentation with amyloid, conical to irregular ridges or wings connected by thick lines or ridges forming a complete reticulum

Habitat: Solitary to scattered on soil under *Myristica malabarica*, *Vateria indica* and *Calophyllum apetalum*

Locality: Kallar, JNTBGRI Canpus, Thiruvananthapuram Dt.

Season: April- December

Common Name: Nil

Status: Wild

Cultivation practices: Nil

Uses: Food

Parts used: Fruit body (Whole)

Processing technique: Nil

Existing value added products: Nil.

Possibility of value added products: Yes

Methods of popularization/ palatability: Nil/Mild.

Notes: This edible *Russula* is having mild to acrid taste, flesh firm when young, brittle in age, not discolouring (Montoya-Esquivel, 1998, Boa 2004). Though edible, people are not aware about its edibility and occuerence.

RUSSULA CONGOANA Pat.

Pileus (Cap): 2–5 (–8) cm, first convex then expanded with a shallow central depression. Surface pastel red to greyish red, sulcate-striate up to three-fourth of pileus radius, shiny and lubricous when wet

Lamellae (Gills): Adnexed, white, cream or pale yellow when mature, close to crowded, without lamellulae, interveined, rarely bifurcate towards the margin

Stipe (Stalk): 1.5–5 × 5–10 mm, central, cylindric, slightly bulbous or with an attenuated base, brittle; surface creamy white with a pinkish tinge at the base.

Context (Flesh): White, thick, soft

Annulus (Ring): Nil

Odour: Mild

Spore Print: White/Cream

Spores: White, 6–8.5 × 6–7 µm subglobose to ellipsoid, mostly broadly ellipsoid, densely ornamented with coarse, amyloid, verrucae, interconnected by an incomplete to almost complete reticulate

Habitat: Solitary to scattered on soil under Dipterocarpaceae trees

Locality: Muthanga, Wayanadu Dt.; Thenmala, Kollam Dt.

Season: April; August to October

Common Name: Nil

Status: Wild

Cultivation practices: Nil.

Uses: Food

Parts used: Fruit body (Whole)

Processing technique: Nil

Existing value added products: Nil.

Possibility of value added products: Nil

Methods of popularization/ palatability:Nil/Mild.

Notes: This species is consumed by the people in Zimbabwe. It can be easily identified in the field by its bright colour (Härkönen *et al*. 2003). This species is also rarely encountered in the State.

RUSSULA MARIAE Peck

Pileus (Cap): 4.5–5 cm diam., convex becoming broadly convex to flat with a shallow depression; surface brownish violet, red towards the margin, slimy in wet weather; margin radially striate to sulcate up to halfway

Lamellae (Gills): Adnate to sub-decurrent, white becoming yellowish white, crowded, often dichotomously branched, intervenose, without lamellulae

Stipe (Stalk): 2.5–3 × 5–10 mm, central, cylindric; surface pink whitish towards the base, minutely pruinose to finely scurfy towards apex

Context (Flesh): White, thin, brittle

Annulus (Ring): Nil

Odour: Mild

Spore Print: Pale yellow/Cream

Spores: Cream, 6.6–8 × 6–8 µm, globose to subglobose, with amyloid irregular large verrucae, connected by fine connectives forming a partial to complete reticulum

Habitat: Solitary on forest soil among fallen leaves

Locality: JNTBGRI Campus, Palode, Thiruvananthapuram Dt.

Season: May to December

Common Name: Purple-bloom Russula

Status: Wild

Cultivation practices: No

Uses: Food

Parts used: Fruit body(Whole)

Processing technique: Dried

Existing value added products: Nil

Possibility of value added products: Yes

Methods of popularization/ palatability: Mild.

Notes: This mycorrhizal species forms symbiotic relationship with local trees. Compared to other edible Russulas, this one has a mildly acrid taste and is not as flavourful as other edible Russulas (Boa 2004).

STROBILOMYCES STROBILACEUS (Scop.) Berk.

