

Handbook on Mushroom Cultivation and Processing (with Dehydration, Preservation and Canning)

Author: NIIR Board of Consultants and Engineers

Format: Paperback

ISBN: 9788178330341

Code: NI164

Pages: 544

Price: Rs. 1,275.00 **US\$** 125.00

Publisher: Asia Pacific Business Press Inc.

Usually ships within **5** days

Mushrooms are the health food of the world. These are that fast growing basidiomycetous fungi which produce fleshy fruit bodies. They are rich in proteins, vitamins and minerals, so they are consumed as energy rich food. Mushroom has been attracting attention of mankind since ancient times and use of mushroom, as food is as old as human civilization. Mushrooms are superior to many vegetables and beans in their nutritive value. It is very rich in protein, vitamins and minerals. Fresh mushrooms contain about 85% water and 3.2% protein. But dried mushrooms water content is low and protein level is high as 34 to 44% and the fat content is less than 0.3%. There are about 100 species of edible mushrooms all over the world. But only three of them are cultivated in India which are *Agaricus bisporus*, *Volvariella volvacea* and *pleurotus sajor caju*. Unfortunately, it is realized that mushrooms did not receive universal acceptance over the years since a number of naturally growing mushrooms are poisonous. Now the situation has been changed because the cultivated edible mushrooms are totally safe for human consumption. Mushroom cultivation fits in very well with sustainable farming and has several advantages: it uses agricultural waste products, a high production per surface area can be obtained, after picking; the spent substrate is still a good soil conditioner. They have less carbohydrate so they are believed to be suitable for diabetic patients. Fresh mushrooms have very limited life and hence they need to be consumed within few hours. But processing and canning increases their shelf life to few months. Osmotic dehydration is one of the important methods of processing mushroom which involves drying technology of mushroom. Mushrooms are very popular in most of the developed countries and they are becoming popular in many developing countries like India. Applications and market for mushrooms is growing rapidly in India because of their nice aroma, nutritious values, subtle flavour and many special tastes. Mushroom cultivation has been declared as a major thrust area by Government of India. Mushroom dish is a common item in all the big hotels. Mushroom production has increased many folds during the recent past. Mushrooms have found a definite place in the food consumption habits of common masses and there is a constant demand for it throughout the year.

Some of the fundamentals of the book are nutritive value of edible mushrooms, medicinal value of mushrooms, advantages of mushrooms, symptoms of mushroom poisoning, morphology of common edible mushrooms, classification of fungi a brief survey, chemical composition, anti nutritional factors and shelf life of oyster mushroom, osmotic dehydration characteristics of button mushrooms, mushroom cultivation, cultivation of white button mushroom (*agaricus bisporus*), factors determining the amount of spawn needed, fungicides for mushroom diseases insecticides for mushroom pests etc.

The present book contains cultivation, processing, dehydration, preservation and canning of various species of mushrooms. It is resourceful book for agriculturists, researchers, agriculture universities, consultants etc.

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 Gomphidius Roseus
 (Fr.) P. Karst.
 Gomphidius Glutinosus
 (Schaeff. ex Fr.) Fr.
 Chroogomphus Rutilus
 (Schaeff. ex Fr.) O.K. Miller
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 Hygrophorus eburneus (Bull. ex Fr.) Fr.
 Goat Moth Wax Cap
 Hygrophorus Cossus (Sow. ex Fr.) Fr.
 Pinewood Wax Cap
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 Hygrophorus marzuolus
 (Fr.) Bres.
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 (Pers. ex Fr.) Kumm.
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 (Quel.) Kuhner
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 (Fr.) Kumm.
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 (Pres. ex Fr.) Quel.
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 (Huds. ex Hook) Cooke
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 (Scop. ex Fr.) Cooke
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 (Bull. ex Fr.) Kumm.

