**Biological Control**

**المرحلة الرابعة/العملي**

**Pest control**

**Pest control** refers to the regulation or management of a [species](https://en.wikipedia.org/wiki/Species) defined as a [pest](https://en.wikipedia.org/wiki/Pest_%28organism%29), usually because it is perceived to be detrimental to a person's [health](https://en.wikipedia.org/wiki/Health), the [ecology](https://en.wikipedia.org/wiki/Ecology) or the [economy](https://en.wikipedia.org/wiki/Economics). A practitioner of pest control is called an **exterminator.**

Pest control is at least as old as [agriculture](https://en.wikipedia.org/wiki/Agriculture), as there has always been a need to keep crops free from pests. In order to maximize food production, it is advantageous to protect crops from competing species of plants, as well as from [herbivores](https://en.wikipedia.org/wiki/Herbivore) competing with humans.

The conventional approach was probably the first to be employed, since it is comparatively easy to destroy weeds by burning them or plowing them under, and to kill larger competing herbivores, such as [crows](https://en.wikipedia.org/wiki/Crows) and other birds [eating seeds](https://en.wikipedia.org/wiki/Seed_predation). Techniques such as [crop rotation](https://en.wikipedia.org/wiki/Crop_rotation), [companion planting](https://en.wikipedia.org/wiki/Companion_planting) (also known as intercropping or mixed cropping), and the [selective breeding](https://en.wikipedia.org/wiki/Selective_breeding) of pest-resistant [cultivars](https://en.wikipedia.org/wiki/Cultivars) have a long history.

**Causes:**

Many pests have only become a problem as a result of the direct actions by humans. Modifying these actions can often substantially reduce the pest problem. In the [United States](https://en.wikipedia.org/wiki/United_States), [raccoons](https://en.wikipedia.org/wiki/Raccoon) caused a nuisance by tearing open refuse sacks. Many householders introduced bins with locking lids, which deterred the raccoons from visiting. House flies tend to accumulate wherever there is human activity and is virtually a global phenomenon, especially where food or food waste is exposed. Similarly, [seagulls](https://en.wikipedia.org/wiki/Seagulls) have become pests at many [seaside resorts](https://en.wikipedia.org/wiki/Seaside_resorts). Tourists would often feed the birds with scraps of [fish and chips](https://en.wikipedia.org/wiki/Fish_and_chips), and before long, the birds would rely on this food source and act aggressively towards humans.

Living organisms evolve and increase their resistance to biological, chemical, physical or any other form of control. Unless the target population is completely exterminated or is rendered incapable of reproduction, the surviving population will inevitably acquire a tolerance of whatever pressures are brought to bear - this results in an [evolutionary arms race](https://en.wikipedia.org/wiki/Evolutionary_arms_race).

**General methods of pest control**

 **is divided into two parts is the natural pest control and applied:**

1. **Natural control**

 include factors that destroy or limit the spread of the scourge without human intervention, where natural conditions are working to reduce pests and can accomplish these factors are as follows:

1. food factors: such as lack of food due to drought or lack of breadwinner.
2.air condisions: such as high or low temperature and humidity and the activity of wind and precipitation.
3. Vital factors: Examples of natural enemies Predators and parasites on insects and diseases of fungal and bacterial and viral.
4. Topographic factors: such as the existence of deserts, mountains, lakes and oceans. These factors could limit the spread of pests

1. **Applide control:**

a- Use of pest-destroying animals

Perhaps as far ago as 3000BC in Egypt, cats were being used to control pests of grain stores such as rodents. In 1939/40 a survey discovered that cats could keep a farm's population of rats down to a low level, but could not eliminate them completely. However, if the rats were cleared by trapping or poisoning, farm cats could stop them returning - at least from an area of 50 yards around a barn.

Ferrets were domesticated at least by 500 AD in Europe, being used as mousers. Mongooses have been introduced into homes to control rodents and snakes, probably at first by the ancient Egyptians.

Biological pest control b-

Biological pest control is the control of one through the control and management of natural predators and parasites. For example: mosquitoes are often controlled by putting Bt Bacillus thuringiensis ssp. israelensis, a bacterium that infects and kills mosquito larvae, in local water sources. The treatment has no known negative consequences on the remaining ecology and is safe for humans to drink. The point of biological pest control, or any natural pest control, is to eliminate a pest with minimal harm to the ecological balance of the environment in its present form.

Mechanical pest control c-

Mechanical pest control is the use of hands-on techniques as well as simple equipment, devices, and natural ingredients that provide a protective barrier between plants and insects. For example: weeds can be controlled by being physically removed from the ground. This is referred to as tillage and is one of the oldest methods of weed control

Hunting d-

Historically, in some European countries, when stray dogs and cats became too numerous, local populations gathered together to round up all animals that did not appear to have an owner and kill them. In some nations, teams of rat-catchers work at chasing rats from the field, and killing them with dogs and simple hand tools. Some communities have in the past employed a bounty system, where a town clerk will pay a set fee for every rat head brought in as proof of a rat killing

 e-pesticides

Spraying pesticides by planes, trucks or by hand is a common method of pest control. Crop dusters commonly fly over farmland and spray pesticides to kill off pests that would threaten the crops. However, some pesticides may cause cancer and other health problems, as well as harming wildlife.

Destruction of infected plants f-

 Destruction of infected plants[edit]Forest services sometimes destroy all the trees in an area where some are infected with insects, if seen as necessary to prevent the insect species from spreading. Farms infested with certain insects, have been burned entirely, to prevent the pest from spreading elsewhere.