

GLOSSARY

ON BIOTECHNOLOGY AND BIOSAFETY





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A

Adenine: A chemical compound used to make one of the building blocks of DNA and RNA

Advanced Informed Agreement (AIA): A formal agreement between two states or between a state and a group of states belonging to a regional economic integration organization, to transfer any GMO products thereof, based on information supplied by the exporting state, with the explicit understanding that the information is complete and accurate

Advance Informed Agreement procedure: Advance informed agreement (AIA) procedure under the Cartagena Protocol applies to the first intentional transboundary movement of LMOs for intentional introduction into the environment of the Party of import. AIA includes steps of notification by an exporting Party or exporter, acknowledgement of notification and risk assessment and decision making by an importing Party

Adverse effect: Any short or long-term negative impact on the conservation of biological diversity (including agricultural biodiversity) or the sustainable use of its resources, or on human or animal health

Agricultural Biotechnology: An area of study with a range of tools, including traditional breeding techniques, that alter living organisms, or parts of organisms, to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses

Allergen: A substance, usually a protein, that causes an allergy or allergic reaction in the body

Allergy: A reaction by the body's immune system after exposure to a particular substance (an allergen), often a protein

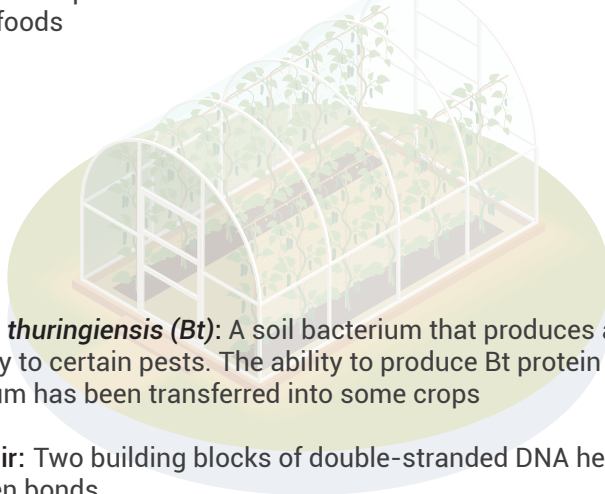
Allele: Any of two or more forms of a gene that in combination control a specific trait (e.g. eye color or blood type)

Amino acid: One of many organic acids containing a basic amino group and an acidic carboxyl group. They are the basic building blocks of protein. Different combinations and sequence of amino acids make different protein types

Antibody: A blood protein produced by our immune system when the body is triggered by an antigen. They are highly specific to the antigens

Antigen: A substance capable of stimulating the production of antibodies. This could be part of a microbe such as bacteria or virus or pollen and certain foods

B



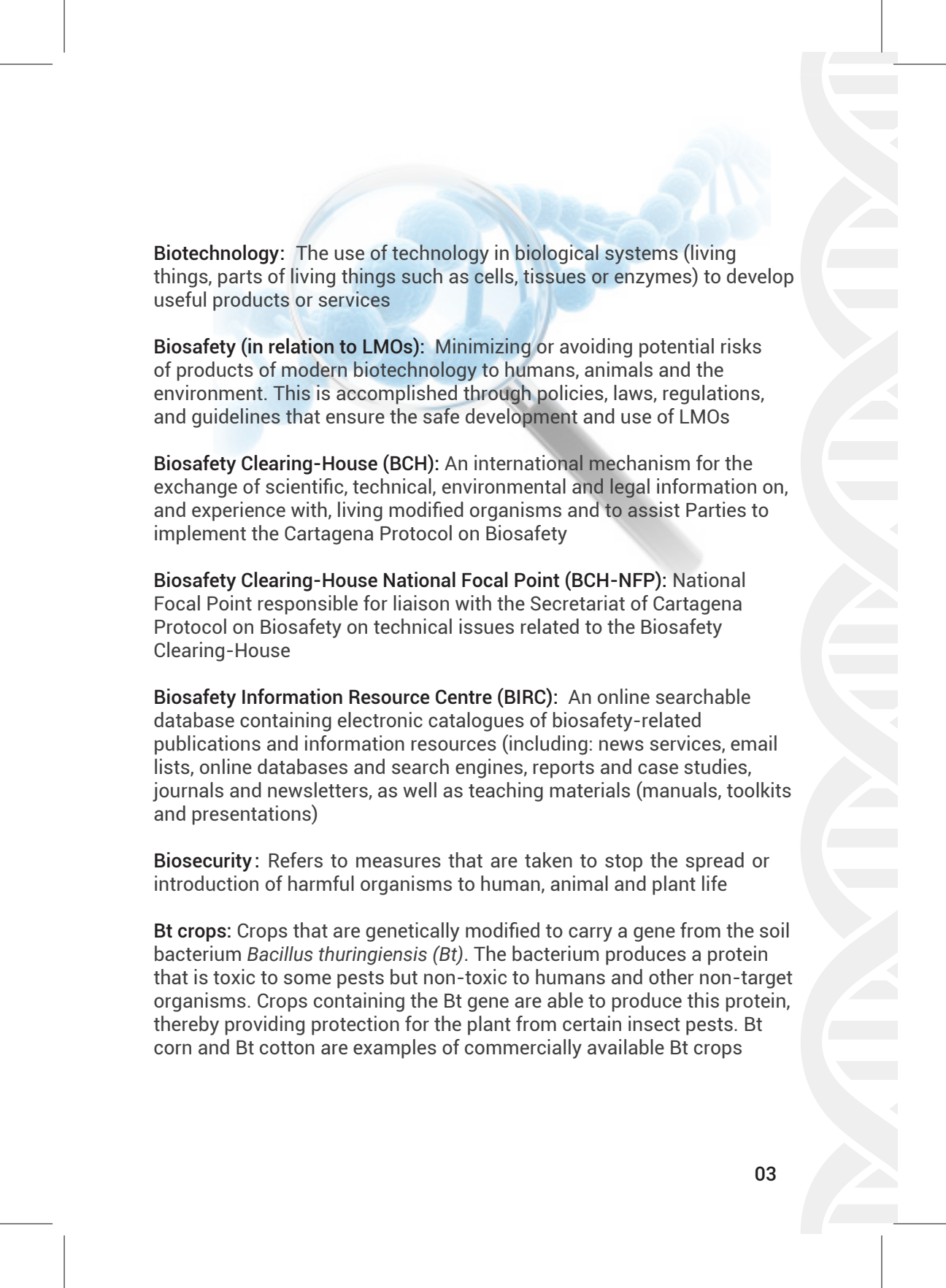
***Bacillus thuringiensis (Bt)*:** A soil bacterium that produces a protein that is deadly to certain pests. The ability to produce Bt protein by this bacterium has been transferred into some crops

