

SPECIFIC MICROORGANISMS

Most common:

- *Thiobacillus ferrooxidans*
- *Thiobacillus thiooxidans*

These two bacteria have always be found to be present on the leaching dump.

Thiobacillus ferrooxidans:

- ❖ Rod shaped
- ❖ Quick growing
- ❖ Gram negative
- ❖ Strictly aerobic
- ❖ Uses ferric iron and sulfur ion as electron acceptor
- ❖ Mesophilic (20-35°C)
- ❖ PH (2.0)



THIOBACILLUS FERROXIDANS

Thiobacillus ferrooxidans grown on elemental sulfur using ferric iron as an electron acceptor. In acidic condition play important role in iron and sulfur cycle.

Thiobacillus thiooxidans



- *Thiobacillus thiooxidans* is strictly aerobic species, fixes CO₂ from the atmosphere to meet its carbon requirement.
- Very similar to *thiobacillus ferrooxidans*.
- Can't oxidise ferric cation.

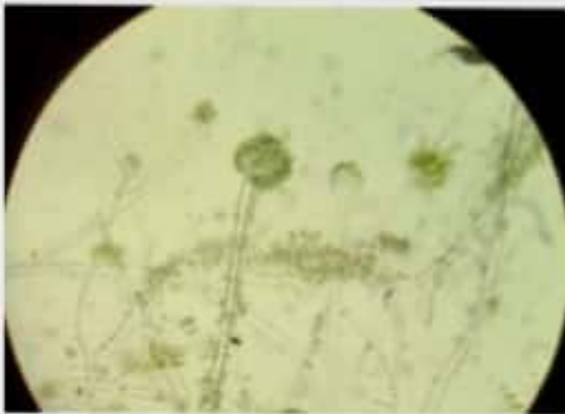
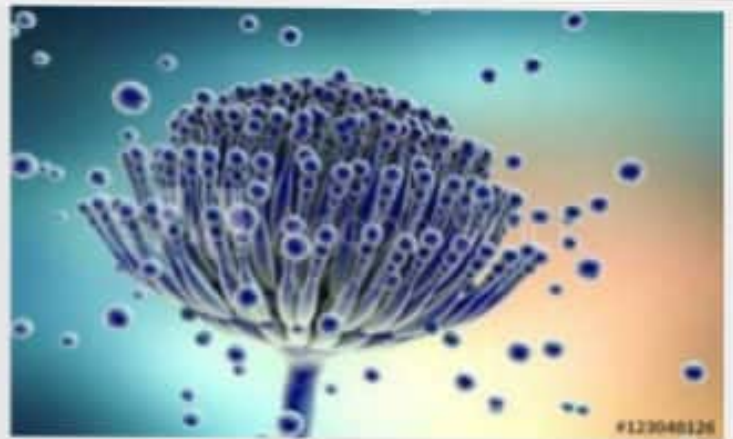
Pseudomonas aeruginosa:

Pseudomonas aeruginosa is a common Gram-negative, rod shaped bacteria. It lives primarily in water and soil. Take part in bioleaching of copper oxide ore, uranium(extract 100gm uranium per liter solution in 10 seconds).



Rhizopus arrhizus: This Microorganism can extract uranium from low grade uranium ores.

Aspergillus niger: It is fungi which extracts copper and nickel. Takes part in bioleaching of nickel and manganese.



Aspergillus oryzae: It is fungi found to extract gold by bioleaching.