Benha university
Faculty of science
Botany of department
Diploma of biological treatment

Time : 2hours
Date : 9/1/2017

Fermentation and microbial transformations

Answer the questions :

1) a- Mushrooms : The fruiting , bodies of various basidiomycetes are used as a food and as a flavoring agent in soups . The common mushroom is grown on compost beds in mushrooms houses. For the growth of this mushrooms on compost, the spores first are germinated on agar , and the resulting white mycelium is transferred to sterile wheat . On incubation mycelia ' spawn ' is produced.

B) Algae: Are a potential source of human food and animal feed providing good sources of protein , vitamins , fats and carbohydrates . Algae use carbon dioxide and photosynthesis to obtain carbon source for growth . Algae fix nitrogen from air as than nitrogen source for growth, Algal fermentation provide distinct interest for space explosion.

D) Pectinases : Are utilized to eliminate pectin and pectin like protective colloids in fruit juices and as a means of preventing gelling of the juices during the concentration steps of processing , pectinases are produced by various bacteria and fungi .

E) Faster growth occurs by using condensed inoculums

2- Using young spores not old for inoculation

3- pregermination for spores or mycelium should be done

F-1- Inoculation of certain species of bacteria **to soil leads to acid formation**

2- Bacterial inoculation helps for decreasing viscosity of raw oil , leading to streaming oil

2)

A) Killing rate: the rate of death according to environmental conditions and type of microorganisms

B) Sterilization: removal of any living dormant form of microorganisms from an object

C) Pure culture: Means that colony is a single cell

E) Transformation medium: Water or buffer solution with optimum pH values containing the substrate.

F) Biodegradation: Degradation of industrial materials such as : paints , rocks , paper and wood

G) Pseudocrystallofermentation : Grinding crystalline substrate to micronized particles for penetration of cell membrane .