Pileus (Cap): 6–20 cm hemispherical when young expanding convex, surface is covered with dark grey to black erect scales
Hymenophore: Poroid (not lamellate), whitish, bruising red to blackish
Stipe (Stalk): 8–11 cm × 10–20 mm, cylindrical, fibrillose or floccose, similar in colour with the pileus, covered with woolly scales
Context (Flesh): Initially white turning pinkish to red and finally to blackish on cutting
Annulus (Ring): Nil
Odour & Taste: Mild, not distinctive; taste good
Spore print: Brown to blackish
Spores: Brown, 10–12 × 9–11 µm, brown, subglobose with reticulate ornamentation
Habitat: Solitary on soil
Locality: Muthanga, Waynad Dt.; JNTBGRI campus, Palode, Thiruvananthapuram Dt.
Season: May to August
Common Name: Old man of the woods
Status: Wild.
Cultivation practices: No
Uses: Food
Parts used: Fruit body(Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Nil
Methods of popularization/ palatability: Excellent

Notes: The immature fruiting bodies are said to have an excellent taste and are edible. Despite being edible, it has minimal culinary value (Pegler 1981; McIlvaine & Macadam 1900; Miller Jr. *et al*. 2006).

TERMITOMYCES CLYPEATUS R. Heim

Pileus (Cap): 2.5–9 cm, at first pointed-conical, later expanding to convex but retaining a prominent dark spiniform umbo, surface grayish brown to ochraceous brown, paler to the margin, silky smooth, becoming fibrillose rimose on expansion and drying; pileus margin incurved irregularly lobed and fissile
Lamellae (Gills): Free, whitish to pink, up to 8 mm broad, crowded
Stipe (Stalk): 2–12 cm × 5–10 mm., central, cylindric, tapering below to a long (3–12 cm) root (pseudorrhiza), solid
Context (Flesh): White, up to 10 mm thick, soft
Annulus (Ring): Nil
Spore Print: Pink
Spores: Pink, 4.5–8 × 3–5 µm, ovo-ellipsoid
Habitat: Solitary to ground on termite mount
Locality: Throughout Kerala
Season: June
Common Name: Nil
Status: Wild
Cultivation practices: Nil
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Nil/Excellent.
Notes: This species is widely distributed in southeast Asia and equatorial Africa and is an excellent edible. Locals around Kerala gather and eat it when it is particularly plentiful during the rainy season.

TERMITOMYCES EURRHIZUS (Berk.) R. Heim

Pileus (Cap): 6–19 cm diam., initially conic, becoming convex, to finally applanate with a sharp umbo, often splitting variously; surface greyish brown with brownish centre
Lamellae (Gills): White, turning light pink, free to sub-adnate
Stipe (Stalk): 5–20 cm × 15–30 mm, stout, solid, white, fleshy-fibrous, ending in a short root (Pseudorhiza)
Context (Flesh): Whitish, firm
Annulus (Ring): Nil
Odour & Taste: Pleasant; taste excellent
Spore Print: Pink
Spores: Pink, 6.8–9.3 × 5.1–6.8 µm, ovoid to ellipsoid
Habitat: Solitary on soil in association with termite colony
Locality: Throughout Kerala
Season: May to November
Common Name: Nil
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body(Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Nil/Excellent
Notes: *Termitomyces eurrhizus* is widely prevalent and has been found in Malaysia, southwestern China, India, Sri Lanka, Burma, and Pakistan. The mushrooms emerge from termite mounds, just like other species in the genus and is consumed by the locals in the State.

TERMITOMYCES HEIMII Natarajan

Pileus (Cap): 5–16 cm diam., convex to plano-convex with a broad umbo at the centre, surface silky white with a greyish centre, smooth slimy when wet.
Lamellae (Gills): White turning pink free
Stipe (Stalk): 6–15 cm × 10–20 mm, central cylindric, firm solid surface white, smooth to sub-squamulose below the annular region, tapering down to a long white cylindrical root (Pseudorhiza)
Context (Flesh): Whitish, soft
Annulus (Ring): Present, superior, white, attached to the upper part of the stipe
Odour & Taste: Mild, agreeable; taste excellent
Spore Print: Pink
Spores: Pink, 4–6.5 × 3.5–5 µm, ovoid to ellipsoid
Habitat: Gregarious on soil in association with termite colony
Locality: Throughout Kerala
Season: June to October
Common Name: Nil
Status: Wild
Cultivation practices: No
Uses: Food
Parts used: Fruit body(Whole.
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Excellent
Notes: It is found in forests, as well as in gardens, orchards and pastures where *Odontotermes* termites are prevalent. It grows in clusters, frequently numbering over 100 specimens and is rooted in a single termite nest. Many people regard *Termitomyces heimii* to be one of the most desirable wild mushrooms. It is mostly gathered and traded in China, India, Malaysia, and Nepal (Pegler & Vanhaecke1994; Christensen *et al.* 2008).


