D80 Comparison and Assessment of Field Test Kits for Commonly Seized Drugs of Abuse

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After attending this presentation, attendees will learn the differences in various types of field test kits. The capability, advantages, and disadvantages of different field test kits to presumptively identify several compounds of interest, including marijuana, bath salts, and synthetic cannabinoids, will be demonstrated.

This presentation will impact the forensic science community by providing an unbiased comparison and analysis of presumptive field test kits. This research will assess the strengths and weaknesses of three different field test kits available for testing marijuana. This research will also compare various field test kits that are available for presumptive testing of drugs that are commonly seen by law enforcement. Comparisons and assessments will include ease of use, number of compounds presumptively identified by a kit, and accuracy of identification. This presentation will allow law enforcement and the forensic community to make an educated decision about which field test kits best meet their needs for presumptive testing.

Field test kits have always been an integral part of law enforcement for the testing of commonly seized drugs. These kits must be simple to use and understand, while being robust and reliable. The basis of these presumptive test kits is the distinct color change associated with the addition of the compounds of interest. However, the quantity of sample introduced into the kit can adversely affect the color change of the resulting mixture and, therefore, the commonly used phrase "bigger is better" is not useful to this situation. For the marijuana test, officers sometimes utilize a large sample size which can cause issues with visualizing the color change and the excess material and broken glass can crowd the container, making the reagents and layers less visible. Identa® Corporation has developed a different sampling system that could potentially eliminate these types of issues. This research will look at the different systems comparing IDenta® Corporation's system versus the traditional pouch test kit and the glass ampoule test kits.

The synthetic compounds are continuously changing with time and legislation. As changes to the molecules occur, law enforcement is still tasked with identifying which packages of "spice" are controlled or not controlled and the decision of whether or not to seize the package. Field test kits are sold with the promise of being able to help the officer identify synthetics. This research will look at test kits from different companies and identify kits that are easy to use and produce accurate results. Samples tested using field test kits will also be analyzed on a gas-chromatograph/mass spectrometer to identify which synthetic cannabinoids, if any, are present.

The last component of this research will look at using different field test kits to identify "bath salts." There are many different compounds that are sold as "bath salts," but is there a kit available that can identify them all using a color test or do officers need to carry around multiple kits? Issues that will be addressed include multiple kits versus one kit, officer safety, and ease of use.

Field Test Kits, Synthetic Cannabinoids, Bath Salts

 ** Presenting Author*