A44   Characterization and Testing of Pseudo Scents and Pig Organs Used as Canine Training Aids

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After attending this presentation attendees will know more about pseudo scents.

This presentation will impact the forensic science community by helping determine the best training aids to assist canines in discovering surface and buried human remains.

The recovery of human remains is not only essential for the collection of evidence in homicide investigations but also is often required by the court to convict suspects of murder, and can help provide closure for victims' families. Canines used for human remains detection (HRD) can be trained using a variety of training aids. The FBI research unit was interested in characterizing the volatile organic compounds (VOCs) above pseudo scents and pig organs to help determine the best training aids to assist canines in discovering surface and buried human remains.

To determine which VOCs were emanating over pseudo scents, several formulations were characterized using gas chromatography mass spectrometry (GC/MS) and then compared and contrasted to other training aids. The pseudo scents were first tested using solid phase microextraction (SPME) with a laboratory GC/MS, and with direct injection into the GC/MS. The same aids were then tested with a portable GC/MS system via headspace air sampler which could be used in the field to verify canine identifications. The results from these tests were compared to known compounds produced by microbiological activity and to the VOCs measured above decomposing pig organs. A further experiment tested the pseudo scents and decomposing pig organs for insect activity outdoors to help determine whether the samples contained VOCs likely to be found near buried or surface remains.

SPME GC/MS was able to identify 26 compounds in the pseudo scent formulations. Direct injection into the GC/MS detected an additional 11 compounds. Insect activity was observed when the pseudo scents were placed outdoors, indicating that they may contain compounds likely to be found near surface remains. Based on these results, it is possible to characterize pseudo scents and determine which training aids will be most useful in the training of canines for the recovery of surface or buried remains.

Human Remains Detection, Gas Chromatography Mass Spectrometry, Solid Phase Microextraction