

## 1 BACTERIA OF DECAY (2000x)

Life could not exist on our earth if it were not for these bacteria, which help to enrich the soil.

Plants grow by taking nitrates and other minerals from the earth. The soil must get back the minerals it gives by taking it from dead plants and animals which fall to earth and decay. This is where the bacteria of decay

do their job. They cause dead animals and plants to rot and break down, returning their minerals to the soil.

When farmers add fertilizer to their land, the bacteria of decay cause the fertilizer to rot and the minerals are transferred to the soil as well. Plants can then take in the nourishment they need to grow.

## 2 BACTERIA OF FERMENTATION (2000x)

These bacteria, which grow in the shape of very short rods, cause a chemical change in certain foods. This change is called fermentation. It is often helpful in breaking down foods in the intestines of humans. This

enables the body to get its nourishment from the food that is eaten.

Some of these bacteria help to change the juices of grapes into wine.

## 3 NITROGEN-FIXING BACTERIA IN SOIL (2000x)

Green plants need nitrates. The bacteria you see here help to make nitrates from the nitrogen in the air.

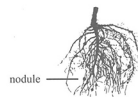
These bacteria are rod-shaped and often grow in chains, end to end. They are found free in

the soil, not attached to the roots of plants.

Where there are enough nitrogen-fixing bacteria in the earth, they can add to the nitrates provided by the bacteria of decay and make a good, rich soil.

## 4 NITROGEN-FIXING BACTERIA IN NODULE (2000x)

These are nitrogen-fixing bacteria which live in small lump, or nodules, on the roots of certain plants such as clover, peanuts and beans. This slide was made by taking a thin slice from a nodule on the root of a clover plant.



The large light areas are the cells of the root nodule. The red spots inside are the bacteria, which you may be able to see more clearly in slide 5. These bacteria enable the plant in which they live to take in nitrogen in the form of nitrates.

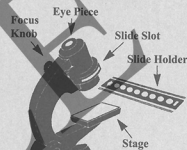
## 5 NITROGEN-FIXING BACTERIA IN ROOTS (2000x)

These are the bacteria that live in the roots of certain plants known as legumes (LEG-oomz). The bacteria were prepared in a special culture so you might see them more clearly.

The bacteria and the plants in which they live have a partnership. The bacteria take nitrogen from the air and make nitrates which the plants can then use. The plant supplies the bacteria with food. This important partnership occurs only with the legume family of plants.

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