Health Management in Aquaculture: Glossary

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abscess – a collection of pus in a body cavity formed by tissue disintegration

acute – rapid and severe in development

aflatoxicosis – the disease resulting from exposure of animals to aflatoxin-contaminated diets

aflatoxin – a highly toxic substance produced by fungi growing on feed or feed ingredients

agglutination – reaction between antibody and cell-bound antigen resulting in clumping of the cells

amino acid – basic component of protein

amnesic shellfish poisoning (ASP) – a phycotoxic syndrome characterized by memory loss with extreme cases of human intoxication from shellfish contaminated by domoic acid (DA).

anchor – used for attachment to the host

anchoring disc – a laminar structure at the anterior end of a microsporean spore

anemia – a condition characterized by a deficiency of hemoglobin, packed cell volume, or erythrocytes in the blood

anorexia – loss of appetite

antibody – a glycoprotein produced in response to the introduction of an antigen; it has the ability to combine with the antigen that stimulated its production. Also known as immunoglobulin.

antigen – a foreign (nonself) substance (such as a protein, nucleoprotein, polysaccharide or sometimes a glycolipid) to which lymphocytes respond; also known as immunogen because it induces the immune response

antioxidant – a substance that chemically protects other compound against oxidation; for example, vitamin E prevents oxidation and rancidity of fats

antiserum – serum containing induced antibodies

asexual – reproduction not involving karyogamy or meiosis.

ascites – the accumulation of serum-like fluid in the abdomen.

asphyxiation – deficiency of oxygen

atrophy – a degeneration or diminution of a cell or body part due to disuse, defect, or nutritional deficiency

