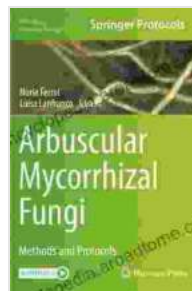


# Handbook of Arbuscular Mycorrhizal Fungi: A Comprehensive Guide to the Biology and Applications of AM Fungi

Arbuscular mycorrhizal fungi (AM fungi) are a group of beneficial fungi that form symbiotic relationships with plants. These fungi help plants to absorb water and nutrients from the soil, and in return, the plants provide the fungi with carbohydrates. AM fungi are found in a wide variety of ecosystems, and they play an important role in plant growth and productivity.



## Handbook of Arbuscular Mycorrhizal Fungi

★★★★★ 5 out of 5



The Handbook of Arbuscular Mycorrhizal Fungi is a comprehensive guide to the biology and applications of AM fungi. This book covers all aspects of AM fungi, from their taxonomy and evolution to their ecology and physiology. It also provides detailed information on the use of AM fungi in agriculture, forestry, and environmental remediation.

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The Handbook of Arbuscular Mycorrhizal Fungi is a comprehensive guide to the biology and applications of AM fungi. This book is intended for a wide audience, including students, researchers, and practitioners in the fields of plant science, soil science, and environmental science.

The book is divided into seven chapters. The first chapter provides an overview of AM fungi, including their taxonomy, evolution, and ecology. The second chapter discusses the physiology of AM fungi, including their nutrient uptake mechanisms and their interactions with plants. The third chapter covers the use of AM fungi in agriculture, including their role in nutrient uptake, drought tolerance, and disease resistance. The fourth chapter discusses the use of AM fungi in forestry, including their role in tree growth and productivity. The fifth chapter covers the use of AM fungi in environmental remediation, including their role in heavy metal uptake and soil restoration. The sixth chapter provides a , summarizing the key points of the book.

## **Taxonomy and Evolution of AM Fungi**

AM fungi are a group of fungi that form symbiotic relationships with plants. These fungi belong to the phylum Glomeromycota, which is a monophyletic

group that is distinct from other groups of fungi.

There are currently over 300 known species of AM fungi. These fungi are found in a wide variety of ecosystems, including forests, grasslands, and deserts. AM fungi can form symbiotic relationships with a wide variety of plants, including agricultural crops, trees, and wildflowers.

## **Ecology and Physiology of AM Fungi**

AM fungi are obligate symbionts, meaning that they cannot complete their life cycle without a host plant. These fungi form symbiotic relationships with plants by forming arbuscules, which are specialized structures that allow the fungi to exchange nutrients with the plant. Arbuscules are formed in the roots of plants, and they provide the fungi with carbohydrates. In return, the fungi provide the plants with water and nutrients.

AM fungi are able to absorb nutrients from the soil that are not available to plants. These nutrients include phosphorus, nitrogen, and potassium. AM fungi also help plants to tolerate drought and other environmental stresses.

## **AM Fungi in Agriculture**

AM fungi have been used in agriculture for centuries to improve crop yields. These fungi can help plants to absorb nutrients from the soil, tolerate drought, and resist disease. AM fungi are also being used to develop new sustainable agricultural practices, such as no-till farming and organic farming.

There are a number of ways to use AM fungi in agriculture. One way is to apply AM fungi to the soil at planting time. Another way is to transplant

plants that have already been colonized by AM fungi. AM fungi can also be incorporated into compost or manure.

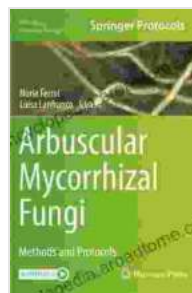
## AM Fungi in Forestry

AM fungi are also important in forestry. These fungi help trees to absorb nutrients from the soil, tolerate drought, and resist disease. AM fungi also play a role in the decomposition of organic matter and the cycling of nutrients in forest ecosystems.

There are a number of ways to use AM fungi in forestry. One way is to apply AM fungi to the soil at planting time. Another way is to transplant trees that have already been colonized by AM fungi. AM fungi can also be incorporated into compost or manure.

## AM Fungi in Environmental Remediation

AM fungi are also being used to clean up contaminated soil and water. These fungi can absorb heavy metals and other pollutants from the environment. AM fungi can also



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