



## FOOD SCIENCE AND INDUSTRIES NO. 8

E.A. ZOTTOLA

In order to understand the science of microbiology it is necessary to become familiar with some of the terminology used in the study of microorganisms. The definitions of some of the more commonly used terms are listed as follows:

Aerobe - Microorganisms that require air (oxygen) for growth.

Agar - An extract of algae that is used as a solidifying agent in microbiological media.

Anaerobe - Microorganisms that grow without oxygen (air).

facultative anaerobe - able to grow with or without oxygen (air).

obligate anaerobe - will grow only in the absence of oxygen (air).

Antibiotic - A substance that inhibits the growth of microorganisms usually produced by other organisms such as penicillin.

Antigen - A substance that stimulates formation of antibodies in the animal organism under suitable conditions.

Antibody - Any substance in the body which exerts a specific restrictive or destructive action on microorganisms or other harmful products such as toxins. Combines with antigens to neutralize their effect.

Antiseptic - A substance that prevents or inhibits the growth of microorganisms; a substance used to kill microorganisms on animate surfaces, such as skin.

Asepsis - Clean and free of microorganisms.

Autoclave - An apparatus using pressurized steam for sterilization.

Bacillus - A rod-shaped bacterium; a genus of the family Bacillaceae.

Bactericide - Any agent that destroys bacteria.

Bacteriophage - Viruses that infect bacteria and lysis the bacterial cell.

Bacteriostatic - Preventing the growth of bacteria without killing them.

Botulism - Food poisoning due to the toxin of Clostridium botulinum.

Breed Count - A microscopic method of counting bacteria in a dried, stained film of milk (also called DMC).

Buffer - Any substance in a fluid which tends to resist the change in pH (hydrogen-ion concentration) when acid or alkali is added.

Carrier - A person in apparent good health who harbors a pathogenic microorganism.

Centrifuge - An apparatus that uses centrifugal force to separate or remove particulate matter suspended in a liquid.

Chemotherapy - The treatment of disease by use of chemicals.

Coagulase - An enzyme produced by pathogenic

## GLOSSARY OF MICROBIOLOGICAL TERMS

staphylococci, causing coagulation of blood plasma.

Coagulation - Formation of a clot or gelatinous mass.

Coccus - (pl.: cocci) A spherical bacterium.

Colony - A macroscopically visible growth of microorganisms on a solid culture medium.

Communicable - Refers to a disease whose causative agent is readily transferred from one person to another.

Contamination - Entry of undesirable organisms into some material or object.

Culture - A population of microorganisms cultivated in a medium.

pure culture - Single kind of microorganism.

mixed culture - Two or more kinds of microorganisms grown together.

Culture Medium (pl.: media) - Any substance or preparation suitable for and used for the growth and cultivation of microorganisms.

selective medium - A medium composed of nutrients designed to allow only growth of a particular type of microorganism.

broth medium - A liquid medium for growth of microorganisms.

agar medium - Solid culture medium.

Dilution - The process of increasing the proportion of solvent or diluent (liquid) to solute or particulate matter (solid).

Diplococci - Cocci occurring in pairs.

Disinfectant - An agent that frees from infection by killing the vegetative cells of microorganisms.

Endotoxin - A toxin produced within an organism; liberated only when the organism disintegrates.

Enteric - Pertaining to the intestines.

Enterotoxin - A toxin specific for cells of the intestine. Gives rise to symptoms of food poisoning.

Enzyme - An organic catalyst formed by a living cell.

Exotoxin - A toxin excreted by a microorganism into the surrounding medium.

Flagellum - A flexible, whiplike appendage on cells used as an organ of locomotion.

Flora (microflora) - Microorganisms present in a given situation. (i.e., intestinal flora, soil flora).

Food Poisoning - A general term applied to all stomach or intestinal disturbances due to food contaminated with certain microorganisms or their toxins.

Germ - A microorganism; a microbe usually thought of as a pathogenic organism.

Germicide - An agent capable of killing germs.

Host - The plant or animal harboring another as a parasite or as an infectious agent.

- Immune - Resistant to disease.
- Incubation - Holding cultures of microorganisms under conditions favorable to their growth.
- Incubation Time - The elapsed time between exposure to infection and the appearance of disease symptoms or the time period during which microorganisms inoculated into a medium are allowed to grow.
- Infection - A pathological condition due to the growth of microorganisms in a host.
- Inhibition - Prevention of growth or multiplication of microorganisms.
- Inoculate - The artificial introduction of micro-organisms into a system.
- Inoculum - The material containing micro-organisms used for inoculation.
- Lethal - Capable of causing death.
- Lysis - The distribution or breaking up of cells by either internal or external means.
- Macroscopic - Visible without the aid of a microscope.
- Magnification - The number of times the apparent size of an object has been increased by the lens system of a microscope.
- Microbe - A microscopic organism belonging to either the plant or animal kingdom.
- Morphology - The branch of biological science that deals with the study of the structure and form of living organisms.
- Nutrient - A substance that can be used as food.
- Organic Matter - Compounds containing carbon.
- Osmosis - The passage of a fluid through a semi-permeable membrane as a result of osmotic pressure.
- Parasite - An organism that derives its nourishment from a living plant or animal host. Does not necessarily cause disease.
- Pathogenic - Capable of producing disease.
- Petri Dish - A double glass or plastic dish used in cultivating microorganisms.
- Plasma - The fluid portion of blood.
- Polluted - Containing fecal material; usually refers to the presence of coliform bacteria.
- Portal - Place of entrance.
- Prophylactic - Preventive treatment for protection against disease.
- Proteolytic - Capable of splitting or digesting proteins into simpler compounds.
- Protozoa - Single-celled microorganisms belonging to the animal kingdom.
- Ptomaines - Alkaloid-like substances formed in the decomposition of dead organic matter.
- Putrefaction - Decomposition of proteins by micro-organisms, producing disagreeable odors.
- Sanitize - To reduce the microbial flora in or on articles such as eating utensils to levels judged safe by public health authorities.
- Saprophyte - An organism living on dead organic matter.
- Spirillum - A spiral or corkscrew-shaped bacterium..
- Spore - A resistant body formed by certain micro-organisms; resistant resting cells.
- mold spores - Unicellular reproductive bodies.
- Stain - A dye used to color microorganisms as an aid to visual inspection.
- Staphylococci - Spherical bacteria (cocci) occurring in irregular, grapelike clusters.
- Sterile - Free of living organisms.
- Sterilization - The process of making sterile; the killing of all forms of life.
- Strain - A pure culture of bacteria composed of the descendants of a single isolation.
- Streptococci - Cocci that divide in such a way that chains are formed.
- Toxin - A poisonous substance elaborated by certain microorganisms.
- Turbid - Cloudy.
- Vaccine - A suspension of disease-producing microorganisms modified by killing or attenuation so that it will not cause disease and can stimulate the formation of antibodies upon inoculation.
- Vegetative Cells - Stage of active growth of the microorganism.
- Viable - Living.
- Virulence - The capacity of a microorganism to produce disease.
- Virus - An obligate intracellular parasitic microorganism smaller than bacteria.

REFERENCE: M. J. Pelczar, Jr. and R. D. Reid,  
Microbiology, 2nd ed., 1965.

---

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Roland H. Abraham, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55101.