

Controlling pests and diseases in cannabis cultivation



New technologies can help growers overcome the difficulties involved in producing a healthy and profitable crop as the cannabis business continues to expand and change, says **Thomas Walker**.

In this article, I would like to focus on a number of recent advancements in pest and disease management that are readily available to today's commercial cannabis producer. These include updates of tried-and-tested techniques, as well as high-tech equipment that uses the latest software and sensors.

- **Integrated pest management (IPM)**

This strategy helps to reduce the use of chemical pesticides, which can be detrimental to the environment and the finished product.

IPM integrates a number of pest-control methods, including observation and detection of pest problems, the installation of physical barriers, the use of natural parasites and predators, and the application of selective and targeted chemical treatments.

- **Biological control**

Being both a sustainable and effective approach to controlling pests, this is one of the most important innovations in the field of pest and disease management. More and more commercial cannabis growers are turning to it.

Instead of using chemical pesticide, biological control focuses on using natural predators, parasites or pathogens to control pests and diseases. Examples are ladybirds that control aphids, *Bacillus thuringiensis* (Bt) bacteria used to eliminate caterpillars, predatory mites employed to manage thrips, and parasitic wasps that control spider mites.

These biological controls can be incorporated easily into an IPM programme and are safe and efficient.

- **Beneficial microbes**

Beneficial microbes are micro-organisms that benefit both plant and soil health. These bacteria and fungi help to boost soil health, lower the risk of disease,

and increase plant growth. A good example is mycorrhizal fungi, which enhance root health, boost nutrient and water intake, and lower the danger of soil-borne diseases. Another is rhizobia bacteria, which fixes nitrogen in the soil, lessening the need for chemical fertilisers. These helpful bacteria can be added to the soil or applied as a foliar spray.

PESTICIDE-SPRAYING DRONES OFFER HIGHLY ACCURATE TREATMENT THAT MINIMISES WASTAGE OF CHEMICALS

- **Drones**

The use of drones is an increasingly popular technique for managing pests and diseases. Apart from being labour savers, they are extremely accurate. Drones with cameras and other sensing equipment can rapidly and precisely locate crop areas infested with pests or diseases, enabling a producer to address issues as soon as they arise.

Drones can also be equipped with sprayers that apply pesticides in targeted areas, cutting down on the amount of chemicals required and improving the effectiveness of treatment.

- **Hydroponic agriculture**

These systems enable a producer to regulate water and fertiliser delivery to the plants, creating a growth environment free from pests and soil-borne diseases. Moreover, hydroponic systems can be monitored and tweaked with ease to provide ideal development conditions and reduce the risk of pest and disease outbreaks.

- **Genetic engineering and biotechnology**

These cutting-edge techniques are leading to new ways of controlling pests and managing diseases. Plants can be genetically modified to have increased resistance to pests and diseases, reducing the damage that these can inflict on crops. A welcome additional benefit is that this technique can contribute to a decrease in the demand for pesticide.

- **Data analytics and artificial intelligence**

The application of artificial intelligence and data analytics to pest and disease management is another significant innovation. These technologies can be used to collect and analyse data on crop growth as well as outbreaks of pests and diseases. This in turn can help a grower detect trends and patterns that can be used to avoid and control pest and diseases.

Additionally, growers today can employ artificial intelligence to create prediction models that enable them to address pest and disease outbreaks before they become serious issues.

CONCLUSION

In summary, advances in pest and disease management have presented commercial cannabis growers with new and efficient solutions to handle pests and diseases, mitigate the impact of these threats on crops, and help to increase the sustainability and of the cannabis sector.

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