TERMITOMYCES MICROCARPUS (Berk. & Broome) R. Heim

Pileus (Cap): 5–19 mm diam., pure silky white, initially conic, becoming convex, conico-convex, finally plane often with a papillate umbo
Lamellae (Gills): **W**hite, turning light pink, free to adnexed, crowded
Stipe (Stalk): 6–8 cm × 1–2 mm, slender, hollow, white, fleshy-fibrous without a pseudorhiza (root)
Context (Flesh): White, thin, soft
Annulus (Ring): Nil.
Odour &Taste: Pleasant; taste excellent.
Spore Print: Pink
Spores: Pink, 5–5.5 (6) × 3–3.5 (4.5) µm, ovoid to ellipsoid
Habitat: Gregarious on soil in association with ejected termite colony
Locality: Throughout Kerala
Season: May to November
Common Name: Nil
Status: Wild
Cultivation practices: Nil
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Excellent.
Notes: One of the smallest species in the genus *Termitomyces*, it grows gregariously and is identified by its white basidiomes that lack a root (pseudorhiza) and is an excellent edible species. In Uganda, *Termitomyces microcarpus* is consumed in large quantities, in part due to their flavour and taste as well as its apparent therapeutic properties (Nabubuya *et al.* 2010).

TERMITOMYCES MICROCARPUS (Berk. & Broome) R. Heim

Pileus (Cap): 1–3 cm diam., conico-convex to plane with a sharp small umbo; surface greyish white with a brownish centre
Lamellae (Gills): White, turning light pink sub-free to adnexed, thin
Stipe (Stalk): 4–10 cm × 3–5 mm, slender, hollow, white, fleshy-fibrous.
Pseudorhiza (Root): absent
Context (Flesh): whitish, soft
Annulus (Ring): Nil
Odour & Taste: Pleasant; taste excellent
Spore Print: Pale pink
Spores: Light pinkish, 6–8.5 × 3.7–4.8 µm, ovoid to ellipsoid
Habitat: Gregarious on soil in association with termite colony
Locality: Throughout Kerala
Season: May to November
Common Name: Nil
Status: Wild
Cultivation practices: No
Uses: Food.
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Excellent .
Notes: An excellent edible species has notably small fruiting bodies with cap of 2–3 cm diameter. This fungus frequently occurs over large areas where termites have been active. Widely consumed by the people across the state.

TERMITOMYCES RADICATUS Natarajan

Pileus (Cap): 1.5–3.5 cm diam., convex to plano-convex with a spiniform umbo; surface pale orange to greyish brown, dark brown at the centre, smooth, finely striate
Lamellae (Gills): White turning pink, free to adnexed, up to 4 mm broad
Stipe (Stalk): 4.5–6 cm × 2–5 mm., cylindrical, solid tapering to a small root (pseudorhiza); surface off-white to pale orange
Context (Flesh): White, thin
Annulus (Ring): Nil
Odour: Not distinct
Spore Print: Pale pink
Spores: Pinkish, 5.5–8 × 3.5–5 µm, ovoid to ellipsoid
Habitat: Solitary to scattered on ground on termite mount
Locality: JNGTBGRI campus, Palode, Thiruvananthapuram Dt.
Season: June to December
Common Name: Nil
Status: Wild
Cultivation practices: Nil
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Nil
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Excellent.
Notes: This edible species is collected and consumed by the local people throughout the State and a popular seasonal delicacy.

