

## **CONCURRENT SESSION 5 – WASTE MANAGEMENT**

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### **Evaluation of Whole-Carcass Composting as a Disposal Option for African Swine Fever Virus (ASFV)-Infected Swine**

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An outbreak of African Swine Fever (ASF) on U.S. soil would be detrimental to swine producers and disrupt international trade of pork products. Globally, ASF outbreaks have resulted in the deaths of millions of pigs, prioritizing the need to better understand carcass disposal methods capable of ASF virus (ASFV) elimination. In this study we evaluated whole-carcass composting as a disposal option for ASFV-infected swine in a BSL3-Ag high-containment laboratory. Four swine were composted in a windrow constructed according to USDA Agriculture Livestock Mortality Composting Guidelines. Windrow internal temperatures were monitored over 37 days both manually and with Hobo data loggers. Infected spleen samples were removed from the compost windrow at days 0, 1, 3, 5, 7, 10, 14, 21, and 28. At the study conclusion, skin, muscle, and bone marrow tissues were collected from the decomposed carcasses in addition to sentinel carbon materials. All samples were processed and tested for the presence of viral DNA via RT-PCR and for infectious ASFV by viral isolation. Windrow temperatures >130°F were recorded for >14 days. Experimental results demonstrated that infectious ASFV was rapidly eliminated in spleen samples by day 5. After 37 days, no live virus was detectable in any remaining tissues. While ASFV DNA degraded significantly over time, it remained detectable in swine tissues and sentinel compost samples at the conclusion of the study.

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