axenic – without another organism being present; pure culture

backwash – to clean by reversing water flow

bacteria – one-celled microorganisms which lack well-defined nucleus

bioassay – biological assay; a procedure involving the use of responses of aquatic organisms to detect or measure the presence or effect of one or more substances
biotroph – refer to obligate parasite.
blister – a thin vesicle, especially on the skin, containing watery matter
carotenoid – a class of pigments occurring in the tissues of algae and higher plants
carrier – one that transmits disease germs
cartridge filter – tubular filter device made up of spun polypropylene material inserted inside a filter housing case
cataract – development of partial or complete opacity of the crystalline lens of the eye or its capsule.
cercariae – free-swimming larval stage of digeneans
chemotherapy – use of a specific chemical agent to control a disease
chronic – lingering
ciguatera fish poisoning (CSP) – a seafood poisoning which results from consumption of tropical reef fish contaminated by ciguatoxins and characterized by a wide array of gastrointestinal and neurological symptoms
ciguatoxins (CTX) – a kind of toxin produced by benthic dinoflagellates found in corals. It is a family of complex lipid-soluble, highly oxygenated cyclic polyether compounds
cilia – short, hair-like structures used for movement
clonal selection theory – the theory that clones of effector B and T cells arise from single cells (or very small clones) that are stimulated to reproduce by antigen binding to their receptors
clone – a group of genetically identical cells or organisms derived by asexual reproduction from a single parent
coccon – a brooding capsule for leech eggs
coelozoic parasites – parasites which occur in organ cavities
coenocytic – nonseptate; referring to the fact that nuclei are present in the cytoplasm without being separated by cross-walls; the nuclei lie in a common matrix.
commensalism – a relationship wherein one organism lives and derives benefit on another organism without causing any harm
complementary – nonidentical but related genetic structures that show precise base pairing
conidiophore – a simple or branched hypha arising from a somatic hypha and bearing at its tip or side one or more conidiogenous cells.
conidium (pl. conidia) – a non-motile asexual spore usually formed at the tip or side of a sporogenous cell.
cepods – small planktonic or bottom dwelling crustaceans
cross-contamination – transmission of disease or disease agent from one tank to another
cutaneous lesion – lesion on the skin
cyanobacterial toxic poisoning (CTP) – poisoning due to cyanobacteria which produce a diverse range of secondary metabolites including hepatotoxins, neurotoxins and cytotoxins
cyst – a non-motile, resistant, dormant stage
debris – organic waste from dead cells or unused food
definitive host – the host in which the parasite undergoes sexual reproduction
denaturation – a change in the shape of an enzyme that destroys its activity; the term is also applied to changes in nucleic acid shape
deoxyribonucleic acid (DNA) – the nucleic acid that constitutes the genetic material of all cellular organisms. It is a polynucleotide composed of deoxyribonucleotides connected by phosphodiester bonds
diagnosis – the act of identifying the cause of disease
diarrhetic shellfish poisoning (DSP) – a complex gastro-intestinal syndrome associated with the consumption of contaminated shellfish by humans
dinoflagellates – are group of unicellular eukaryotic organisms which swims by means of a pair of whip-like flagella
disease – an abnormal occurrence displayed by living organisms through a specified common characteristic (symptom), or set of characteristics
DNA polymerase – an enzyme that synthesizes new DNA using a parental DNA strand as a template
domoic acid (DA) – a naturally occurring compound belonging to kainoid class of compounds that has been isolated from a variety of marine sources including macro and micro-algae
dropsy – ascites; abnormal accumulation of liquid in internal organs or tissues
DSP toxins (DSPTX) – are liquid-soluble long chain compounds containing tans-fused or spiro-linked cyclic polyether rings
dystrophy – abnormal development or degeneration
ectoparasite – parasite living in the external surfaces of the host
edema – excessive accumulation of fluid in tissue spaces
encapsulation – the covering of a parasite by the host
encystment – the covering of a parasite with materials of parasite origin
endemic – recurring in a locality
endoparasite – parasites living inside the body of the host
endospore – the thick inner chitinous layer of the wall in a microsporean spore
endotoxin – a toxin of internal origin present in bacteria but separable from the cell body only on its disintegration
enteritis – the inflammation of the intestine
enzyme – a protein catalyst with specificity for both the reaction catalyzed and its substrates
Enzyme-linked Immunosorbent Assay (ELISA) – a technique used for detecting and quantifying specific antibodies and antigens
epizootic – widespread outbreak of fish diseases
etiology – the study of the cause of disease
epithelialm – abnormal protrusion of the eyeball
exopthalmus – abnormal protrusion of the eye.
exospor – the proteinaceous outer layer of the wall in a microsporean spore
exotoxin – a soluble toxin that passes into the medium during growth of certain bacilli or other microorganisms
facultative parasite – a saprobic organism capable of infecting another living organism under some conditions
facultative saprobe – a parasitic organism capable of growing on dead organic matter under some conditions