Base pair: Two building blocks of double-stranded DNA held together by hydrogen bonds

Biodiversity: The variety of plants, animals and other living things in nature

Bioethics: The study of ethical and moral implications in research activities related to biological fields, e.g. use of animals for research or impact of the research/products to living things

Biopharming: The production of pharmaceuticals such as vaccines and antibodies in plants or domestic animals



Biotechnology: The use of technology in biological systems (living things, parts of living things such as cells, tissues or enzymes) to develop useful products or services

Biosafety (in relation to LMOs): Minimizing or avoiding potential risks of products of modern biotechnology to humans, animals and the environment. This is accomplished through policies, laws, regulations, and guidelines that ensure the safe development and use of LMOs

Biosafety Clearing-House (BCH): An international mechanism for the exchange of scientific, technical, environmental and legal information on, and experience with, living modified organisms and to assist Parties to implement the Cartagena Protocol on Biosafety

Biosafety Clearing-House National Focal Point (BCH-NFP): National Focal Point responsible for liaison with the Secretariat of Cartagena Protocol on Biosafety on technical issues related to the Biosafety Clearing-House

Biosafety Information Resource Centre (BIRC): An online searchable database containing electronic catalogues of biosafety-related publications and information resources (including: news services, email lists, online databases and search engines, reports and case studies, journals and newsletters, as well as teaching materials (manuals, toolkits and presentations))

Biosecurity: Refers to measures that are taken to stop the spread or introduction of harmful organisms to human, animal and plant life

Bt crops: Crops that are genetically modified to carry a gene from the soil bacterium *Bacillus thuringiensis* (*Bt*). The bacterium produces a protein that is toxic to some pests but non-toxic to humans and other non-target organisms. Crops containing the Bt gene are able to produce this protein, thereby providing protection for the plant from certain insect pests. Bt corn and Bt cotton are examples of commercially available Bt crops



C

Candidate gene: A gene proposed to be involved in producing a trait

Cartagena Protocol on Biosafety (Biosafety Protocol): An international agreement negotiated and adopted under the Convention on Biological Diversity. The objective of the Protocol is to ensure safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on transboundary movements

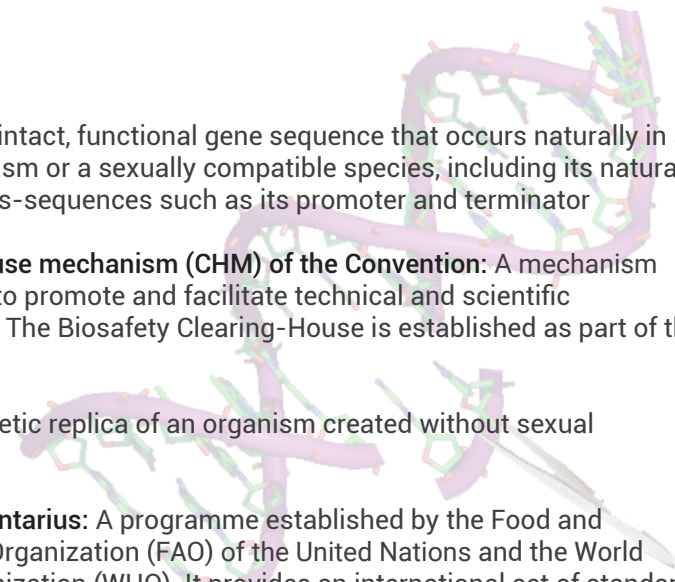
Cartagena Protocol on Biosafety National Focal Point (CPB-NFP): National Focal Point responsible for liaison with the Secretariat on Protocol issues

CAS: A protein used in one of the gene editing tools

Centre of Excellence in Biotechnology: Any governmental or intergovernmental authority with sufficient relevant scientific capacity, designated by a Party to regulate biotechnology and biosafety, to issue and receive notification and make advance informed agreements of transboundary transfers or releases of GMOs or products of thereof, and to issue or withdraw approval for the handling and use of GMOs

Chromosome: The self-replicating genetic structure of cells that carries the genes, which determines inheritance of traits. Chemically, each chromosome is composed of a long molecule of DNA covered by histone proteins

Chromatid: Either of the longitudinal sub-units produced by chromosome replication



Cisgene: An intact, functional gene sequence that occurs naturally in a target organism or a sexually compatible species, including its natural regulatory cis-sequences such as its promoter and terminator

Clearing-house mechanism (CHM) of the Convention: A mechanism established to promote and facilitate technical and scientific cooperation. The Biosafety Clearing-House is established as part of the CHM


Clone: A genetic replica of an organism created without sexual reproduction

Codex Alimentarius: A programme established by the Food and Agriculture Organization (FAO) of the United Nations and the World Health Organization (WHO). It provides an international set of standards, best practices, codes, guidelines and recommendations relating to food quality and safety, including codes governing hygienic processing practices, recommendations relating to compliance with standards, limits for pesticide residues, and guidelines for contaminants, food additives and veterinary drugs

Compliance: Fulfilling the requirements of the terms and conditions of authorization

Co-existence: The ability of farmers to make practical choices between conventional, organic and genetically modified crop production, in compliance with the relevant legislation on labelling rules and purity standards. Co-existence involves the economic implications of "good agricultural practice"

Containment: Refers to the techniques and systems used to limit the environmental exposure of hazardous or potentially hazardous biological agents or their products. Containment measures aim to eliminate the potential risks associated with exposure to such agents. Laboratory practice and techniques, safety equipment, and facility design requirements are key indicators of the level of containment. These levels range from the lowest biosafety level 1 to the highest at level 4



Collaborative Portal: A workspace established to allow its members to communicate, exchange information and work collaboratively on different issues

Competent National Authority: Authority designated and authorized by governments to be responsible for performing the administrative functions required by the Biosafety Protocol, and to act on their behalf with respect to those functions

Conference of the Parties (COP): It is the intergovernmental supreme decision-making body with regard to the implementation of the Convention

Confined field trials or CFTs: When referring to GMOs it involves testing, trying, or putting to proof a new technique or crop variety outside a laboratory but with specific containment requirements, e.g. limited locations, limited plot size, strict operating procedures, preventative measures so that they may not enter the food and feed supply, etc

