b - PH and growth

Under standard conditions the fungus can grow to the maximum extent within a certain range close for early acidity for culture media , fungi fails to grow upper and lower limits for acidity . fungi growth in the acidic culture or close to neutral

Lows levels of pH affect the activity of enzymes While High levels of pH affect the systemic or soluble metal elements .

Any environmental factor can changes the form of fungal growth curve with the concentration of pH .

Effect the pH of the culture media in growth of fungus :

- ❖ **Readiness of nutrients**
- ▪ Metals like Zn , Ca , Fe , Mg be ready for soluble by the fungus at low PH but become insoluble at high PH and affect on entrance of essential vitamins
  .
- ❖ **Affect the permeability of the cell membrane**
  Effect in the mycelium and thus affect the enzymatic activity
- ❖ **Effect on activity of enzymes**
  Enzymes have a different PH optimum for activity , Favorite range for the activity between (4-8) .

Double PH-optimum : Phenomenon registered in the number of fungus presence of two levels of pH optimum for growth .

c-Oxygen and growth :

Fungus aerobic organisms , There is a quantitative relationship between growth and oxygen differ between the various fungi , important note that the number of fungi less in the depths of the soil due to lack of oxygen .

Blastocladia sp. Failed to grow in containers pull them oxygen by chemical absorption pyrogallol meaning that the fungus needs oxygen to grow.

d-CO_2 and growth :

High concentrations of **CO_2** inhibit the growth but the level at which inhibits it differs from a fungus to another.

For example *Alternaria solani* , inhibits in concentrations **CO_2** 38Mm, while other fungi are not affected so much until in concentrations **CO_2** 150Mm .

Practical part:

Experiment:

Study the effect of hydrogen concentration (pH)on fungal growth

material and methods:

-Petri dishes contain (PDA) with different PH (4.5-9) and cork perforator

-Inoculate Petri dishes with a disk of used fungus and place in the middle of the dish.

-record the results