

against the success in finding those samples which would have required transportation and a more detailed analysis in verification laboratories. The most important samples were those containing Schedule 1 compounds and those containing methylphosphonates, especially the octyl derivatives.

The only Schedule 1 chemicals, the mixture of isomeric octyl methylphosphonofluoridates, were reported only by two laboratories although sophisticated in-house equipment were available in the majority of the laboratories. This is due to the degradation of the fluoridates during transport and the lack of analytical reference data. This underlines the need for rapid transport and that all verification laboratories have a database of scheduled chemicals as wide as possible. The database will not, however, remove completely the need for fully authenticated and validated reference chemicals.

Both the scope and quality of the database for the instruments used by inspectors on-site is important for the success of on-site analysis. It is the only way allowing on-site detection with chromatographic methods and, as shown by this test, very important also when mass spectrometry is used as the GC detector. Mass chromatography allows monitoring of scheduled compounds using different ion combinations and, in this respect, is more versatile than selected ion monitoring, although less sensitive. To reduce the amount of work, information on retention times is still essential to know where to look for compounds present in very low concentrations especially, when the samples also contain high concentrations of compounds having the same ions of interest.

NMR spectrometry, especially phosphorus NMR, turned out to be an important method for detecting the phosphorus compounds. The selectivity and sensitivity of fluorine NMR make it important for the detection of phosphonofluoridates. However, at present NMR spectrometers do not belong to portable, or even to transportable, equipment.

Infrared spectrometry seemed to afford a convenient method for additional confirmation of the identifications especially when reference spectra were available. Only one laboratory reported