Contained use: Any operation, undertaken within a facility, installation or other physical structure, which involves living modified organisms that are controlled by specific measures that effectively limit their contact with, and their impact on, the external environment

Convention on Biological Diversity (CBD): An international agreement dedicated to the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources, by appropriate transfer of relevant technologies and by appropriate funding

Convention on Biological Diversity Secretariat: The Secretariat that undertakes functions of the Convention. The Secretariat, which is now based in Montreal, Canada, is charged by the Protocol with additional responsibility to also serve as the Secretariat of the Biosafety Protocol. The Secretariat maintains the Central Portal of the BCH

Convention on Biological Diversity National Focal Points (CBD-NFPs): Are bodies responsible for communication with the CBD Secretariat on a particular topic. The BCH Central Portal only provides the CBD-NFP(s) of a government when no Cartagena Protocol on Biosafety National Focal Point (CPB-NFP) is available

Contained Use Permit: A permit that allows activities involving work with GMOs within a facility where a number of barriers, such as chemical, physical and biological containment methods, limit the contact between the GMO and the external environment. This would include work conducted in greenhouses and laboratories. Certain activities for research and academic purposes conducted under containment levels 1 and 2 are exempt from permit requirements. However these facilities still need to be registered in terms of the GMO Act

Country of origin of genetic resources: The country which possesses those genetic resources in natural environment

CRISPR: A short sequence of DNA that is involved in defense mechanisms in bacteria against virus

Cross-pollination: Fertilization of a plant with pollen from another plant of the same species. Pollen may be transferred by wind, insects, other organisms, or humans

Cytogenetics: The study of the genetic implications of chromosome structure and behavior

Cytosine: A chemical compound used to make one of the building blocks of DNA and RNA



D

Diploid: A cell or organism with two complete sets of homologous chromosomes. An organism that contains two sets of the same chromosomes

DNA (deoxyribonucleic acid): The chemical substance from which genes are made. DNA is a long, double-stranded helical molecule made up of nucleotides which are themselves composed of sugars, phosphates, and derivatives of the four bases, adenine (A), guanine (G), cytosine (C), and thymine (T). The sequence order of the four bases in the DNA strands determines the genetic information contained

Dominant allele: An allele that has greater influence than its partner allele for a given trait

Domestic regulatory framework: A domestic regulatory framework may include national laws, regulations and guidelines for implementation of the Biosafety Protocol

Donor organism: The organism which donates genetic material to the host organism

E

Embryo: An organism in the early stages of development

Emergency Measures Contact Point: This point of contact is set out for the purposes of receiving notifications regarding unintentional transboundary movements of living modified organisms and emergency measures

Enzyme: A protein that catalyzes a specific biochemical reaction and is not itself altered in the process

Enzyme-Linked Immunosorbent Assay (ELISA): A technique that uses antibodies for detecting specific proteins. Could be used to test for the presence of a particular foreign protein in a genetically modified organism

Environmental Impact: Positive or negative impact to the environment caused by any activities of humans or natural phenomenon

Environmental Impact Assessment (EIA): A process of evaluating the likely environmental impacts of a proposed activity taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse


Export of LMOs: An intentional transboundary movement of living modified organisms from one party to another party

Exporter of LMOs: Any legal or normal person, under the jurisdiction of the Party of export, who arranges for a living modified organism to be exported

F

Feed Act: Law that governs all activities related to feed

Field trial: A test of a new technique or variety, including biotech-derived varieties, done outside the laboratory but with specific requirements on location, plot size, methodology, etc. A test where safety of new GM crops to the environment is assessed by planting them under close supervision of scientists and regulators

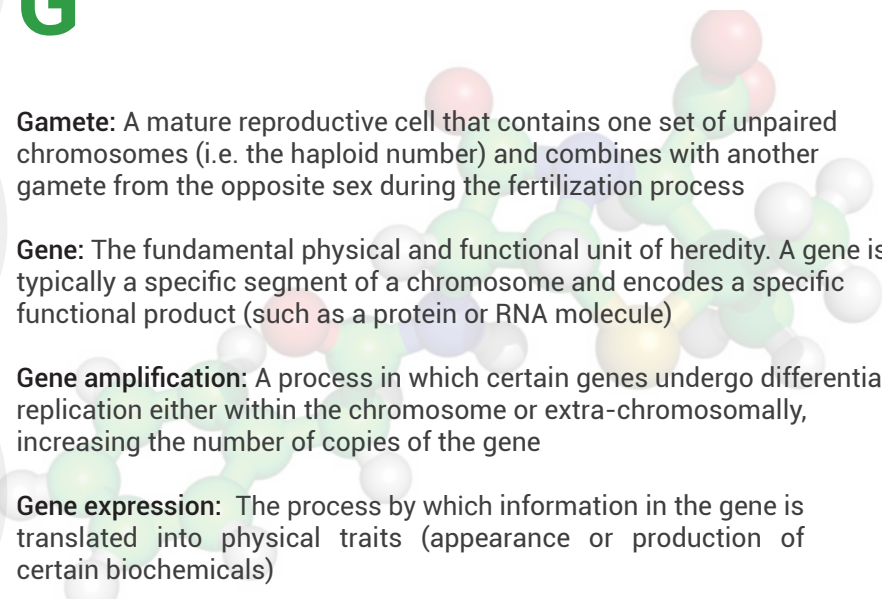


Field Trials Permit: A permit issued which allows the testing of a specific GMO in a designated, limited area under strictly regulated, confined conditions to monitor the performance of the GMO and to generate necessary biosafety data in the field for a specified period of time

Food Act: An Act to regulate and control the manufacture, importation, sale and distribution of food, to establish a Food Advisory Committee, to repeal the Food and Drugs Act of 1949, and to provide for matters connected therewith or incidental thereto

Food Safety: Refers to handling, preparing and storing food in a way to best reduce the risk of individuals becoming sick from foodborne illnesses.