VOLVARIELLA BOMBYCINA (Schaeff.) Singer

Pileus (Cap): 7.5–20 cm diam., initially oval or egg shaped, later the cap expand to convex to planoconvex and finally flattened when mature; surface white to yellowish white, silky, fluffy
Lamellae (Gills): White to pink, free, 10 mm broad, crowded
Stipe (Stalk): 7–15 cm × 6–20 mm, central, cylindrical, solid, firm, almost glabrous, thick; surface white and smooth
Context (Flesh): White, thick
Annulus (Ring): Nil
Volva: Stipe base encased in a sac like volva, cuplike, white with brown patches, lobed
Odour & Taste: Pleasant; taste excellent
Spore Print: Pink to pinkish brown
Spores: Pink, 6.6–8.5 × 4.5–5 µm, ellipsoid, thick-walled
Habitat: Grow singly or in small groups on trunks and decayed stumps
Locality: Nelliyampathy, Palakkadu Dist.
Season: June to August
Common Name: Silky Volvariella mushroom, tree mushroom
Status: Wild
Cultivation practices: Nil
Uses: Food
Parts used: Fruit body (Whole)
Processing technique: Dried
Existing value added products: Nil
Possibility of value added products: Yes
Methods of popularization/ palatability: Good.
Notes: The fruit bodies are large, edible and usually considered of good quality with excellent taste (Fischer & Bessette 1992).

VOLVARIELLA VOLVACEA (Bull.) Singer

Pileus (Cap): 2.5–5 cm diam., initially egg shaped and on expanding to convex or broadly conic to flat with a broad ubmo at the centre; surface greyish, blackish brown near centre, slightly slimy when wet.

Lamellae (Gills): White when young become pink when mature, free from the stipe, crowded, up to 4 mm wide

Stipe (Stalk): 3–7cm × 5–10 mm, cylindrical expanded at the bottom, whitish or brownish

Context (Flesh): White, soft, thick

Annulus (ring): Nil

Volva: Present, sac like at the base of the stipe, brownish grey to nearly black above and whitish below, thick, lobed

Odour & Taste: Likes moist straw; Taste excellent

Spore Print: Pink

Spores: Pink, 4.6–5.8 × 7–8.5 µm, ellipsoid to elongate or somewhat ovoid

Habitat: Solitary to gregarious on paddy straw, or on rubbish heap

Locality: Kulathupuzha, Kollam Dt.; JNTBGRI Campus; CPCRI Campus Palode, Thiruvananthapuram Dt.

Season: June-October

Common Name: Paddy straw mushroom, straw mushroom.

Cultivation practices: Yes

Uses: Food

Parts used: Fruit body (Whole)

Processing technique: Dried

Existing value added products: Nil

Possibility of value added products: Yes

Methods of popularization/ palatability: Cultivation/Excellent.

Notes: Paddy straw mushrooms, sometimes known as straw mushrooms, are widely used in Asian cooking. In areas where they are grown, they are usually sold fresh, while in other places, they are more commonly found dried or canned. Straw mushrooms rank third in terms of consumption worldwide (Chang *et al.* 1982).

Objective-III

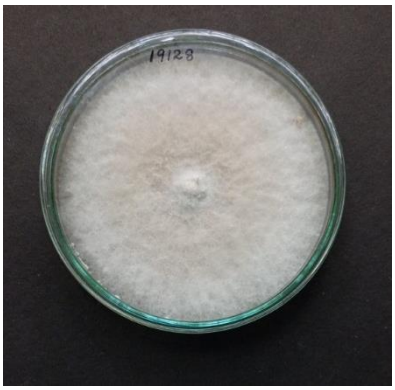
Conservation

To ensure the *ex-situ* conservation of edible mushrooms collected during the study period, pure cultures were developed using Potato Dextrose Agar (PDA) medium under sterile laboratory conditions. All specimens collected were subjected to culture trials in an effort to establish and maintain viable mycelial cultures. Despite multiple attempts, pure cultures could not be obtained for certain species due to contamination, slow growth, or unfavorable growth characteristics. Nevertheless, pure cultures of the following species were successfully isolated and are currently preserved under standard laboratory conditions for future research and conservation purposes.