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 (Fr.) Kumm.
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 (Fr. ex Fr.) Kumm.
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 (Batsch ex Fr.) Harmaja
 Wood Blewitt, Bluette, Blue Leg
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 Blewitt, Bluette, Blue Leg
Lepista saeva (Fr.) P. D. Orton
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 (Viv.) Ricken
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 (Fr.) Quel.
Tricholoma Fulvum
 (DC. ex Fr.) Sacc.
Tricholoma Vaccinum
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 (Fr.) Quel.
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Tricholoma sejunctum
 (Sow. ex Fr.) Quel.
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 (Fr.) Kumm.
Tricholoma Terreum
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 Honey Fungus, Honey Agaric, Shoestring Mushroom
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Lyophyllum connatum
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Lyophyllum fumosum
 (Pers. ex Fr.) Orton
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 (Bull.) ex Sacc. et Dalla Costa
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 (Fr.) Gill.
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 (Lundell) Kotl. et Pouz.
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 (Fr.) Quel.
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Amanita umbrinolutea Secr.
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Amanita muscaria (L. ex Fr.) Hook
Amanita regalis
 (Fr.) Michael
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Amanita caesarea (Scop. ex Fr.) Grev.
 Panther Cap
Amanita pantherina (DC. ex Fr.) Krombh.
Amanita gemmata
 (Fr.) Gill.
 Death Cap
Amanita phalloides (Fr.) Link
 Destroying Angel
Amanita virosa (Fr.) Bertillon
 False Death Cap
Amanita citrina (Schaeff) ex Roques
Amanita porphyrea
 (Alb. et Schw. ex Fr.) Schummel
Amanita spissa (Fr.) Opiz
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 Red-staining Agaric Wood Mushroom
Agaricus silvaticus (Schaeff. ex Krombh) Kumm.
 Common Field Agaric, Meadow Mushroom
Agaricus campestris L. ex Fr.
Agaricus augustus Fr.
Agaricus abruptibulbus Peck
 Horse Agaric, Horse Mushroom
Agaricus arvensis Schaeff. ex Fr.
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Agaricus xanthoderma Genev.
Lepiota cristata
 (Alb. et Schw. ex Fr.) Kumm.
Lepiota clypeolaria
 (Bull. ex Fr.) Kumm.
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Macrolepiota rhacodes (Vitt.) Sing
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 (Schaeff. ex Fr.) Acker-Sch.
Cystoderma amianthinum
 (Scop. ex Fr.) Maubl
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 (Alb. et Schw. ex Fr.) Maubl
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Coprinus atramentarius (Bull. ex Fr.) Fr.
 Glistening Ink Cap

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(Bull. ex Fr.) Quel.
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(Fr. ex Fr.) R. Maire
Psathyrella velutina
(Pers. ex S. F. Gray) Sing.
Yellow Cow-pat Toadstool
Bolbitius vitellinus (Pers. ex Fr.) Fr.
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(Bolt. ex Fr.) Sing.
Agrocybe praecox
(Pers. ex Fr.) Sing.
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Farlow in Murrill
Verdigris Agaric
Stropharia aeruginosa (Curt. ex Fr.) Quel.
Stropharia albonitens
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Brick Red Hypholoma, Bricktop, Bricktop Mushroom
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Sulphur Tuft
Hypholoma fasciculare (Huds. ex Fr.) Kumm.
Hypholoma capnoides
(Fr. ex Fr.) Kumm.
Psilocybe semilanceata
(Fr. ex Weinm) Kumm.
Pholiota destruens
(Brond) Gill.
Shaggy Pholiota
Pholiota squarrosa (Pers. ex Fr.) Kumm.
Pholiota carbonaria
(Fr.) Sing.

Gymnopilus spectabilis
(Fr.) Sing
Gymnopilus sapineus
(Fr.) R. Maire
Kuehneromyces mutabilis
(Schaeff. ex Fr.) Sing. et Smith
Tubaria conspersa
(Pers. ex Fr.) Fayod
Crepidotus variabilis
(Pers. ex Fr.) Kumm.
Inocybe patouillardii Bres
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(Schaeff. ex Fr.) Quel.
Inocybe argillacea
(Pers. ex Pers.) Sing.
Inocybe lacera
(Fr.) Kumm.
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(Bull. ex Fr.) Ricken

Jewâ€™s Ear, Judasâ€™ Ear
Hirneola auricula-judae (Bull. ex St. Amans) Berk.
Yellow Brain Fungus, Witches Butter
Tremella mesenterica Retz. ex Hook.
Yellow Chanterelle Pixie Stool
Cantharellus cibarius Fr. ex Fr.
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Bull. ex Fr.
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Lentinus Lepideus
(Fr. ex Fr.) Fr.

25. GLOSSARY OF BASIC MYCOLOGICAL TERMS

About NIIR

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NIIR PROJECT CONSULTANCY SERVICES , 106-E, Kamla Nagar, New Delhi-110007, India. **Email:** npcs.india@gmail.com **Website:** NIIR.org

Wed, 17 Jan 2018 16:52:00 +0530