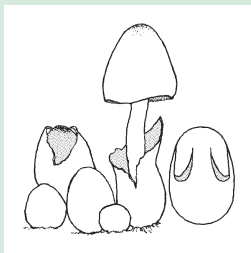


Small-scale mushroom cultivation - 2

Agaricus and Volvariella



Agrodok 41

**Small-scale mushroom
cultivation - 2**

Agaricus and Volvariella

Bram van Nieuwenhuijzen

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Author: Bram van Nieuwenhuijzen

Editor: Janna de Feijter

Illustrators: Bernard Lamote, Barbera Oranje

Design: Eva Kok

Translation: Rob Barnhoorn (language editing)

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Foreword

The first Agrodok on ‘Small-scale mushroom cultivation’, Agrodok no. 40, describes the technique of mushroom cultivation on substrates that only need heat treatment. Certain mushroom species however, like the Rice Straw Mushroom (*Volvariella* spp.) and the Button Mushroom (*Agaricus* spp.) can only be cultivated on fermented substrate or compost. Rice Straw Mushrooms are cultivated in the warmer climates of the tropical regions, whereas the growing of the Button Mushrooms predominantly takes place in more moderate climates.

The process of composting for mushroom cultivation is more complex than the preparation of temperature treated substrates. For that reason it seemed appropriate to publish a second Agrodok that meets the demand and covers the lack of information on this specific subject. It describes the complete process of composting of agricultural wastes as well as the cultivation of the appropriate species mentioned above. Moreover, it proves to be necessary to treat the process of obtaining good quality spawn and spawn production (propagation material) in detail in a separate chapter.

Special emphasis has been put on the minimum requirements for growing conditions, mushroom houses and equipment for both species in order to avoid problems and to be cost-effective.

Additionally, attention has been given to harvesting and post harvest handling. A high demand for processed (mostly canned) mushrooms does exist in suburban and urbanised regions. Consequently the basics of mushroom processing have been covered in a separate chapter. Whereas knowledge on marketing in the field of small-scale mushroom cultivation is still rather poor, it also seemed appropriate to add a chapter on marketing in which the importance and possibilities of the local and regional market(s) are pointed out.

September 2007, Bram van Nieuwenhuijzen and Janna de Feijter

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1 Introduction

Since time immemorial people have gone into fields and woods to pick edible mushrooms. Nowadays some species of edible mushrooms can also be cultivated as cash crops.

Certain species are rather easy to grow while others demand more specific cultivation methods and temperature. In general the life cycle of a crop is rather short (varying between some weeks and a few months) When the cropping cycle has been completed the spent mushroom substrate (SMS) can be used as a soil conditioner.

Mushrooms contain a lot of proteins and minerals, several B vitamins and are regarded as a healthy food or food supplement. Moreover, due to certain chemical compounds valued for their medicinal properties, mushrooms gain more and more interest from the health food industry.

In this Agrodok information is given on the cultivation of Button Mushroom, which is consumed worldwide, and Rice Straw Mushroom, which is much valued in Asia. The specific cultivation methods of each of these mushroom species have been described in separate chapters.

Before deciding to grow either one of the species mentioned above it is wise to verify the following points:

- Check the temperature range in section 2.3 to decide whether the climate conditions are appropriate for cultivation.
- Are you able to prepare the required compost? Which kinds of agricultural wastes (and in what amounts) are available for compost preparation?
- Can mushroom spawn be purchased? If not, are you then sufficiently equipped to produce your own spawn? (See chapter 4)
- Is there a demand for mushrooms in the vicinity and in the nearby markets? (See chapter 9)

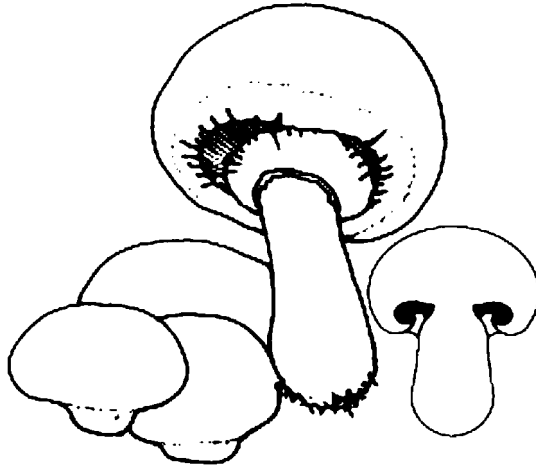


Figure 1: Button Mushroom (Agaricus spp.): closed button (left), mature (field) specimen (middle) and cross section (right)

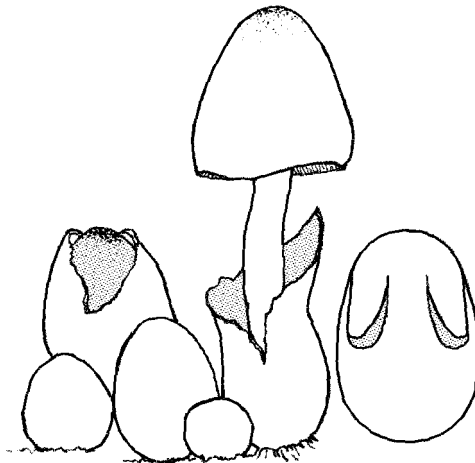


Figure 2: Rice Straw Mushroom (Volvariella spp.): egg stage (left), mature specimen (middle) and cross section (right)