

Cameron Scott, Simon Fraser University

"Research on crop protection is a very important topic, at the moment"

Crop protection for medical cannabis production in greenhouses or outdoors is a very important topic at the present time. Regulations around the world prohibit the use of chemical crop protections and the search for alternatives to combat diseases and pests is an important one within cannabis operations.

Cameron Scott, a graduate student completing a Master's degree at Simon Fraser University in Burnaby, B.C. has been focusing on plant diseases that specifically affect the cannabis plant. "If one wants to grow medical cannabis, there are many insect and disease challenges to produce an acceptable crop. That is why research on crop protection is a very important topic at the moment: growers need to be provided with effective solutions that prevent yield loss and protect their crop from being damaged to produce a high quality product for consumers".



Cameron Scott

The most common cannabis diseases

The most common diseases that could arise within cannabis operations are powdery mildew and botrytis, says Cameron. As well, there are also soilborne fungi that infect plants, such as Fusarium. “All these pathogens cause yield losses – and botrytis (bud rot) is especially challenging to producers post-harvest. While irradiating the product can reduce mold levels on product, there is a downside as the effects on terpene and cannabinoid profiles are not well understood.



Disease problems affect both indoor and outdoor production of cannabis. “Even within indoor production, there can be temperature fluctuations or even microenvironments that can encourage pest outbreaks”, says Cameron. “Changes in humidity and temperature over different seasons can cause differences in disease outbreaks”, he says. “While indoor environments are more stable from environmental changes compared to outdoors, outbreaks of powdery mildew and botrytis are common in both. Spores of both pathogens are spread in the air and with plant material, making disease control difficult for producers”. “Once introduced into a growing facility, spores of both pathogens can linger for a long time” says Cameron.

UV-C rays to reduce pathogens

That is why Cameron has been testing Clean Light technology that utilizes UV-C rays to reduce pathogens on cannabis plants. “I wanted to test this product to treat plants that are affected by powdery mildew,” he explains. “We conducted trials with plants that were treated with Clean Light, or left untreated to compare against. At the end of the trial, which was for 28 days with daily exposure to UV-C, we compared the results. We conducted disease assessments weekly, we measured the disease progress curves, and we analyzed the findings” says Cameron. “We found out that plants treated with Clean Light had much lower powdery mildew development compared to those not receiving the treatment, by up to 50%” says Cameron. He continues to explain that there are different Clean Light systems that can be used during production: a handheld one (as used in his research), a hand-cart system, and overhead automated booms equipped with Clean Light modules. “The booms are particularly suitable for large facilities, as it is easier to cover big spaces. The hand-held unit would be for very small operations”.



Cameron believes that UV light treatments will play an important role in cannabis crop protection. “It has shown great results so far. But the effect of CleanLight on other diseases remains to be studied. As the industry matures and the research advances, there will be a lot of interest in how research such as this can help solve disease problems” concludes Cameron.

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