

# Arbuscular Mycorrhiza (AM) Fungi as component of INM

## INTRODUCTION

Root – fungus association is called Mycorrhiza.

There are two types of Mycorrhizal fungal association *viz.* Ectomycorrhiza and Endomycorrhiza (AM).

Mycorrhizal plants increase the surface area of the root system and absorb nutrients from soil especially phosphorus and micronutrients by hyphae that goes beyond root zone to absorb nutrients.

Almost 90 % of crop plants are mycorrhizal mostly of AM type.

Therefore, AM association in crop plants plays significant role in enhancing nutrient mobilization towards root.

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## INTRODUCTION

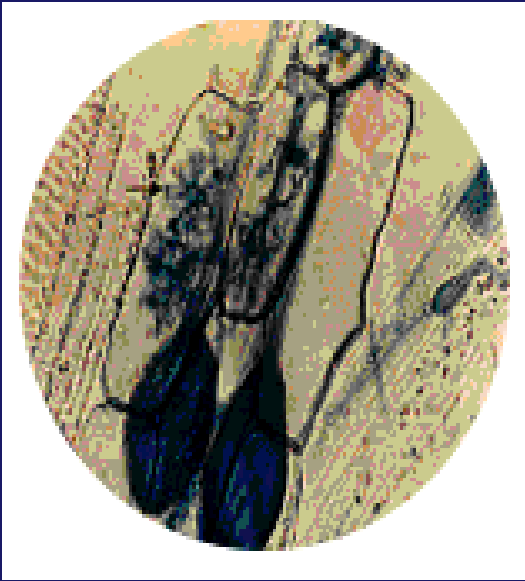
Four general types of Mycorrhizal fungal association viz.

Ectomycorrhizae (ECM), Ericoid or ecto-endomycorrhizae, orchid and arbuscular mycorrhizae (AM) have been recognized.

Mycorrhizal plants increase the surface area of the root system and absorb nutrients from soil especially phosphorus, zinc and micronutrients by hyphae that goes beyond root zone to absorb nutrients.

AM symbiosis are an essential component to sustain soil quality, plant health and productivity.

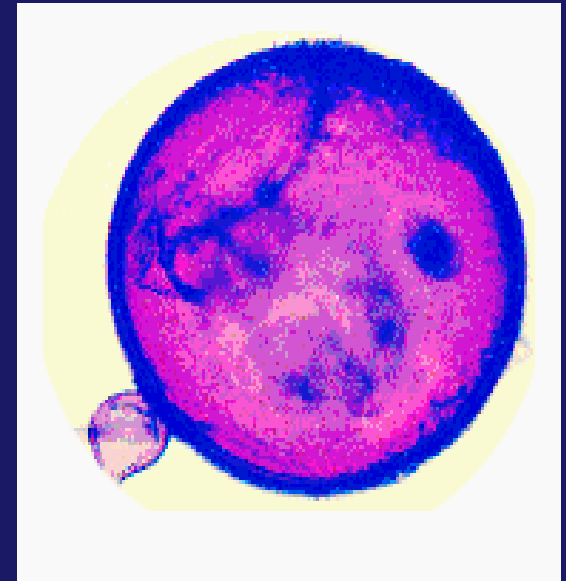
## Arbuscular Mycorrhiza (AM) Fungi as component of INM



Vesicles and Arbuscules



Glomus



Gigaspora

**Mycorrhiza is the symbiotic association  
between  
plant roots and fungal mycelia**

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### CHARACTERISTICS OF ARBUSCULAR MYCORRHIZA

**Mycorrhiza increase the surface area of the root**

**Absorb nutrients from soil especially phosphorus and micronutrients through hyphae and mobilize into the host cell.**

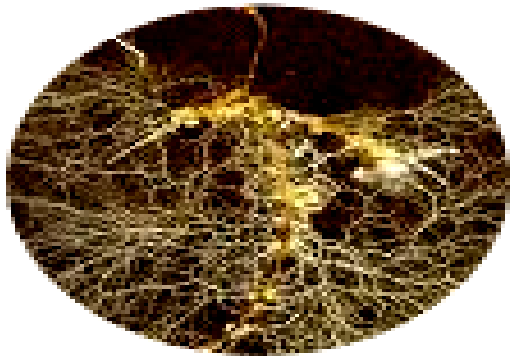
**Almost 90 % of crop plants are mycorrhizal mostly of arbuscular type (AM)**

**Mycorrhiza possess vesicles and arbuscules.**

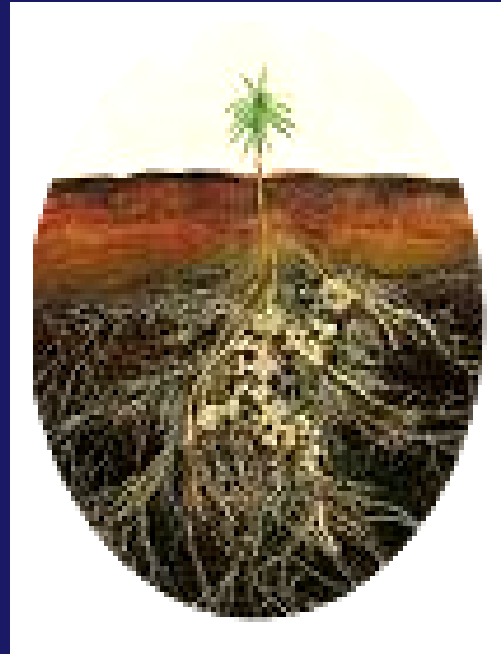
**Mycorrhiza species are: *Glomus*, *Gigaspora*, *Scutellospora*, *Acaulospora*, *Entrophosphora* and *Sclerocystis***