G



Gamete: A mature reproductive cell that contains one set of unpaired chromosomes (i.e. the haploid number) and combines with another gamete from the opposite sex during the fertilization process

Gene: The fundamental physical and functional unit of heredity. A gene is typically a specific segment of a chromosome and encodes a specific functional product (such as a protein or RNA molecule)

Gene amplification: A process in which certain genes undergo differential replication either within the chromosome or extra-chromosomally, increasing the number of copies of the gene

Gene expression: The process by which information in the gene is translated into physical traits (appearance or production of certain biochemicals)

Gene mapping: Determining the relative physical location of genes on a chromosome. Useful for plant and animal breeding

Gene (DNA) sequencing: Determining the exact sequence of nucleotide bases in a strand of DNA to better understand the behavior/function of a gene

Gene pool: The totality of genetic information in a population of organisms

Genetic engineering: Modification of an organism's genetic material by introducing, eliminating or rearranging specific genes using the methods of modern molecular biology/biotechnologies, particularly those techniques referred to as recombinant DNA techniques

Genetic modification/Genetic manipulation: The introduction of genes from unrelated species into an organism through modern biotechnology to confer beneficial traits


Genetics: The study of the patterns of inheritance of specific traits

Genetic marker: Any pair of alleles whose inheritance can be traced through a mating or through a pedigree

Genetically Modified Organism (GMO): An organism produced through genetic modification

Genome: All the genetic material in all the chromosomes of a particular organism

Genomics: Study of the genome. The mapping and sequencing of genetic material in the DNA of a particular organism as well as the use of that information to better understand what genes do, how they are controlled, how they work together, and what their physical locations are on the chromosome



Genomic library: A collection of DNA fragments of a genome that represent the genetic information of an organism that can be propagated and then systematically screened for particular properties. The DNA may be derived from the genomic DNA of an organism or from DNA copies made from messenger RNA molecules. A computer-based collection of genetic information from these biomolecules can be a "virtual genomic library"

Genotype: The genetic makeup of an organism

Genetic material: Any material of plant, animal, microbial or other origin containing functional units of heredity

Genetic resources: Genetic material of actual or potential value

Global Environment Facility (GEF): Is the financial mechanism of the Convention on Biological Diversity as well as the Biosafety Protocol. GEF was established in 1991 to help developing countries fund projects and programs that protect the global environment

Gene drive: A technique where a particular trait is inherited by higher population of the offspring compared to the usual probability of 50%

Gene flow (also referred to as pollen-mediated gene flow in plants): The movement of genes from one individual or population to another genetically compatible individual or population

Gene gun: A device used to insert foreign genes into the cells of target organism

GM line: Refers to a unique GMO – generated from a unique DNA recombination event that took place in a single cell during transformation, which was subsequently regenerated into a complete GMO

Good agricultural practice: Measures employed during cultivation, harvest, transport, storage and processing which are necessary to ensure sufficient segregation of GM and non-GM crop after production; hence, good quality standards in a diverse agricultural production environment

Guidelines: These are documents that accompany regulations and acts and are produced by regulatory authorities. They provide the steps an individual should follow with respect to a given act or regulation. They are mandatory, but failure to follow them may result in actions contrary to an act or regulation, which is enforced by law

H

Habitat: The place or type of site where an organism or population naturally occurs

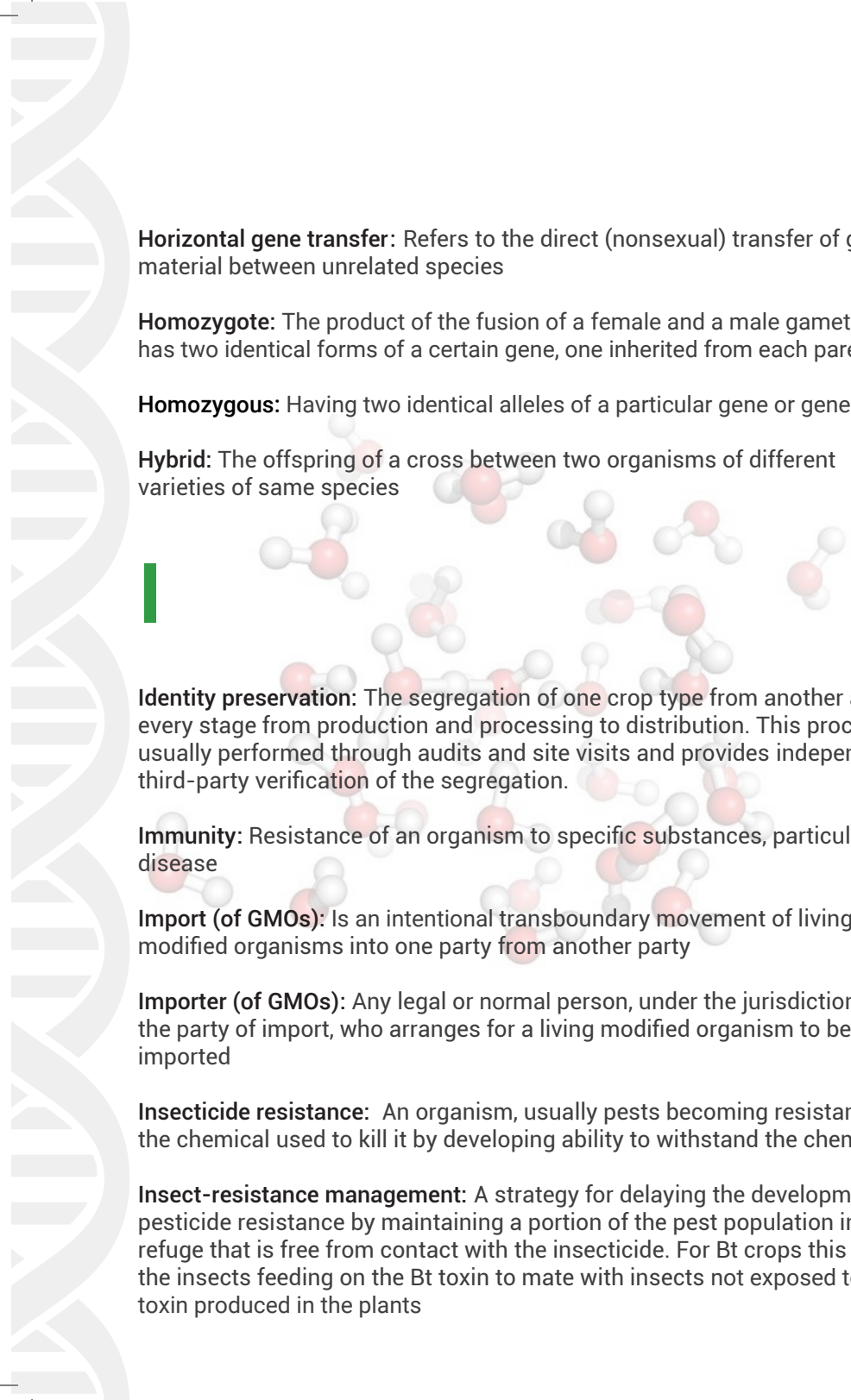
Haploid: A cell or organism of a species containing half the usual set of chromosomes. This is usually found in an organism's reproductive cells

