GLOSSARY[1]

acid—a substance containing a high concentration of hydrogen ions, which creates a pH value less than 7.0

activated carbon—charcoal that has been burned in the absence of oxygen to increase the adsorptive surface area of the carbon

active modification—replacement of air within a package with an atmosphere high in carbon dioxide or nitrogen and low in oxygen by removal of oxygen and replacement with carbon dioxide or nitrogen

adsorption—adhesion of a substance to the *surface* of a solid or liquid

aerosols—suspended droplets of liquid containing microorganisms; often caused by splashing water against contaminated surfaces in a food processing environment

alkaline—a substance with a relatively low concentration of hydrogen ions, which creates a pH value greater than 7.0

ATP bioluminescence—adenosine triphosphate (ATP) is an energy molecule found in all organic substances. When luciferin/luciferase enzyme (found in fireflies) reacts with ATP, light is released. Measuring light intensity (ATP bioluminescence) with a luminometer provides an indication of the level of biological residue on a surface.

bacteria—microscopic, single-celled organisms found in soil, air, water, and the intestinal tract and mucous membranes of animals and humans; these cells multiply by dividing in two (binary fission)

biofilm—an invisible layer of organic secretions, attached to surfaces that appear to be clean and sanitary, that harbours living bacteria cells; can be difficult to remove during cleaning sanitation procedures

Canadian Food Inspection Agency (CIFA)—the federal agency responsible for the enforcement of the policies and standards under the Agriculture and Agri-Food Administrative Monetary Penalties Act, Canada Agricultural Products Act, Canadian Food Inspection Agency Act, Feeds Act, Fertilizers Act, Fish Inspection Act, Health of Animals Act, Meat Inspection Act, Plant Breeders' Rights Act, Plant Protection Act, Seeds Act, and the Consumer Packaging and Labelling Act, and the enforcement of the Food and Drugs Act as they relate to food; focuses on federally registered establishments that engage in interprovincial and export trade.

[1] These definitions are specific to the context of this Guidebook.

Canadian General Standards Board (CGSB)—an agency of the Government of Canada, it offers independent certification services. It is the auditing body for the *GMP Advantage*, *HACCP Advantage* and *HACCP Advantage Plus+* programs.

Canadian Horticultural Council (CHC)—a voluntary, not-for-profit, national association representing producers and packers of over 120 horticulture crops including fruit, vegetables, flowers and ornamental plants

Center for Science in the Public Interest (CSPI)—a U.S. consumer advocacy group that focuses on food and nutrition issues

chelating agent—an organic compound that keeps metals in water from combining; also known as sequestering agents, chelating agents prevent metal buildup that causes staining

chemical agent—a compound that increases the effectiveness of water in removing soil and other foreign materials from surfaces

cleaning—the process of removing surface dirt, debris and associated bacteria from a surface by washing with water and detergent

clean-in-place (CIP)—a continuous system whereby cleaning or sanitizing agents are recirculated through intact machinery

clean-out-of-place (COP)—a cleaning and sanitizing system used for equipment that can be disassembled and placed in a soak or circulating tank

Codex Alimentarius Commission—an international organization created in 1963 by the Food and Agriculture Organization and the World Health Organization to protect the health of consumers, ensure fair food trade practices, and promote co-ordination of all food standards work undertaken by international governmental and non-governmental organizations

condensate—water that has been produced by the cooling of steam or water vapour

critical control points (CCPs)—a point, step or procedure in a food manufacturing process at which a control measure can be applied to eliminate, prevent, or reduce a food safety hazard to an acceptable level

cross-contamination—the physical movement, or transfer, of harmful microorganisms or trace allergen products from one person, object, food or place to another

effluent—liquid or waterborne waste of industrial or commercial origin that has been treated

enteric pathogens—illness or disease-causing microorganisms found in the intestinal tract of humans

fat-oil-grease buildup (FOG)—the accumulation of grease in sumps, drains and traps

Food and Agriculture Organization (FAO)—an agency of the United Nations serving both developed and developing countries, it helps developing countries and countries in transition modernize and improve agriculture, forestry and fisheries practices and ensure good nutrition for all