List of species:

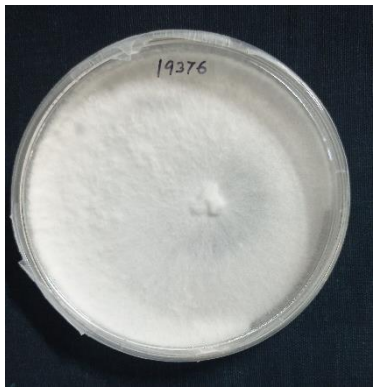
1. *Amanita hemibapha*
2. *Coprinopsis cinerea*
3. *Lentinus sajor-caju*
4. *Lentinus squarrosulus*
5. *Macrocybe titans*
6. *Oudemansiella canarii*
7. *Phlebopus portentosus*
8. *Pleurotus djamor*
9. *Pleurotus flabellatus*
10. *Pleurotus giganteus*
11. *Pleurotus ostreatus*
12. *Russula aciculocystis*
13. *Strobilomyces strobilaceus*
14. *Termitomyces clypeatus*
15. *Termitomyces eurrhizus*
16. *Termitomyces radicatus*

Amanita hemibapha



Coprinopsis cineria

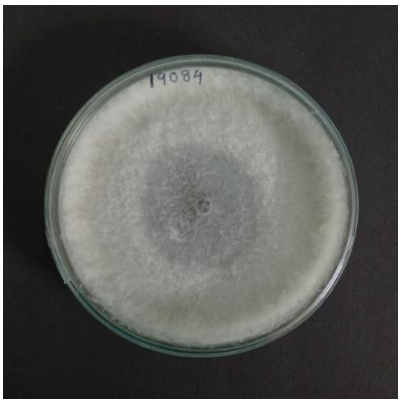
Lentinus sajor-caju



Lentinus squarrosulus

Macrocybe titans

Oudemanseilla canarii

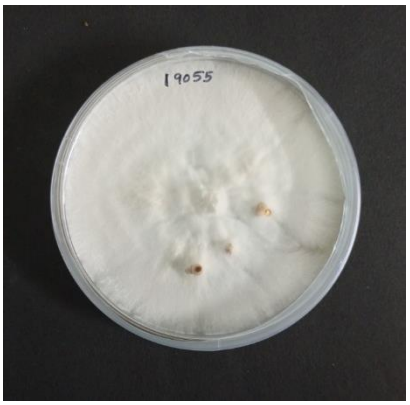


Phlebopus portentosus

Pleurotus flabellatus

Pleurotus djamor

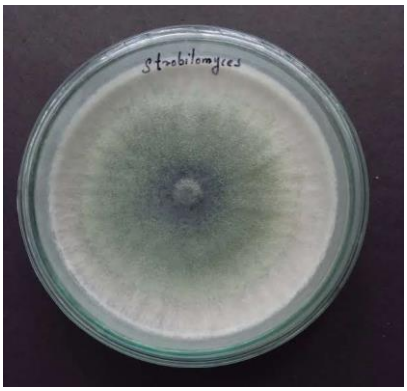
Pleurotus giganteus



Pleurotus ostreatus

Russula aciculocystis

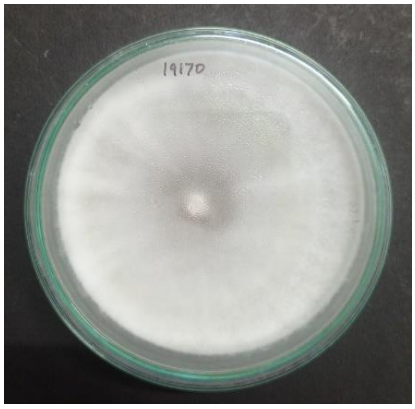
Strobilomyces strobilaceus



Termitomyces clypeatus

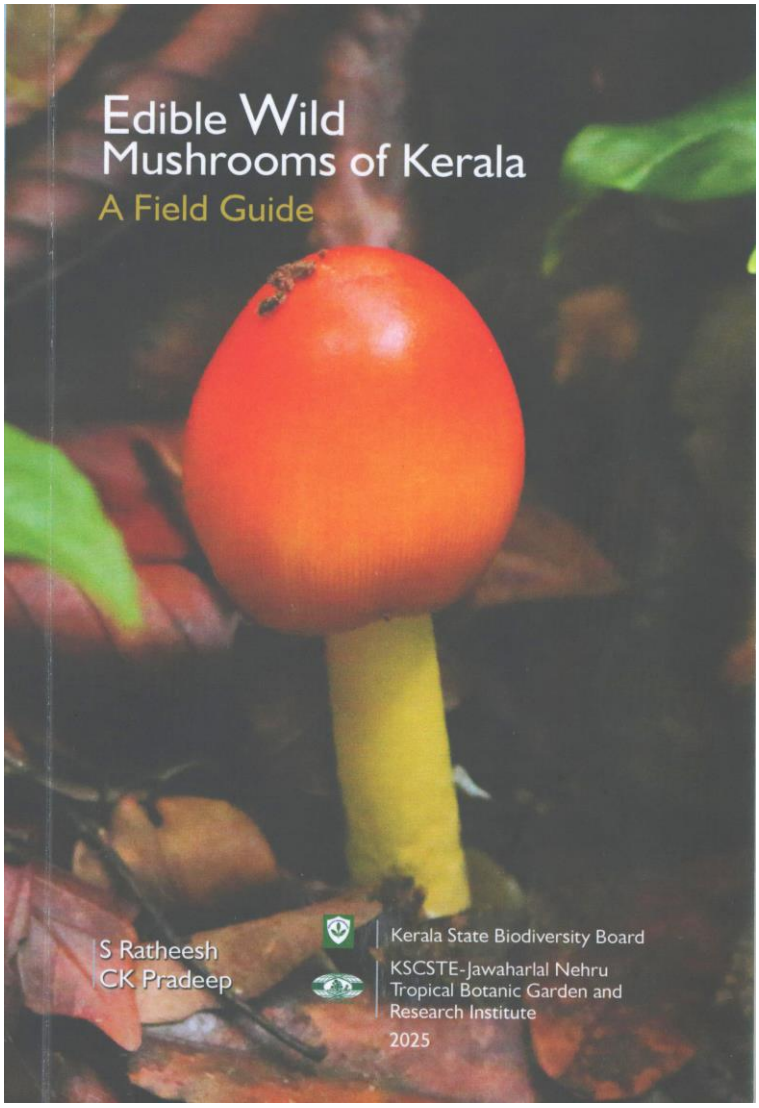
Termitomyces eurrhizus

Termitomyces radicatus



Publication

One of the major achievement of the project is the publication of the book entitled "Edible Wild Mushrooms of Kerala -A Field Guide". This book includes descriptions of 42 edible mushrooms collected during the project period. By detailing 42 edible species, this guide will undoubtedly be a valuable resource for researchers, local communities and anyone interested in wild foraging. The inclusion of easily identifiable characteristics, habitat information, fruiting seasons and edibility notes not only aids in correct identification but also empowers people to use these resources responsibly and safely.



Beyond just identification, the guide seems to emphasize the importance of understanding where and when these mushrooms can be found, which is especially useful for local foragers or anyone interested in sustainably harvesting them. It could also help raise awareness of the cultural and culinary significance of wild mushrooms in Kerala, encouraging their use in local cuisine or as a potential source of income for communities that rely on foraging.

This guide could also have a far-reaching impact, from supporting local economies through responsible mushroom harvesting to fostering greater appreciation for the region's biodiversity. The effort to increase awareness about their role in local ecosystems is equally important, especially when it comes to conservation and sustainable utilization.

Awareness Programme on Edible Mushrooms of Kerala

As part of the ongoing project activities, a one-day awareness programme was organized at the Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) on 23 April 2025. The event focused on the dissemination of knowledge related to edible mushrooms of Kerala, documented during the project period.

The programme targeted Biodiversity Management Committee (BMC) members from Thiruvananthapuram district and college students, aiming to raise awareness and share scientific insights on the rich mushroom biodiversity of the region.