Heterozygote: The product of the fusion of a female and a male gamete that has two different forms of a certain gene, one inherited from each parent

Heterozygous: Having two different alleles of a particular gene or genes

Herbicide-tolerant crops: Crops developed to survive application(s) of particular herbicides by the incorporation of certain gene(s) either through genetic engineering or traditional breeding methods

Herbicide tolerance: A plant's ability to survive the activity of a particular herbicide and is based on a molecular mechanism that somehow neutralizes the activity of a herbicide; e.g. via deactivation or substitution reactions. It is the most common GM trait in commercial agriculture because it enables more effective weed control and the use of low or zero tillage agricultural practices



Horizontal gene transfer: Refers to the direct (nonsexual) transfer of genetic material between unrelated species

Homozygote: The product of the fusion of a female and a male gamete that has two identical forms of a certain gene, one inherited from each parent

Homozygous: Having two identical alleles of a particular gene or genes

Hybrid: The offspring of a cross between two organisms of different varieties of same species

Identity preservation: The segregation of one crop type from another at every stage from production and processing to distribution. This process is usually performed through audits and site visits and provides independent third-party verification of the segregation.

Immunity: Resistance of an organism to specific substances, particularly to disease

Import (of GMOs): Is an intentional transboundary movement of living modified organisms into one party from another party

Importer (of GMOs): Any legal or normal person, under the jurisdiction of the party of import, who arranges for a living modified organism to be imported

Insecticide resistance: An organism, usually pests becoming resistant to the chemical used to kill it by developing ability to withstand the chemical

Insect-resistance management: A strategy for delaying the development of pesticide resistance by maintaining a portion of the pest population in a refuge that is free from contact with the insecticide. For Bt crops this allows the insects feeding on the Bt toxin to mate with insects not exposed to the toxin produced in the plants

Insect-resistant crops/plants: Crops/plants with the ability to withstand, deter or repel insects and thereby prevent them from feeding on the plant. The traits (genes) determining resistance may be selected by plant breeders through cross-pollination with other varieties of this crop/plant or through the introduction of novel genes such as Bt genes through genetic modification

Intellectual property rights: The legal protection for inventions, including new technologies or new organisms (such as new plant varieties). The owner of these rights can control their use and earn the rewards for their use. Intellectual property rights protection includes various types of patents, trademarks, and copyrights

Inbreeding: Mating between relatives or closely related organisms

Induced mutation: Mutation under the influence of a chemical mutagen or radiation

Informal Advisory Committee on Biosafety Clearing-House (BCH-IAC): Committee mandated to assist the CBD Secretariat, with a particular focus on providing guidance with respect to resolution of technical issues associated with the ongoing development of the Biosafety Clearing-House.

Introduced or modified trait: A genetic trait introduced to create an LMO. Examples include herbicide tolerance, pest resistance, virus resistance, increased nutrients, etc

Indigenous population: A community of natural inhabitants in a defined geographical area.



J

Just and equitable: Fair by all parties concerned

L

Living Modified Organism (LMO): Any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology

Living Modified Organism (LMO) Products: Products developed from LMOs

M

Meiosis: A special type of cell division used by sexually reproducing organisms to produce reproductive material such as sperm or egg cells

Messenger RNA (mRNA): An RNA molecule transcribed from a DNA sequence and translated into the amino acid sequence of a polypeptide

Mitosis: The process of nuclear division in which the replicated chromosomes divide and the daughter nuclei have the same chromosome number and genetic composition as the parent nucleus

Modern Biotechnology: A term adopted by international convention to refer to biotechnological techniques for the manipulation of genetic material and the fusion of cells beyond normal breeding barriers. An example is the genetic modification

Molecular biology: The study of the structure and function of proteins and nucleic acids in biological systems

Mutation: Any heritable change in DNA structure or sequence caused by alteration in its genetic makeup


Mutagen: An agent capable of increasing the rate of mutation

Mutagenesis: A process by which the genetic information of an organism is changed, resulting in a mutation. It may occur spontaneously in nature, or as a result of exposure to mutagens

N

National Authorized User: A person nominated by BCH National Focal Points, and is permitted to register information with the BCH. To ensure the authenticity of the information, the BCH National Focal Point is required to verify the accuracy of any record before it is validated and made public

National Biosafety Framework (NBF): A national legislative instrument established in a manner appropriate and practical for a country meeting all the national priorities and global obligations. These are all the policies, legal, administrative and technical instruments that are established to address an adequate level of protection to modern biotechnology including safe transfer, handling and use of LMOs that may have effects on biodiversity or biological diversity including risks to human health



National Focal Point (NFP): The National body responsible for communication with the CBD Secretariat on a particular topic

National guideline: A set of rules/procedures intended to assist with providing ways of complying with national laws, and national regulations

National law: A law that has been passed by the national legislative body of a country's government

National regulation: In most jurisdictions, a national regulation is 'subordinate legislation', usually of an administrative nature, that is authorized by a national law.

New breeding techniques: Newer methods of genetic modifications that provide more precision to modify crops and animals

Novel foods: Are products that have never been used as a food; foods which result from a process that has not previously been used for food or foods that have been genetically modified. This last category of foods has been described as genetically modified foods

Novel trait: A genetic characteristic in an organism that has been developed either through the use of traditional or modern biotechnology

Null segregant: Offspring in which the GM element used to engineer the parent organism has been removed through conventional breeding (GM traits are only used transiently)

Nucleus: A membrane-bounded cytoplasmic structure, that contains the chromosomes in a cell

Nucleotide: A subunit of DNA or RNA consisting of a nitrogenous base (adenine, guanine, thymine, or cytosine in DNA; adenine, guanine, uracil, or cytosine in RNA), a phosphate molecule, and a sugar molecule (deoxyribose in DNA and ribose in RNA). Many of the nucleotides are linked to form a DNA or RNA molecule



O

Offspring: The product of the reproductive processes of an animal or plant

Organic agriculture: A concept and practice of agricultural production that focuses on production without the use of synthetic inputs and does not allow the use of LMOs

Organism: A biological entity, cellular or non-cellular, capable of metabolism, replication, reproduction or of transferring genetic material and includes micro-organisms

Outcrossing: Mating between different populations or individuals of the same species that are not closely related. The term "outcrossing" can be used to describe unintended pollination by an outside source of the same crop during hybrid seed production

P

Pathogen: An organism that causes disease

Parties to the CBD: Signatories to the Convention of Biodiversity

Pest-resistant crops: Plants with the ability to withstand, deter or repel pests and thereby prevent them from damaging the plants. Plant pests may include insects, nematodes, fungi, viruses, bacteria, weeds, and other hazardous organisms for plants.

