

Agriculture Learning Outcome #5
Agriculture Learning Outcome #10

Team Player
Agriculture Systems and Issues

Biology Learning Outcome #3 **Unity and Diversity exist throughout the biosphere**

Assignment: Students will collect and record their observations of a mold sample that may be found in an agricultural environment.

Farmer's Lung is not the only respiratory hazard faced by farmers, but it is a serious one. The number of farmers affected by this hazard has increased in recent years probably because more farmers are aware of the disease and, therefore, see their doctors more frequently.

Farmer's Lung is a noninfectious allergic disease caused by inhaling dust from moldy hay, straw, or grain. It is a disease because the body reacts to the invading contaminants (mold spores) which the body's immune system cannot counteract. When mold spores are inhaled, they move with oxygen into the lungs and bloodstream. The results from exposure to mold spores can be so debilitating that some people are forced to leave farming completely.

Farmers can be exposed to mold spores when they:

- Work in dusty fields or buildings.
- Handle moldy hay.
- Work in silos.
- Feed or work with feedstuffs (exposure to fish meal).
- Work in corn silage.
- Uncap silos.
- Clean grain bins.
- Work with birds or animals (exposure to bird droppings or to feather, hair, or fur dust).

Preparation:

Prior Knowledge and Skills: Lab safety
Characteristics, life cycle, diversity and classification of fungi

Materials and Resources: Ritter et als.. *Biology*. Nelson Canada: Scarborough, Ontario, 1993.
Petri dish
Compound microscope

Activity: Students place agar plate in an area where agricultural activity occurs. Following the specified time, the agar plate is brought back to class to be examined. Write up a report of your observations using the following criteria.

Theory Include a description of the area where you exposed the agar plate. describe in general terms the features of a typical fungus and the conditions under which it grows best.

Petri Dish Count the number of species present and the number of colonies of each species. Diagram at least four species. Observe each under the microscope and write a brief description of each. e.g. color, filaments present, reproductive system.

Prepared Slides Observe and draw each of the following and label:

1. single yeast and budding yeast
2. penicillin mold
3. bread mold