

GLOSSARY OF TERMS

(as used in a biological control of weeds context only)

- abdomen** – hindmost part of an insect’s body
- aestivation** – summer dormancy, usually to avoid dry conditions
- antennae** – paired sensory organs on an insect’s head (feelers)
- assessment** – measuring impacts of biocontrol agents
- beating tray** – large (about 1x1 m) white sheet placed beneath foliage to collect any insects beaten from the foliage during surveys
- beetle** – hard-bodied insect (as an adult) with chewing mouthparts and hard wing covers, belonging to the order Coleoptera
- biocontrol** — abbreviation for biological control
- bioherbicide** – herbicide where the active ingredient is a living organism (e.g. fungi, bacteria, protozoans)
- biological control** – when one living organism is used to control another
- biological control agent** – term for a living organism that is deliberately being used to control another living organism
- bivoltine** – two life cycles per year
- bolting (plant)** – when a plant begins to grow taller and put up flowering stems
- bug** – insect with sucking mouthparts, belonging to the order Hemiptera
- classical biological control** – where biological control agents are introduced from overseas and, once released, persist indefinitely
- caterpillar** – juvenile stage of a butterfly or moth that hatches out of an egg
- chillybin** – portable container used to keep things cool
- chlorotic** – lacking the green plant pigment chlorophyll so has a yellowish appearance
- colonial** – where many insects live together often building and sharing a retreat, e.g. a web
- correlation** – where two events follow similar (positive) or opposite (negative) patterns of change but one does not necessarily cause the other
- co-evolution** – where two organisms have evolved together and have each affected the evolution of the other
- crown** – centre of a rosette plant
- crepuscular** – animals that tend to be most active at dawn and dusk
- defoliate** – remove foliage (leaves)
- density dependence** – when an outcome is affected by the number of organisms present e.g. self thinning of seedlings leads to one mature plant
- density independence** – when an outcome is not affected by the number of organisms present but some other factor, e.g. drought kills seedlings
- disperse** – move into new areas



ecology – the study of how organisms relate to each other and their environment

ecoclimatic matching – a check to see if conditions here are likely to be suitable for a potential biocontrol agent by assessing the conditions where they naturally occur and do well in their native range

endemic – naturally occurring in a country and nowhere else

entomology – the study of insects

ERMA – the Environmental Risk Management Authority, which controls the importation of new organisms (including biocontrol agents) and hazardous substances in New Zealand

established – the status given to a biocontrol agent when it is found in increasing numbers for two or more years following its release (univoltine species), or after several generations (multivoltine species), i.e. it is now likely to be a permanent resident

exponential growth – how populations grow if not checked by limiting factors (competition, predation etc), e.g. a population doubling in size every week

faunal survey – a check to find out what invertebrates are naturally found in an area or on a particular host or group of hosts

fly – insect with only one pair of wings, belonging to the order Diptera

frass – droppings from insects with chewing mouth parts

food web – the feeding relationships between various species living together in one area

fungus – an organism that is neither a plant nor an animal. Many feed and grow on plant tissues and some of these cause disease (plant pathogens)

gall – hard, sometimes unusual-shaped swelling on a plant formed in response to attack from certain insects, mites or fungi

garden leaf-vacuum – suction device designed to collect leaves, which can also be modified for collecting insects

generalist feeder – insect that feeds on a wide range of different plants

grub – another name for an insect larva

hibernate – become dormant during winter

host range – the range of plants that a biocontrol agent can feed and reproduce on

host-specificity testing – testing to find out the host range of a potential biocontrol agent

indigenous – native to a country but may also be found naturally elsewhere

inoculate – apply a pathogenic fungus to a plant

inoculum – substance used to infect a plant with a pathogen, usually a solution containing spores

inflorescence – group of flowers

insect – small invertebrate animal with six legs, 2–4 wings, and a body divided into three parts (head, thorax, and abdomen)

insecticide exclusion – an assessment technique where insecticides are used to remove insects from an area and the effect this has is measured

instar – growth stage of an insect (in between moults), e.g. newly hatched = first instar

intraspecific – relating to interactions that occur within a single species

interspecific – relating to interactions that occur between species

inundative control – creating a disease epidemic in a weed population by applying a large quantity of a bioherbicide. Unlike classical biological control, agents used in bioherbicides may not persist at high levels for a long time following application and may need to be reapplied