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## Microphotographs of different mycorrhizal type



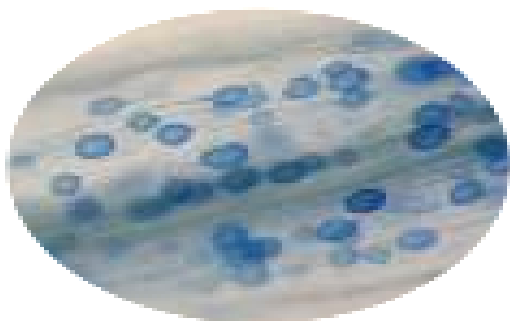
Hyphal network



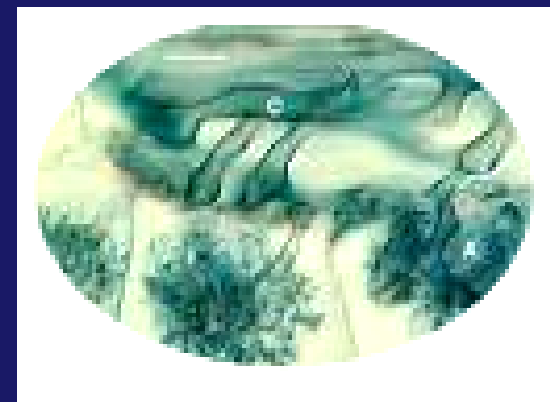
Ectomycorrhiza



AM Spores



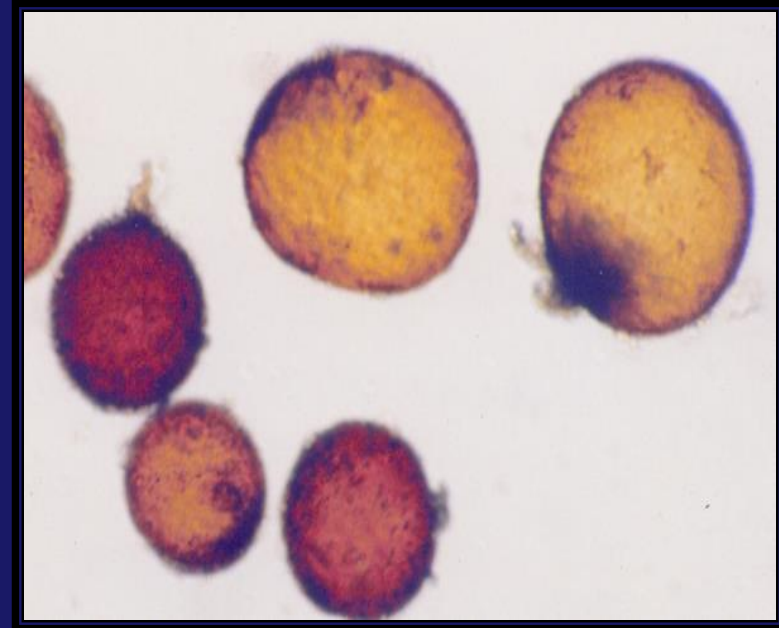
Vesicle in root



Arbuscule

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## MYCORRHIZAL INOCULUM PRODUCTION



**Mycorrhizae are obligate symbiont**  
**Generally cultured with living host**  
**Spore multiplication in maize plant**  
**Collection of soil based inoculum**  
**Application in the root zone**

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### MYCORRHIZA ENHANCES CROP YIELD

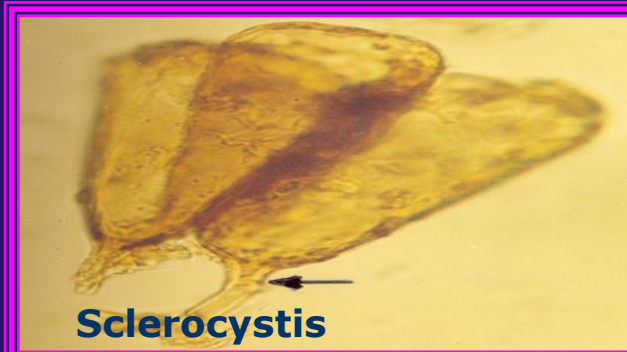
Crop	Supplement of P <sub>2</sub> O <sub>5</sub> through VAM (kg/ha)	% Yield increase over control
Fingermillet	19	18
Soybean	25-50	19
Chillies	37.5	55
Chickpea	40.0	25
Groundnut	-	10-20

P supplementation and mobilization by AM helps in yield increase



# Arbuscular Mycorrhiza (AM) Fungi as component of INM

## AM MYCORRHIZAL SPECIES





## Arbuscular Mycorrhiza (AM) Fungi as component of INM

### LET US SUM UP

Mycorrhiza is an association of fungal mycelia with roots of higher plants and are of two types viz. Ectomycorrhiza and Endomycorrhiza (AM).

Mycorrhizal plants increase the surface area of the root system and absorb nutrients from soil especially phosphorus and micronutrients by hyphae that goes beyond root zone to absorb nutrients.

*contd....*

## Arbuscular Mycorrhiza (AM) Fungi as component of INM

### LET US SUM UP

*contd....*

The mycorrhizal association is one of the important phenomena for better establishment of crop plants especially under nutrient deficient soils.

Almost 90 % of crop plants are mycorrhizal mostly of AM type.