

Agriculture & Pesticides Facts

WHY FARMERS USE PESTICIDES

Throughout the world, billions of dollars worth of foodstuffs are lost each year to pests, through reduced productivity, contamination or direct consumption of the product by the pest. Severe infestations of some pests can result in the complete loss of a crop or death of animals. In most cases, though, pests damage a portion of the crops, reducing yields and/or product quality. Without some form of pest control, these losses would be even greater and could result in shortages of some types of foods and higher prices to the consumer. Furthermore, without pest control, the contamination of crop products caused by some pests could pose a hazard to the health of humans or animals.



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The agricultural pests most commonly encountered in Ontario are weeds, insects, and diseases. Other pests that can affect some crops include nematodes, mites, birds and mammals. The types of damage caused by agricultural pests include:

TYPE OF DAMAGE

- death of crop plants
- reduced growth or yield
- spread of crop or livestock diseases
- reduced quality and appearance
- eating of the crop
- contamination of crops with toxic compounds
- increased difficulty in harvesting crop
- damage or spoilage to crops in storage
- contamination of harvested product
- quality loss through staining of harvested crop
- poisonous to humans or livestock
- serve as hosts for insect and/or disease pests
- human health risk
- allergic reactions
- reduced growth of livestock
- distress to animals
- damage to meat and/or hides

CAUSED BY:

- insects, diseases, severe weed competition
- insects, diseases, nematodes and weeds
- insects
- insects, diseases and weeds
- insects, birds and mammals
- diseases
- insects, diseases and weeds
- insects, diseases and rodents
- insects, rodents and weed seeds
- weeds
- weeds, diseases (toxins)
- weeds
- diseases
- weeds
- insects and diseases
- insects
- insects

All farmers rely on a variety of pest control practices, especially mechanical (cultivation), cultural (crop rotation), biological (beneficial insects and pest diseases) and genetic (use of varieties with natural pest resistance). When these methods prove to be inadequate, many farmers choose to use a pesticide to provide the required level of pest control.

Pesticides are used because when they are chosen and applied properly, they are:

- **highly effective**
- **fast acting** - Insect and disease infestations are often unpredictable and not readily controlled by non-chemical means. When an infestation occurs, the pest can often devastate a crop before non-chemical control measures can take effect. Thus, in order to save the crop, a pesticide is used.
- **“broad spectrum”** - Most pesticides, on the other hand, generally control more than one species of pest. In contrast, biological control measures are usually effective against only one species of pest or a small group of closely related species.
- **less labour intensive** - It has been estimated that using organic farming methods to produce crops requires about 10 percent more labour per unit of output than do conventional practices and would require significantly more land area to produce the same amount of food.
- **more energy efficient** - Controlling weeds without pesticides requires that a field be cultivated several times, resulting in the use of considerable amounts of fuel and the release of more exhaust fumes into the atmosphere. As a result, the total energy consumption of chemical weed control, including manufacturing, distribution and application, is less than that for a non-chemical approach.
- **safe** - When proper precautions are used, pesticides can be used with little risk to the applicator and negligible risk to the health of consumers or to the environment. Over the past 30 years, the characteristics of the pesticides used in Ontario have changed so that they pose much less risk to the environment than did many of the products in use during the 1950s and 1960s.
- **economical** - When all of the above factors are considered, farmers use pesticides because the benefits they offer in terms of yield and quality outweigh their cost.