Pesticide resistance: An organism, usually a pest becoming resistant to the chemical used to kill it by developing ability to withstand the chemical

Phenotype: The visible and/or measurable characteristics of an organism (how it appears outwardly)

Plant breeding: The use of cross-pollination, selection, and certain other techniques involving crossing plants to produce varieties with particular desired characteristics (traits) that can be passed on to future generations

Plant-Incorporated Protectants (PIPs): Pesticidal substances introduced into plants by genetic modification that are produced and used by the plant to protect it from pests. The protein toxins of Bt are often used as PIPs in the formation of Bt crops

Plant pests: Organisms that may directly or indirectly cause disease, spoilage, or damage to plants, plant parts or processed plant materials. Common examples include certain insects, mites, nematodes, fungi, molds, viruses, and bacteria

Plasmid: An extra-chromosomal genetic element that replicates independently of the host chromosome


Pleiotropy: Means having multiple phenotypic expressions; when one gene influences two or more seemingly unrelated phenotypic traits

Polymerase: An enzyme that catalyzes the synthesis of long chains of nucleic acids

Polymerase Chain Reaction (PCR): A method for producing many copies of a specific fragment of DNA by repeated rounds of DNA replication

Promoter: A region of DNA that regulates the level of expression of that gene

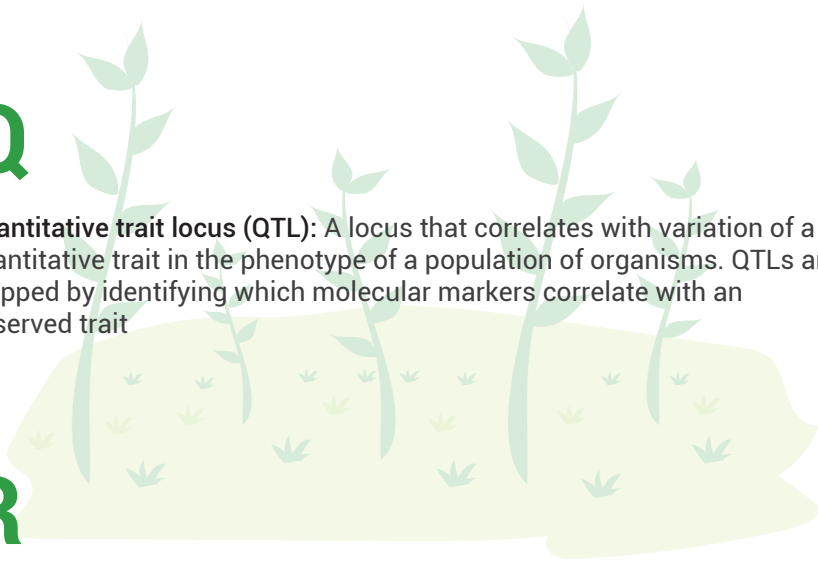
Protein: A molecule composed of chains of amino acids in a specific order. Proteins are required for the structure, function, and regulation of the body's cells, tissues, and organs. Each protein has a unique function



Precautionary principle: An approach for risk management that has been developed in circumstances of scientific uncertainty, emphasizing the need for action in the face of potentially serious risk to humans or their environment

Proteomics: The large-scale study of proteins. The proteome is the entire set of proteins that is produced or modified by an organism or system

Q



Quantitative trait locus (QTL): A locus that correlates with variation of a quantitative trait in the phenotype of a population of organisms. QTLs are mapped by identifying which molecular markers correlate with an observed trait

R

rDNA (Recombinant DNA): A molecule of DNA formed by joining different DNA segments using recombinant DNA technology

Recombinant DNA technology: A procedure of joining together DNA from two different species

Recessive allele: An allele that fails to express itself in an observable manner because of the greater influence or dominance, of its opposite acting partner (dominant) allele

Regional economic integration organization: An organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by the CBD and which has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it

Reverse breeding: A novel breeding technique designed to produce homologous parental lines for a superior heterozygous plant. Subsequent hybridization of the obtained homozygous parental lines will reconstitute the original superior heterozygous line


Ribonucleic Acid (RNA): A chemical substance made up of nucleotides compound of sugars, phosphates, and derivatives of the four bases adenine (A), guanine (G), cytosine (C), and uracil (U). RNAs function in cells as messengers of information from DNA that are translated into protein or as molecules that have certain structural or catalytic functions in the synthesis of proteins. RNA is also the carrier of genetic information for certain viruses. RNAs may be single or double stranded

Ribose: The five-carbon sugar molecule in RNA

Risk: The probability of a harm occurring under defined circumstances. Risk is estimated by considering both the likelihood and consequence of a harm occurring (risk = likelihood x consequence)

Risk analysis: Integration of contextualization, assessment, management and communication of risk posed by, or as a result of activities with GMOs

Risk assessment: The use of scientific and other appropriate methods to identify and characterize the nature, likelihood of occurrence, and potential magnitude of any hazards, with due regard to the precautionary principle



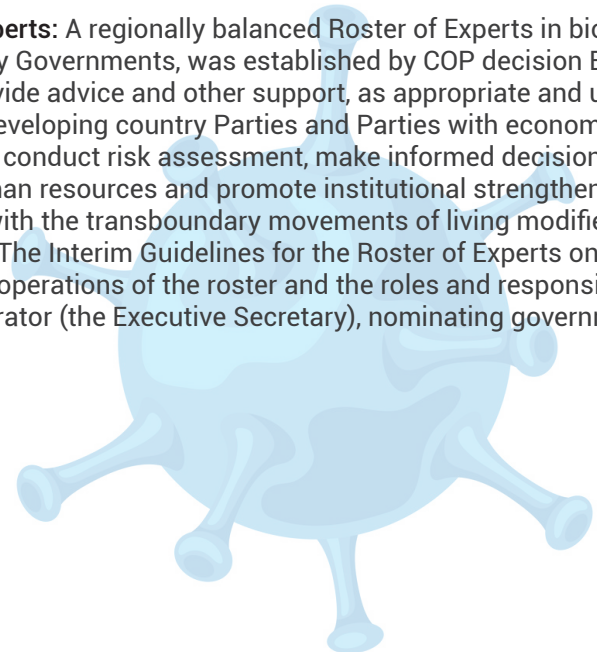
Risk perception: The subjective judgement that people make about the characteristics and severity of a risk

