



Department of biology 2025-2026

((Mycology))

Stage (-3-)


LEC- ((2))

the most important basic requirements for
growth

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In nature, it is common to find fungi growing in soil, water and air, For the purpose of studying them in the laboratory, they are grown on nutrient media prepared in the laboratory to provide these organisms with their energy requirements for growth. The basic units for building and structuring cell parts, and this is limited to saprophytic fungi only, whether the sprouting is obligatory or optional, while parasitic fungi are obligatory and cannot be grown in the laboratory. In order to achieve significant growth of these microscopic organisms, the food media used must have the most important basic requirements for growth, For the fungi cell ,which is :




1- **Carbon source:** Glucose is considered one of the most consumed sources of carbon by most types of fungi, in addition to fructose among the monosaccharides, sucrose and maltose among the disaccharides, and starch among the polysaccharides.

2- **Nitrogen sources:** Most types of fungi consume nitrogen, which may be in an organic form, such as amino acids or peptone, as well as digested protein, or in an inorganic form, such as nitrate salts and ammonium salts, as a source of nitrogen.




3- Mineral salts: The mineral elements necessary for the growth of fungi include a large number and are added to the nutrient medium in the form of salts to be part of the composition of the nutrient medium because of their importance in the work of some types of enzymes and cellular structure. They also activate the growth and germination of the fungal cell. These can be divided into two groups:

The first group includes elements that are added in relatively large quantities, such as potash, magnesium, phosphorus, calcium, and sodium, while : The second group includes minerals that must be present in small quantities. But it has essential nutritional value for the growth of fungi, such as sulfur, manganese, copper, iron, zinc, and others.



4- Vitamins & Growth factors: All fungi need vitamins to grow, but most of them produce vitamins themselves, and a few of them need to be added to the nutrient medium for their growth, such as vitamin 8, vitamin B6, and vitamin B6. Some growth factors may also be added, including Safe acids, peptone, and yeast extract to activate the growth and germination process of the fungal cell.



5- Other factors: water, pH, •
appropriate temperature for
fungal growth, and ventilation.