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Analytical Division
Research Directorate

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Analysis/Evaluation of Powder Sample

A shipment designated 10027K(4), carrying Registry Number C-290-83, received by the Analytical Division 15 Nov 83 from FSTC, contained six subsamples. No information was available on any of the samples. Samples 10027K(4)-1, 2, 3, 4 and 6 were previously reported 26 Sep 84. Sample 10027K(4)-5 consisted of approximately 5 mg. brown powder wrapped in a tablet paper in a wide mouth screw top glass jar. A picture of the sample was included in the 26 Sep 84 report.

A vapor sample withdrawn from within the sample enclosure was subjected to analysis by gas chromatography/mass spectrometry (GC/MS). A portion of the powder was extracted with chloroform. Another portion was extracted with 1:1 methanol:water. The solvent soluble materials were analyzed by GC/MS, ion chromatography (IC), thin layer chromatography (TLC), and infrared spectrometry. Scanning electron microscopy (SEM) was performed on a portion of the neat powder.

The GC/MS spectra of the vapor associated with the sample identified the presence of camphor and menthol as the primary components and toluene, xylene, styrene, acetophenone, isopropyl benzene, t-butyl benzene, propyl toluene or butyl benzene and approximately 6 isomers of $C_{10}H_{14}O-R$ as minor components.

GC/MS analysis of the chloroform solubles did not give definitive spectra. IC detected no ions of interest. No separations of components was detected by TLC. IR detected aliphatic hydrocarbons and water. Derivatization with negative ion chemical ionization MS detection was positive for scirpentriol, tetraol and verrucarol. The detection of these trichothecenes in picogram (pg). levels could not be confirmed by other laboratories, due to their minimum detection level being higher than that of CRDEC's. SEM identified the presence of at least two pollen types, leaf fragments and possible grain fragments.

Conclusion:

No evidence of any known CW agent or agent degradation products was detected. The detection of the trichothecenes scirpentriol, tetraol and verrucarol was of interest, however, the inability of other laboratories to confirm the findings, and the very low levels (picograms) detected and the unique combination of toxins is difficult to explain and leads to no obvious conclusions.

Classified by: CIA
Declassify: OADR