Food Safety Enhancement Program (FSEP)—the Canadian Food Inspection Agency's (CFIA) program to encourage and support the development, implementation and maintenance of Hazard Analysis Critical Control Point (HACCP) systems in all federally registered establishments of the meat, dairy, honey, maple syrup, processed fruit and vegetable, shell egg, processed egg and poultry hatchery sectors

food spoilage microorganisms—fungi and bacteria that impair the flavour, aroma and appearance of a food; they include *Pseudomonas* spp., lactic acid bacteria such as *Leuconostoc mesenteroides* and *Lactobacillus* spp., *Erwinia herbicola*, *Flavobacterium, Xanthomonas, Enterobacter agglomerans*, yeasts and moulds; the type and magnitude of microbial growth can vary greatly for different produce items and storage conditions

fungi—parasitic organisms that lack chlorophyll, they grow on living or dead organisms; yeast, moulds, rusts, mildews, smuts and mushrooms are types of fungi

Good Agricultural Practices (GAPs)—systematic approaches to prevent or control contamination of crops during growing, harvesting and transporting. Key areas of concern include prior land use, adjacent land use, water quality and use practices, soil fertility management, wildlife, pest and vermin control, worker hygiene and sanitary facilities, and harvesting and cooling practices.

Good Manufacturing Practices (GMPs)—the basic, universal conditions that control hazards related to personnel and the food manufacturing environment; GMPs create conditions favourable for the production of safe food

Granular Activated Carbon (GAC)—a relatively loose bed of activated carbon granules used for liquid or gas filtration. Because the carbon grains are loosely held, open paths may be created, shortening contact time and making filtration less effective.

HACCP (Hazard Analysis Critical Control Points)—an internationally recognized, science-based, food safety program designed to reduce, prevent, or eliminate potential biological, chemical, and food safety hazards directly related to the food being processed or the manufacturing process

heterotrophic—organisms capable of deriving energy for life processes only from the decomposition of organic compounds, and incapable of using inorganic compounds as sole sources of energy or for organic synthesis

heterotrophic plate count (HPC)—procedure for estimating the total number of live heterotrophic bacteria in a sample. Used as an indicator of poor general biological quality, this test detects a broad group of bacteria including non-pathogens, pathogens and opportunistic pathogens, but it does not pretend to report all of the bacteria in the sample.

inorganic—derived from mineral sources; examples include sand, salt, iron and calcium salts

luminometer—a sensitive photometer used for measuring very low light levels

Material Safety Data Sheets (MSDS)—fact sheets designed to reflect the hazards of working with and/or storing a particular chemical, they provide workers with information such as physical data, toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment and spill/leak procedures.

microbe—another word for a microorganism

microorganisms—living entities that are too small to be visible to the naked eye; they include bacteria, viruses, protozoa, and fungi such as yeasts and moulds

microbiological—an adjective used to express an attribute relating to microorganisms e.g., the microbiological quality of water

modified atmosphere packaging (MAP)—packaging that allows the exchange of gases and moisture to produce the optimal storage environment to slow product deterioration and to maximize protection from food safety contaminants

moulds—multicellular organisms that form fuzzy or powdery patches (mycelium) on organic matter such as fruits and vegetables; moulds are fungi

non-potable water—water that is unsafe to drink because it contains pollutants, contaminants, minerals or disease-causing microorganisms

organic—carbon-containing compounds obtained from plant or animal sources

parasites—organisms that obtain nourishment from a living plant or animal in order to grow and reproduce, usually to the detriment of the host

passive modification—replacement of air within a package with an atmosphere high in carbon dioxide or nitrogen and low in oxygen by oxygen depletion through normal respiration

pathogen—a microorganism that is capable of causing illness or disease when it enters the human body

pathogenic microorganisms—illness- or disease-causing bacteria, protozoa, viruses or fungi

personal protective equipment (PPE)—equipment or clothing worn to prevent injury or illness from occurring while handling hazardous materials

pest control operator (PCO)—person or company that is licensed to apply pesticides as a business

pH—the acidity or alkalinity of a liquid measured by the concentration of free hydrogen ions and expressed on a logarithmic scale. If the pH is below 7.0, the solution is acidic (the lower the number, the greater the degree of acidity); if it is above 7.0, the solution is alkaline (the higher the number, the greater the level of alkalinity); a pH of 7.0 is neutral (neither acid nor alkaline).