The seminar was inaugurated by Dr. N. Anil Kumar, Chairman of the Kerala State Biodiversity Board. During the event, Dr. Kumar also officially released the book *Edible Wild Mushrooms of Kerala – A Field Guide*, published by the Kerala Biodiversity Board.

Following the inauguration, two expert talks were conducted. The first was led by Dr. C. Bijeesh, who presented on **"Edible vs. Poisonous Mushrooms: How to Distinguish"**. He detailed 40 commonly found poisonous mushroom species in Kerala, with particular emphasis on look-alike species that are often mistaken for edible ones.

The second talk was delivered by Dr. C.K. Pradeep, focusing on the **edible mushrooms of Kerala**. Dr. Pradeep shared information on several commonly available edible species found in Kerala's forests, along with guidance on identifying lesser-known edible varieties.

The field guide released during the event features comprehensive information on 42 wild edible mushroom species found across Kerala.

The programme concluded with a panel discussion, where experts addressed various queries raised by the participants, providing valuable clarifications and practical insights.

A total of 30 participants from BMC's of Thiruvananthapuram district and students from various colleges attended the event, making it a focused and interactive session that contributed significantly to community awareness and biodiversity education.

Awareness Programme on Edible mushrooms condcuted at JNTBGRI on 23-04-2025.

AWARENESS PROGRAMME
ON
WILD EDIBLE MUSHROOMS OF KERALA

23 April 2025

Organized by

KSCSTE-Jawaharlal Nehru Tropical Botanic Garden & Research Institute

In Association with

Kerala State Biodiversity Board

Programme

9.00 am: Registration

10.00 am: Inaugural Function

Welcome address
Dr. V. Arunachalam, Director, JNTBGRI

About the Programme
Dr. C. K. Pradeep, Principal Scientist, JNTBGRI

Inauguration & Inaugural address
Dr. N. Anil Kumar, Chairman, KSBB

Book Release
Edible Wild Mushrooms of Kerala - A Field Guide
(Dr. N. Anil Kumar, Chairman, KSBB)

Vote of thanks

11.00 am: Tea Break

11.30 am: Expert Talks

Wild Edible Mushrooms of Kerala
Dr. C. K. Pradeep, Principal Scientist, JNTBGRI

Edible Vs. Poisonous: How to distinguish?
Dr. C. Bijeesh, Asst. Professor, Malabar Christan College, Kozhikode

Summary & Conclusion

The two-year research study on wild edible mushrooms in Kerala has provided valuable insights into the diversity, identification, and conservation of fungal species in the region. Through extensive mushroom forays across various forest locales, 146 individual collections were made, resulting in the identification of 42 distinct mushroom species. The study has successfully contributed to the understanding of the macro and micromorphological features, as well as the molecular characteristics of these species.

A significant achievement of this research is the successful development of pure cultures for 16 species, which are now being maintained for ex-situ conservation at the Microbiology Division of JNTBGRI. These pure cultures are essential for ongoing studies in mycology, biotechnological applications, and conservation. Further work is being undertaken to try and cultivate additional species for future conservation and research purposes.

Moreover, the study has led to the creation of a detailed database on all 42 identified species, providing a foundation for future research and documentation. The voucher specimens of edible mushrooms have been preserved in the Mushroom Herbarium at JNTBGRI, ensuring that these specimens are available for future reference and research.

One of the main achievements of this project is the publication of a comprehensive **Field Guide on Edible Wild Mushrooms of Kerala**. This guide will serve as a crucial resource for both researchers and the general public, contributing significantly to the popularization and sustainable utilization of Kerala's wild edible mushroom resources. The guide not only provides essential information about the identification and distribution of these mushrooms but also promotes awareness about their potential as a food source and their role in local ecosystems.

In conclusion, this research project not only adds to the scientific understanding of Kerala's wild edible mushrooms but also provides a vital resource through the publication of the **Field Guide**, which will foster greater appreciation and sustainable use of these valuable natural resources. The project has successfully laid the groundwork for further studies, conservation efforts and the promotion of wild edible mushrooms in Kerala, supporting both biodiversity conservation and local livelihoods.

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