

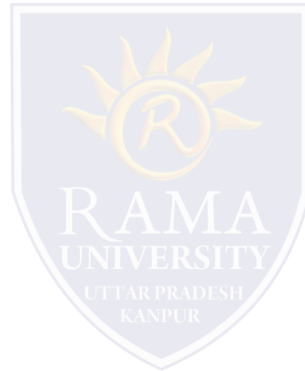


FACULTY OF ENGINEERING & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY

## Spontaneous Generation

Pasteur with his research and ingenious experiments on fermentation rejected the long prevailing spontaneous generation theory.

In his paper in 1862, he explained that airborne dust carried the germs of yeasts and microorganisms present during the fermentation process.

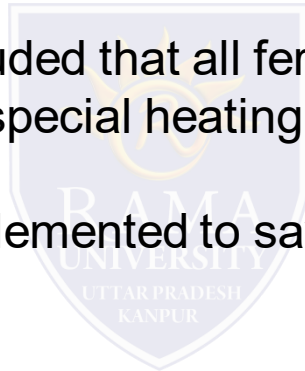


## **Pasteurization: (Wine & Beer Diseases)**

Pasteur continued his research and applied his microbiological techniques to agricultural and industrial sectors successfully.

His pasteurization process concluded that all fermentable liquid could be prevented from a spoiling with a special heating treatment.

This method was particularly implemented to save wines and beers from diseases by heating at 55°C.



## Silk Worm Diseases

- ❖ The silkworm disease destroyed the silk industry all over the world in 1865. Although, Pasteur had no idea about silkworms but he was asked by the Department of Agriculture to investigate this disease.
- ❖ His microscopic study of the worms revealed that the disease was caused by shiny corpuscles.
- ❖ He further established that two types of the diseases Pabrine and Flacherie were hereditary and contagious as well.
- ❖ He invented cellular egg production to terminate the disease.
- ❖ His study of silkworm diseases laid foundation for prophylaxis rules and provided solution for hereditary and contagious problems, and also inspired him to discover germs theory.

## **Germ Theory of Disease**

The discovery of the germ theory of disease remains the pinnacle of Louis Pasteur's scientific career.

With his use of microbiology for medicine and surgery he proved that many diseases were caused by the presence of foreign microorganisms.

In that connection, he carefully studied and discovered various infectious diseases such as staphylococcus, streptococcus and pneumococcus.

He prescribed methods of attenuating microbe virulence (chicken cholera and sheep anthrax).

He followed his discovery of germ theory with the utilization of vaccines to prevent diseases like cholera, anthrax and swine erysipelas.

With his analysis and treatment methods for infectious diseases, Pasteur established the immunology branch of science.

## Rabies

Development of vaccine against rabies or hydrophobia was the last and the most famous success in the long career of Pasteur's research.

Rabies attacked the nervous system and it was considered a dreadful disease for its symptoms and treatment.

At first, Even Pasteur failed to find and isolate the germ, but with his excellent experimental method he built an invisible micro-organism to attenuate the virulence.

He used the micro-organism to rabbit marrow successfully.

Then, for the first time on July 6th, 1885 he treated 9-years old Joseph Meister with his anti-rabies vaccine and the kid recovered perfectly.

This milestone transformed Pasteur into a legend.

In 1888, Pasteur Institute was inaugurated in Paris for treatment of rabies and other diseases. Louis Pasteur - the French National hero, died in 1895 at Marnes la Coquette.