fibrosis – inflammatory response; in shrimp hepatopancreas, characterized by the presence of connective tissues in between the tubules
flagella – long, hair-like structures used for locomotion
formalin – a 37% solution of formaldehyde
fungus – a general term for a group of eukaryotic protista (e.g., mushrooms, yeasts, molds etc.) marked by the absence of chlorophyll and the presence of a rigid cell wall
gel – an inert polymer, usually made of agarose or polyacrylamide, used for separating macromolecules such as nucleic acids or proteins by electrophoresis
gene – a unit of heredity; a DNA segment or sequence that codes for a polypeptide, rRNA or tRNA
genetic manipulation – selective breeding of organisms that are resistant to disease or those that grow larger or faster
genome – the full set of genes present in a cell or virus; all the genetic material in an organism.
ahalophilic – a microorganism whose growth is accelerated or dependent on high salt concentration
hemocyanin – a colorless copper-containing respiratory pigment found in solution in the blood plasma of various arthropods and molluscs
hemocyte – a blood cell
hemocytic infiltration – inflammatory response; in shrimp hepatopancreas, characterized by presence of hemocytes in between the tubules
hemoglobin – the respiratory pigment of red blood cells that takes up oxygen at the gills or lungs and releases it to tissues
hemorrhage – discharge of blood from a ruptured blood vessel
hemorrhage – internal bleeding and subsequent clotting caused by the rupture of blood vessels
hepatopancreas – a glandular structure in animals that functions in digestion, absorption, and storage
heterotrophs – organisms which use organic compounds as primary source of energy
holdfast – the attachment organ of some parasites
holocarpic – having all the thallus used for the fruit body.
homeostasis – a condition whereby animals maintain a relatively stable internal environment
host – a living organism harboring another organism
hyaline – transparent or transluscent.
hybridization – the natural formation or artificial construction of stable hybrid nucleic acid complexes by complementary base pairing between two nucleic acid strands
hybridoma – the fusion of a malignant cell with a single B-lymphocyte to produce a malignant lymphocyte producing monoclonal antibody
hyperemia – abnormal accumulation of blood in any part of the body
hyperplasia – an abnormal or unusual increase in the number of cells of a tissue
hypertrophy – an increase in size of a tissue or an organ due to an increase in size of individual cells
hypha – the unit of structure of most fungi; a tubular filament.
immunization – process that equip an organism with antibodies effective against specific pathogens, by provoking their manufacture in the absence of infection
incubation period – period from entry of a pathogen to the appearance of the first signs of disease
infection – a pathological condition due to the growth of microorganisms in a host
infestation – a pathological condition due to the presence of parasites
inflammation – a tissue reaction resulting from an irritation by a foreign material and causing a migration of leukocytes and increased flow of blood to the area, producing swelling, reddening, heat, pain and tenderness
ischemia – localized tissue anemia due to obstruction of the inflow of blood
intermediate host – a host in which the larval stages of a parasite develop
intracellular – situated or occurring inside a cell
karyomastigont – the unit of mastigons and associated nucleus
ketoplast – the part of the mitochondrion which contains DNA; located near the base of the flagellum and is conspicuous after staining
LC50 – medial lethal concentration
lesions – any morbid change in function or structure of an organ or tissue
lethargy – weakness or sluggishness
lordosis – the abnormal forward curvature of the vertebral column
macronucleus – a large nucleus in ciliates which controls trophic functions
mastigont – a complex of flagella-associated organelles in flagellated protozoans, including basal bodies (also called kinetosomes) and projecting and trailing flagella
melanization – inflammatory response characterized by the abnormal accumulation of melanin
melanized – abnormal development of dark coloring matter in the skin
metacercariae – encysted cercariae of digeneans
monoclonal antibody – an antibody of a single type that is produced by a population of genetically identical plasma cells (a clone); produced from a cell culture derived from the fusion product of a cancer cell and an antibody producing cell (a hybridoma)
muscular dystrophy – degenerative disease of the muscles
mutualism – a relationship wherein two organisms benefit from each other
mycelium – mass of hyphae constituting the body (thallus) of a fungus
mycosis (pl. mycoses) – a fungus infection of an animal.
myeloma cell – a malignant tumor of a plasma cell that produces large quantities of antibodies
myopathy – degeneration or atrophy of the muscles
necrosis – localized death of a tissue
necrotized – dead or decayed
neurotoxic shellfish poisoning (NSP) – shellfish poisoning caused by polyether brevetoxins produced by the unarmoured dinoflagellates Gymnodinium breve
neurotoxin – toxin that affects the nervous system
Northern Blot – hybridization of a single strand of nucleic acid (DNA or RNA) to RNA fragments immobilized on a filter
nucleic acid hybridization – the process of forming a hybrid double-stranded DNA molecule using a heated mixture of single-stranded DNAs from two different sources; if the sequences are fairly complimentary, stable hybrids will form
nucleotide – a monomeric unit of nucleic acid, consisting of a sugar, phosphate and nitrogenous base