Risk management: The evaluation of whether the risks identified by the risk assessment process are acceptable and manageable, then selecting and implementing the control measures as appropriate to ensure that risks are minimized or controlled

Risk communication: Communicating and creating an understanding of an area where public trust is low and concerns are high

Risk Assessment Framework (RAF): A strategy for prioritizing and sharing information about the security risks to an information technology infrastructure. A good RAF organizes and presents information in a way that both technical and non-technical personnel can understand

Roster of Experts: A regionally balanced Roster of Experts in biosafety, nominated by Governments, was established by COP decision EM-1/3 and aims "to provide advice and other support, as appropriate and upon request, to developing country Parties and Parties with economies in transition, to conduct risk assessment, make informed decisions, develop national human resources and promote institutional strengthening, associated with the transboundary movements of living modified organisms." The Interim Guidelines for the Roster of Experts on Biosafety explains the operations of the roster and the roles and responsibilities of the administrator (the Executive Secretary), nominating governments, and experts



S

Selectable marker: A gene, often encoding resistance to an antibiotic or a herbicide, introduced into a group of cells to allow identification of those cells that contain the gene of interest from the cells that do not. Selectable markers are used in genetic modification to facilitate identification of cells that have successfully been incorporated into the foreign gene

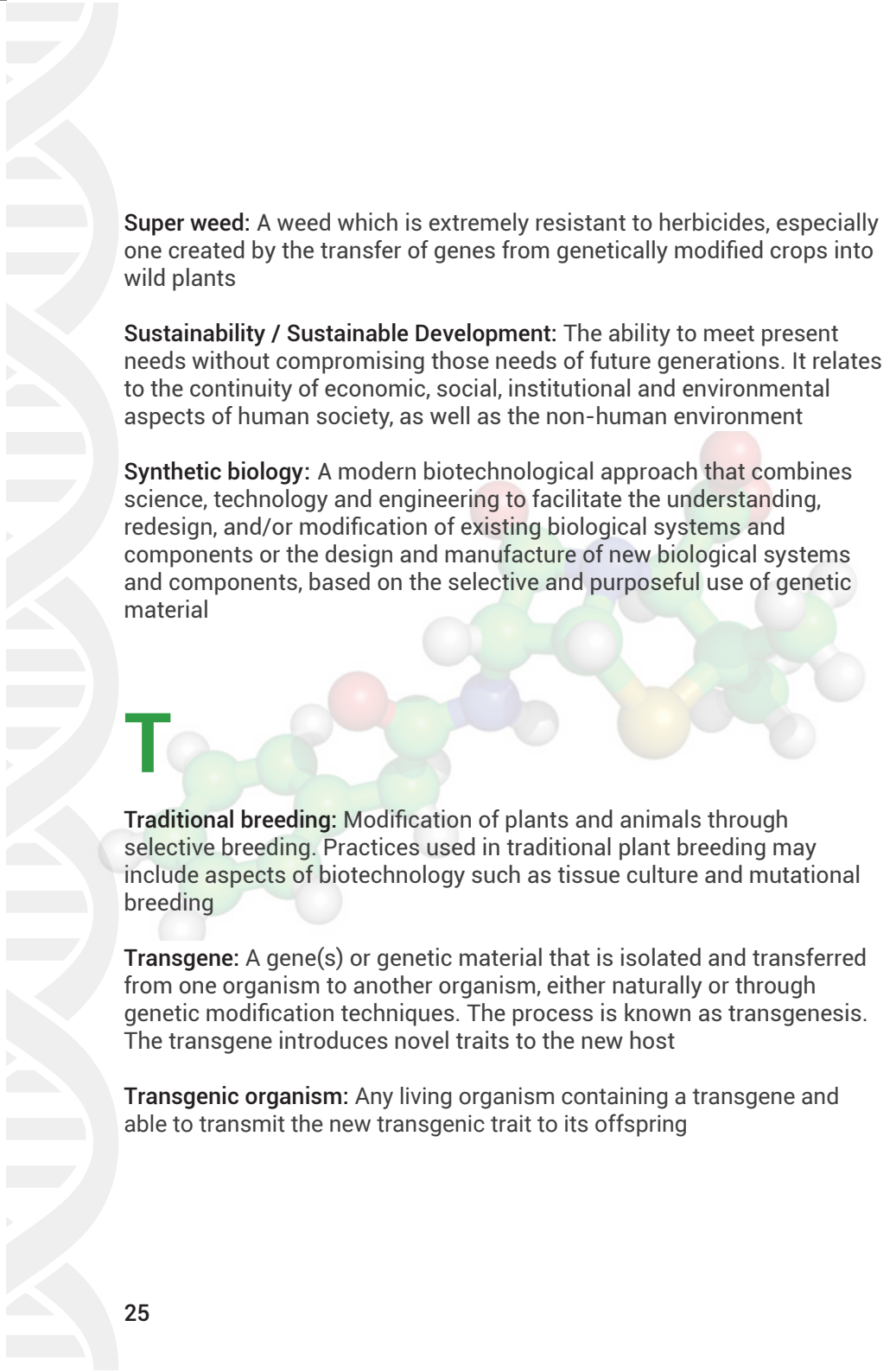
Selective breeding: Making deliberate crosses or mating of organisms so the offspring will have desired characteristics derived from one or both of the parents

Segregation: Separation of the members of a pair of alleles into different gametes in meiosis. In GMO context this is the same as Identity preservation

Somatic cell: One of the cells of the body that compose the tissues, organs, and parts of that individual other than the reproductive cells

Species: One of the basic units of biological classification. They are comprised of reproductive communities and populations that are distinguished by their collective variation with respect to many different characteristics and qualities

Substantial Equivalence (SE): A concept used as a guide in the safety assessment of genetically modified foods by comparing the novel food to its unmodified counterpart which has a history of safe use. This approach allows regulatory authorities to include in their consideration, the substantial history of information related to foods which have long been safely consumed in the human diet to aid in the identification of potential safety and nutritional issues



Super weed: A weed which is extremely resistant to herbicides, especially one created by the transfer of genes from genetically modified crops into wild plants