invertebrate – small animal without a backbone or spinal column

lag phase – the period before a species becomes invasive in a new environment

larva – the life stage in between an egg and a pupa

leaf axil – junction of a leaf and a stem

leaf roller – moth whose caterpillars web leaves or growing tips together

lesion – blemish that shows a plant is infected with a pathogen

line-rearing – where the progeny of various lines of insects are kept separate and not allowed to interbreed; often used to remove diseases or parasites from populations

longevity – life span

macropterous – winged forms of an insect (in species where some adults have tiny or no wings)

maggot – larval stage of a fly

mandibles – biting mouth parts of insects

mass-rearing – artificially rearing large numbers of insects

metamorphosis – process by which insects change their form completely, e.g. caterpillar becomes a moth

mine – damage caused by an insect feeding between the top and bottom surfaces of a leaf; often looks like a squiggly line or a blotch

microsporidian – microscopic protozoan that can parasitise insects

mite – tiny invertebrate with eight legs and sucking mouth parts

model – mathematical description of the population dynamics of weeds or biocontrol agents

monitoring – measuring the presence, absence, and spread of biocontrol agents

moth – adult with wings covered in fine scales, belonging to the order Lepidoptera, usually more drab than butterflies (also Lepidoptera) and often nocturnal

multivoltine – several life cycles per year

mycelium – main body of a fungus, doesn't include the parts that produce spores

mycoherbicide – herbicide where the active ingredient is a fungus

mycology – the study of fungi

necrosis – death and decay

native – occurring naturally in a country but perhaps in other places too

native range – where an organism evolved and occurs naturally

natural enemy – organism that naturally attacks another organism

nocturnal – active at night

nucleus population – population of biocontrol agents released to start a new field population

nymph – juvenile stages, typical of sap-sucking insects that become more like adults as they grow instead of undergoing metamorphosis

overwinter – spend the winter

oviposit – lay eggs

ovipositor – structure used to lay eggs

parasite – organism that lives on or in another organism and gets sustenance from it

parthenogenetic – able to reproduce without fertilisation

pathogen – disease-causing organism

petiole – small stalk that attaches a leaf to a stem

phenology – the timing of a life cycle and how it relates to the seasons

pheromone – chemical compounds that insects use to recognise and communicate with each other

pheromone trap – sticky trap laced with pheromones used to attract and catch insects

plant pathology – the study of plant diseases

pooter (aspirator) – suction device used to collect insects

predator – organism that preys on another (usually kills it quickly)

prepupa – life stage that some insects enter before pupation

progeny – offspring

pupa (cocoon, chrysalis) – resting life stage during which metamorphosis occurs

pustule – blister-like structure encasing fungal spores

quarantine – facility where organisms can be kept in isolation and prevented from entering the environment

rearing rooms – climate-controlled facility where biocontrol agents can be kept and mass produced

receptacle – part of the flower that supports and nourishes developing seeds

recover – find an agent again after it has been released

ringbark – damage encircling a stem or trunk; eventually kills the plant above this point

rosette – juvenile, low-growing plant growth form, occurs between germination and bolting

rust – type of fungus that can only survive on living plant tissue, with readily wind-dispersed spores (often orange or rust coloured)

safety test – see host specificity testing

sawfly – type of wasp with no sting, belonging to the order Hymenoptera, has plant-feeding larvae similar to moths or butterflies

senescence – aging

slikka pad – product that can be frozen to help keep items in a chillybin cool

smut – type of fungus similar to a rust in that it needs a living host but its spores are not orange. Some smuts infect flowers and replace plant seeds with spores

specialist feeder – insect that only feeds on a narrow range of plants

spore – tiny structures that fungi use to disperse and create new infections, equivalent to a plant seed

stolon – narrow stem (runner) that some plants send out across the ground to spread vegetatively (without reproduction) by producing daughter plants at the tips

sweep net – butterfly net used to catch insects by sweeping low-growing foliage

technology transfer – passing on information about science and technology to end-users

thrips – tiny sap-sucking insect belonging to the order Thysanoptera; referred to as thrips even in the singular

thorax – the middle part of an insect's body

univoltine – one life cycle per year

vector – organism that carries disease

vigour – measure of how strong and healthy plant growth is

weevil – hard-bodied insect also belonging to the order Coleoptera, easily distinguished from other beetles by their elongated snouts (rostrums) and elbowed antennae

witches' broom – term used to describe damage to a plant by a pathogen that results in deformed branches with abnormally high numbers of shoots