obligate parasite – an organism that can, in nature, obtain food only from living protoplasm; organisms considered as obligate parasites usually cannot be grown in culture or non-living media

oncomiracidium – the free-swimming stage of monogeneans

oviparous – an organism that lays eggs

paralytic shellfish poisoning (PSP) – a neurotoxic syndrome resulting primarily from the blockage of neuronal and muscular Na+ channels

parasite – an organism that lives at the expense of another, usually invading it and causing disease.

parasitism – a one-way relationship in which a smaller organism (parasite) depends upon and benefits from the bigger (host) organism

paratenic host – a transport host in which the larval stage of a parasite undergoes no development and its only function is to transfer the parasite to the next host

parenteral – injection method of administering drugs

pathogen – a disease-producing agent

pathogenic – capable of producing disease

polar capsule – a thick-walled vesicle in myxosporeans with an inverted polar filament

Polymerase Chain Reaction (PCR) – an enzymic method for amplifying exponentially specific preselected fragment of DNA; an in vitro technique used to synthesize large quantities of specific nucleotide sequences from small amounts of DNA. It employs oligonucleotide primers complementary to specific sequences in the target gene and special heat-stable DNA polymerases

ppm – parts per million or milligrams per liter or grams per ton

ppt – parts per thousand

precipitation – a reaction between antibody and soluble antigen resulting in a visible mass of antibody-antigen complexes

primer – a short stretch of RNA or DNA used as a starting point for nucleic acid synthesis

probe – a short, labeled nucleic acid segment complementary in base sequence to part of another nucleic acid, which is used to identify or isolate the particular nucleic acid from a mixture through its ability to bind specifically with the target nucleic acid

probiotics – bacteria that promote the growth of an organism or inhibit pathogenic microorganisms

proboscis – a muscular, protrusible feeding organ in some parasitic organisms

procercoid – the first larval stage of many cestodes which develop inside the body cavity of the invertebrate (first) intermediate host

prokaryotic cells – a type of cell whose nuclear substance is not enclosed within a membrane

prophylaxis – preventive action

punctuate – covered or studded with dots, points or minute depressions

quarantine – isolation of material or animal to prevent the spread of infectious disease it carries

rancidity – a condition taking place when the lipids are broken to their constituents through poor storage condition

red tides – reddish-brownish discoloration of the water brought about by sporadic increases in minute or microscopic marine organisms in high density

residual – remaining

ribonucleic acid (RNA) – a polynucleotide composed of ribonucleotides joined by phosphodiester bridges

saxitoxin (STX) – a dibasic salt that is very soluble in water and is the most potent neurotoxin found in dinoflagellate blooms

scolex – attachment organelle of some parasites

scoliosis – lateral curvature of the spine

secondary zoospore – kidney-shaped zoospore produced in Oomycota; the flagella are inserted laterally on the spore.

septate – with more or less regularly occurring cross walls.

septicemia – a systemic disease caused by the invasion and multiplication of pathogenic microorganisms in the blood stream

septum (pl. septa) – a cross-wall in a hypha that develops cetripetally.
**serological method** – process which deals with antigen-antibody reaction

**serology** – the study of antigen-antibody reactions in vitro

**shell valve** – one of the parts of the myxosporean spore wall

**soma** – the body of an organism as distinguished from its reproductive organs or reproductive phase.

**Southern Blot** – the procedure used to isolate and identify DNA fragments from a complex mixture. The isolated, denatured fragments are transferred from an agarose electrophoretic gel to a nitrocellulose filter and identified by hybridization with probes

**sporangiophore** – a specialized hypha that bears a sporangium.

**sporangium** – a sac-like structure, the entire protoplasmic contents of which become converted into an indefinite number of spores.

**spore** – a minute propagative unit functioning as a seed, but differing from it in that a spore does not contain a pre-formed embryo.

**spore** – the infective stage of an organism that is usually protected from the environment by one or more protective membranes

**sporoplasm** – the infectious component in spores

**stigma** – a pigmented red spot in flagellates

**stramenopila** – a new Kingdom to accommodate most organisms previously referred to the Kingdom Chromista and primarily characterized by the presence of tripartite tubular hairs on flagella or cysts.

**straminipilous organisms** – bearing tripartite tubular hairs; applicable to flagella and/or cells, whether uniflagellate, multiflagellate or non-flagellate (e.g. cysts)

**stress** – a factor of an environmental challenge that is severe enough to require a physiological response on the part of the fish

**susceptible** – disposition to disease

**symbiosis** – a condition in which two organisms live together

**symptom** – a physical or physiological change which is caused by a particular disease

**thrombosis** – the formation of presence of a blood clot within a blood vessel

**titer** – reciprocal of the highest dilution of an antiserum that gives a positive reaction in the test being used

**tomites** – cells within the tomont which result from serial binary division

**tomont** – a cyst-like structure formed by the trophont following detachment from the host

**toxin** – a poison

**trophont** – the feeding and growing stage of a parasitic protozoan which differentiates into the reproductive tomont following detachment

**ulceration** – an open sore on an external or internal surface of the body, usually accompanied by disintegration of tissue with the formation of pus

**UV** – ultraviolet radiation

**vaccination** – the process of introducing 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.

**vacuolated** – containing spaces or cavities in the cytoplasm of a cell

**vector** – any agent that transmits an infectious organism

**virus** – a minute infectious agent which can be resolved or viewed clearly only under a high-powered microscope. It lacks independent metabolism, and is able to replicate only within a living cell

**vitamins** – an organic compound occurring in minute amounts in foods and essential for numerous metabolic reaction in animals

**viviparous** – the bearing of live young

**zoospore** – a motile, asexually produced spore
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