Sustainability / Sustainable Development: The ability to meet present needs without compromising those needs of future generations. It relates to the continuity of economic, social, institutional and environmental aspects of human society, as well as the non-human environment

Synthetic biology: A modern biotechnological approach that combines science, technology and engineering to facilitate the understanding, redesign, and/or modification of existing biological systems and components or the design and manufacture of new biological systems and components, based on the selective and purposeful use of genetic material

T

Traditional breeding: Modification of plants and animals through selective breeding. Practices used in traditional plant breeding may include aspects of biotechnology such as tissue culture and mutational breeding

Transgene: A gene(s) or genetic material that is isolated and transferred from one organism to another organism, either naturally or through genetic modification techniques. The process is known as transgenesis. The transgene introduces novel traits to the new host

Transgenic organism: Any living organism containing a transgene and able to transmit the new transgenic trait to its offspring

Traceability: The underlying principle used by regulatory agencies and industry in product recall and removing potentially harmful food products once they are in distribution. Traceability is particularly important in markets where GM and non-GM foodstuffs co-exist

Transboundary movement: The movement of living modified organisms (LMOs) across boundaries of countries and includes intended as well as unintended movement

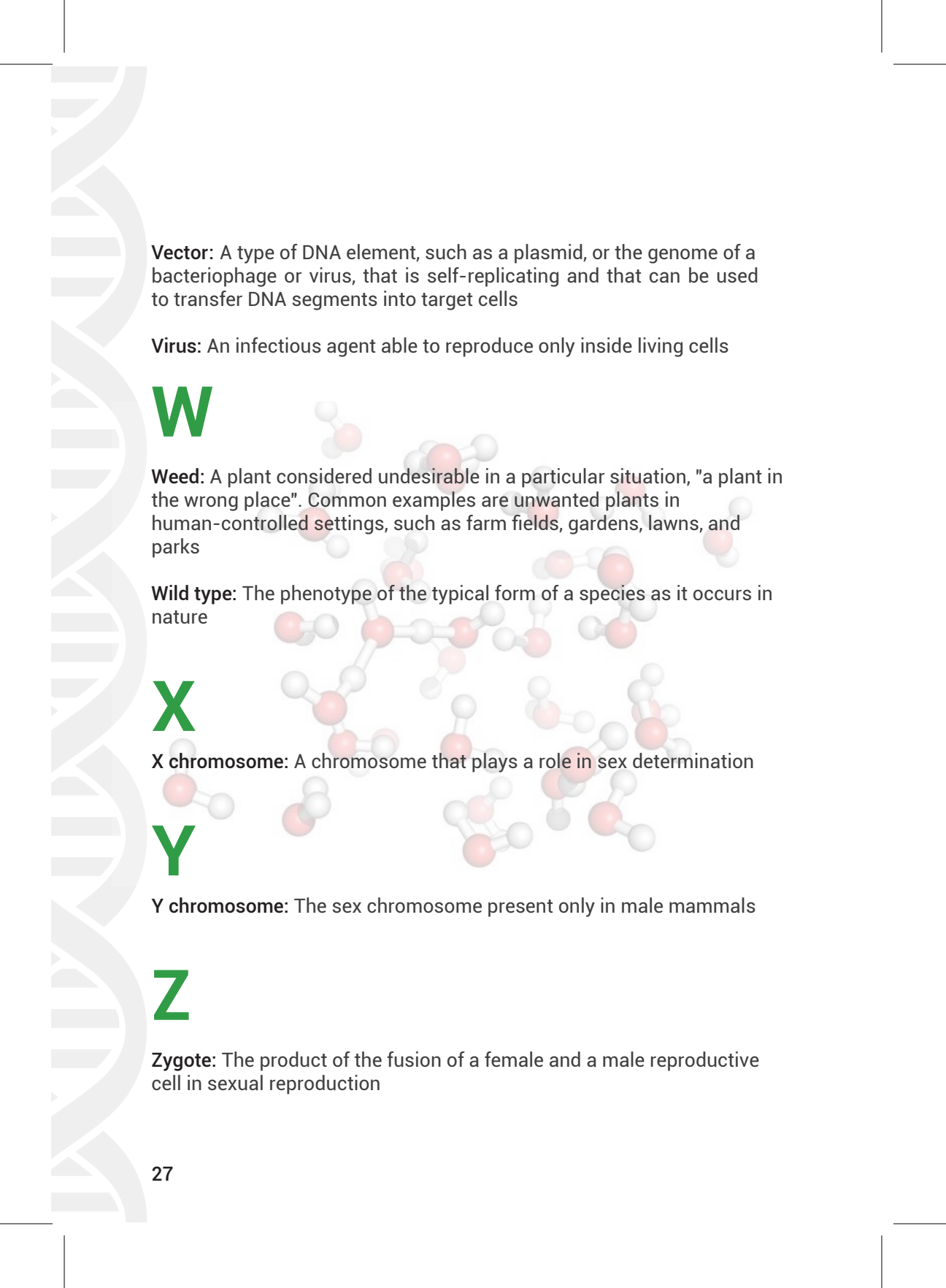
Trait: A distinguishing quality or characteristic, typically one belonging to a person

U

Unintended effects: The outcomes that are not (or not limited to) the results originally intended in a particular situation. The unintended results may be foreseen or unforeseen

V

Variety: A subdivision of a species for taxonomic classification also referred to as a 'cultivar.' A variety is a group of individual plants that are uniform, stable, and distinguishable from other groups of individuals in the same species by distinct genetic and phenotypic characteristics



Vector: A type of DNA element, such as a plasmid, or the genome of a bacteriophage or virus, that is self-replicating and that can be used to transfer DNA segments into target cells

Virus: An infectious agent able to reproduce only inside living cells

W

Weed: A plant considered undesirable in a particular situation, "a plant in the wrong place". Common examples are unwanted plants in human-controlled settings, such as farm fields, gardens, lawns, and parks

Wild type: The phenotype of the typical form of a species as it occurs in nature

X

X chromosome: A chromosome that plays a role in sex determination

Y

Y chromosome: The sex chromosome present only in male mammals

Z

Zygote: The product of the fusion of a female and a male reproductive cell in sexual reproduction



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<https://bch.cbd.int/resources/glossary/>

<http://www.fao.org/3/x3910e/X3910E04.htm#TopOfPage>

<http://biosafety.org.za/information/know-the-basics/gmo-science/biosafety-glossary>

http://www.isaaa.org/Kc/inforesources/acronymsandglossary/A-cronyms_and_Glossary_of_Biotechnology.doc

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