physical agent—includes heat, cold, noise, radiation, electricity, etc. that can occur naturally or can be produced e.g., heat is a physical agent that be result from weather or be created to kill microorganisms

potable water—water that is safe for drinking

reverse osmosis (RO)—a process in which water is forced under pressure through a synthetic semi-permeable membrane under pressure to remove unwanted substances

Sanitation Standard Operating Procedure (SSOP)—written step-by-step procedures that describe in detail how cleaning and sanitation procedures should be done to comply with Good Manufacturing Practices requirements related to cleaning and sanitation

sanitizing—use of heat or chemicals to reduce the number of microorganisms on a clean surface to safe levels

schmutzdecke—the complex biological layer of bacteria, fungi and protozoa formed on the surface of slow sand filter beds that provides effective purification in potable water treatment

senescence—the process of deterioration in quality in stored, respiring fruits and vegetables after harvesting

sewage—waste of domestic origin (human body waste, and waste from showers, tubs, sinks and laundry)

Solid Block Activated Carbon (SBAC)—created by compressing very fine activated charcoal with a binding medium and fusing them into a solid block. The intricate maze created ensures complete contact with impurities and their effective removal.

Standard Operating Procedures (SOPs)—written step-by-step procedures that describe in detail how a procedure should be done to comply with Good Manufacturing Practices requirements, except those related to cleaning and sanitation

surfactant—an agent that reduces the surface tension of a liquid (usually water) to permit the penetration of cleaning compounds by increasing the emulsifying, foaming, dispersing, spreading and wetting properties of a product; reduces the surface tension between two liquids

Total Plate Count (TPC)—another term for Heterotrophic Plate Count (HPC) test

trihalomethanes (THMs)—A group of low-molecular-weight, halogenated hydrocarbons, derivatives of methane (CH_4), in which three halogen atoms (chlorine, bromine or iodine) are substituted for three of the hydrogen atoms. The group includes suspect human carcinogens. Small amounts of THMs have been detected in raw water collected from surface sources used as a public water supply, and concentrations have been shown to be increased during the chlorination phase of the water purification process.

turbidity—cloudiness in water caused by suspension of clay, silt, other finely divided organic and inorganic matter, and microscopic organisms

U.S. Centers for Disease Control and Prevention (CDC)—as one of the 13 major operating components of the U.S. Department of Health and Human Services (HHS), it conducts research and investigations to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities and environmental health threats.

United States Food and Drug Administration (USFDA)—federal regulatory agency for food, drugs, medical devices, biologics, animal feed and drugs, cosmetics, and radiation-emitting products in the United States

virus—an ultramicroscopic piece of nucleic acid (DNA or RNA) wrapped in a thin coat of protein that can be seen only with an electron microscope; very infectious and often pathogenic, a virus reproduces by inserting itself into a living host cell and altering the function of that cell

wastewater—water that has been adversely affected in quality by human, industrial, agricultural or commercial processes

Workplace Hazardous Materials Information System (WHMIS)—a comprehensive national system for safe management of hazardous chemicals that is legislated by both the federal and provincial governments. Under WHMIS legislation, all suppliers (manufacturers, importers, packagers and processors) are required to label and prepare Material Safety Data Sheets (MSDSs) for products they make, import, package or process that meet the hazard criteria set out in the Controlled Product Regulations under the federal Hazardous Products Act.

World Health Organization (WHO)—specialized agency of the United Nations that acts as a co-ordinating authority on international public health; 192 countries are members

yeast—a unicellular fungus that grows spherical or oval single cells rather than mycelium; can be either beneficial or detrimental in food processing