Science
& Technology
in Policing

POLICE STAR FUND 24/25

ASSESSING THE ORGANIC DESTRUCTION OF CRIMINALLY PRODUCED VEGETATION

Summary

This project is exploring the disposal of cannabis plants seized from illegal drug production in a more sustainable and cost-effective way. This is innovative and untested in the UK, however, US researchers have shown that composting cannabis can destroy Delta-9-tetrahydrocannabinol (THC) to legal levels and produce a safe usable compost.

Organisations

West Yorkshire Police

Challenge

Can we establish if there is potential for an alternative, sustainable and more cost-effective way of destroying cannabis plants seized in law enforcement operations. From April 2021 - March 2022 approximately 785,000 cannabis plants were seized by UK police forces. Currently, these plants are generally destroyed by incineration which is costly (particularly within current financial challenges) and produces significant amounts of CO_2.

Innovation or research

Partnering with the University of Leeds we developed a methodology for preparing cannabis plants for composting, how to best compost the plants and how we would test the viability of the compost for its potential usefulness post project.

The first stage was to produce several different compost samples with varying levels of mix with other organic substance (wood pellets) to try and determine the optimum ratio for THC destruction.

The second phase was to academically test both the microbial structure of the compost produced and its viability for use. To establish the gases this process produced and to compare with the levels produced during incineration.

Finally, we aimed to produce an academic research paper to try and determine which method of destruction is most efficient, effective and environmentally friendly. This is due for publication.

Findings

We have established that cannabis plants do compost effectively and we have evidence to show that it does reduce the levels of THC to <0.1%.

The research indicates that composting in optimal conditions (composting temperatures) is better for sustainability than incineration, however, in sub optimal conditions composting is not considered as environmentally friendly due to the release of Nitrogen Oxide as a bi-product of the composting process.

It was determined that, considering environmental impact alone, Anaerobic Digestion (AD) was the most sustainable option as there was clear offsetting of the process by the methane production which can then be used to create electricity.

The project has also demonstrated that the inclusion of cannabis plants into food waste AD processes does not have an impact on the methane yield and so would be a viable addition to this process for private companies. This could prove an attractive alternative for forces to dispose of cannabis plants more sustainability at low to nil cost.

Next steps

Presentation to the National Drugs Working Group, including the Home Office, NPCC representatives and Border Force executive leaders, all of which are supporters of this project and are looking to use the results to seek procedural national change. Findings to be submitted to the College of Policing Practice Bank for colleagues to consider and share the learning.

Endnotes