



## FUNGAL GROWTH IN AND ON GROWING MEDIA

Growing media often contain fungi and they can also grow visibly in and on them. These are usually saprotrophic fungi, which are completely harmless to plants. Growing media produced with renewable raw materials are more susceptible to fungal growth. What are the risks of fungal growth?

### Saprotrophic fungi

Saprotrophic fungi are organisms that feed themselves on dead organic matter. The best known species are: Peziza, Leucocoprinus and Sphaerobolus. Fungi can be at different stages of their life cycle and can be present as fungal threads (mycelium), fungal spores, fungal globules (primordia, in Leucocoprinus) or fruiting bodies (mushrooms, cup fungi). If fungi are latent (spores or mycelium), they are in a dormant stage in which they do not actively grow. Saprotrophic fungi do not pathogenize plants. They do not affect living tissue. Also, these fungi do not pose a direct health risk to humans. Only in the event that the spores of fungi accumulate strongly in the air, people with, for example, chronic or allergic respiratory diseases can suffer from this.

### Fungi in/on growing media?

Organic substrates are not sterile. Microorganisms, including fungi, are naturally present in it. That's normal, and it's even beneficial to have some degree of saprotrophic fungal activity in growing media. The fungi contribute to the decomposition process of organic matter and thus the conversion or easier uptake of necessary nutrients for plants. This biological process sometimes also makes it more difficult for plant pathogenic fungi to spread.



Growing media with renewable or circular raw materials (e.g. coir, compost, bark) are more susceptible to fungal growth. The organic structures of these raw materials are relatively young. The composition of the substrate combined with favourable conditions (moist, warm and type of culture) can cause fungi to develop and spread. Fungal growth can be stimulated when a substrate is wrapped in plastic. When opening a bag of potting soil or a big bale, fungi can be found on the substrate. This sometimes causes an intense smell.

Fungi can be present in or on the grower's pots. This will not cause any damage to the plant. Excessive growth of saprotrophic fungi in a pot is unfavourable. With a number of fungi this can lead in extreme cases to irreversible drying of the substrate in the pot, making it water-repellent. This can result in irregular plant growth. Also, the pH can sometimes decrease significantly. Cosmetic damage may also occur. Trade and retail don't want a visible presence of mushrooms or black dots on the leaves of the plant.

### What are the guidelines of the RHP quality mark?

All quality requirements of the RHP quality mark are described in the RHP product

certification scheme, which are continuously updated based on the developments. There are no specific requirements for saprotrophic fungal growth. This biological and natural process can't be prevented, not even by the most careful quality controls throughout the chain, as is the case for the RHP quality mark. The presence of pathogenic fungi is minimised as much as possible by risk assessment of raw material flows. Sanitation of raw materials is not a solution to get rid of fungi in growing media. It can even increase fungal growth due to the absence of competition.



### Advice for the user

Saprotrophic fungi mainly grow under favourable conditions, such as warmth and humidity. Therefore, it is important to manage the substrate well and ensure that the conditions are not too favourable. Don't store growing media for too long. Don't add leftover substrate to new stock. Always store substrate in a cool, shady place. Especially if it's wrapped in plastic. Ensure good hygiene in the greenhouse. Fungi can sometimes already be present in the greenhouse and can suddenly, under favourable conditions, start growing during the next culture.

If fungi are visible in the culture, further spread in the greenhouse must be prevented by the grower. The affected pots are best placed in a plastic bag on site and removed from the greenhouse. Potting machines and flooded benches culture systems must be cleaned regularly, nutritional water, (packaging) material, carts and tools must be disinfected and the floor properly cleaned and kept clean. Disinfect pots or containers before they are reused. Although various saprotrophic fungi are present on greenhouses, it is wise to investigate whether the fungus can be traced back to a batch of plants supplied, a changed substrate composition or different conditions in the culture. Fungi can sometimes be controlled with chemical products, but caution is advised because of possible resistance build-up.

- ✓ **Some saprotrophic fungal activity in growing media isn't unusual**
- ✓ **The risk of growth of saprotrophic fungi is bigger on or in growing media with renewable raw materials**
- ✓ **Sanitation of raw materials doesn't help against saprotrophic fungi in growing media. It can even increase fungal growth.**
- ✓ **Excessive fungal growth can make growing media water-repellent**
- ✓ **Remove plants from the culture where obvious fungal growth is present and maintain good company hygiene at the greenhouse**