

State Notes

TOPICS OF LEGISLATIVE INTEREST

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Controlling Synthetic Marijuana **By Patrick Affholter, Legislative Analyst**

Michigan recently enacted legislation to outlaw the possession and use of certain compounds that resemble marijuana but have a different chemical structure. Smoking or otherwise ingesting synthetic cannabinoids is said to produce effects similar to those of marijuana use, but the health risks of "fake weed" can be greater. As synthetic marijuana has grown in popularity and availability across the country, other states also have acted to combat the phenomenon.

This article discusses the development of synthetic marijuana and the effects of its use, the response by states, and the effectiveness of banning the substance.

Development of Synthetic Cannabinoids

Dr. John W. Huffman, a professor of organic chemistry at Clemson University, and his research team, began developing cannabinoid compounds in 1984 to research their effects on the brain and other organs. According to the Clemson website, the long-term goals of the research "include the potential development of new pharmaceutical products and an exploration of the geometry" of cannabinoid receptors. Huffman and his team reportedly have developed hundreds of synthetic cannabinoid compounds in an effort to provide a better understanding of diseases and information for the development of medication.

The research team developed these synthetic cannabinoids for laboratory research purposes, and not for marketing to the public or human consumption. In recent years, however, some of Huffman's cannabinoid compounds (which are identified by the researcher's initials, "JWH" and a numbering system) began to be sold as marijuana alternatives under product names such as "K2" and "Spice". While it is unclear how the compounds migrated from the research lab to the consumer market, Huffman has indicated that it is quite easy to make them from commercially available materials.

The JWH chemical compounds, and other synthetic cannabinoids, can be sprayed on dried herbs and leaves which then are sold as a type of potpourri or incense, though most users reportedly smoke the product as they would marijuana or ingest it in a mix with edible items. Synthetic cannabinoid products may be quite easily obtained from internet sales websites or at so-called "head shops". There also have been reports of the products' being sold at gas stations and convenience stores.

Effects of Synthetic Cannabinoids

While marketers of K2, Spice, and similar products contend that they should be used as potpourri or incense and are not for human consumption, published reports and legislative testimony suggest that most users smoke the products to achieve an effect similar to that of smoking marijuana. Synthetic cannabinoids, however, can be much more potent than marijuana and using the substances can lead to more serious side effects. According to the website of the U.S. Department of Justice Drug Enforcement Administration's Office of Diversion Control, behavioral studies have shown that synthetic cannabinoids decrease overall



activity, produce analgesia, decrease body temperature, and produce catalepsy. Some studies have found the subjective effects of certain synthetic cannabinoids to be as much as 66 to 80 times more active than those of THC (the main active chemical in marijuana) in some animals.

An article posted on the "live Science" website in March 2010, reported on a St. Louis toxicology professor who had seen nearly 30 cases of the adverse effects of smoking synthetic marijuana in the previous month ("Fake Weed, Real Drug: K2 Causing Hallucinations in Teens"). While the synthetic cannabinoid compounds apparently work on the brain in the same manner as THC, some patients had symptoms that do not match up with marijuana use, such as increased agitation and elevated blood pressure and heart rates. Another article, posted on "The Medical News" website in March 2010, said that those symptoms suggest that K2 affects the cardiovascular system and "also is believe to affect the central nervous system, causing severe, potentially life-threatening hallucinations and, in some cases, seizures" ("Toxins in K2: Saint Louis University professor warns parents to look out for warning signs").

A recent article in a National Conference of State Legislatures (NCSL) publication said that through September 27, there had been more than 1,503 calls in 2010 to poison control centers for symptoms such as racing heartbeat, elevated blood pressure, and nausea, compared with just 14 such calls in 2009, according to the American Association of Prison Control Centers (*State Legislatures* magazine, October/November 2010). The NCSL article also cited reports linking use of synthetic cannabinoid compounds to hallucinations, seizures, and death.

State Reactions to Synthetic Cannabinoid Use

According to the NCSL, 10 states (including Michigan) have banned at least some synthetic cannabinoids by statute, and legislation was pending in at least four more states at the end of September. Four other states have taken administrative actions to ban synthetic cannabinoids, and one state has formed an advisory committee to review and recommend whether synthetic cannabinoids should be added to the controlled substances list.

In Michigan, Public Act 171 of 2010 amended the Public Health Code to include various synthetic cannabinoids, including JWH-018, JWH-073, JWH-015, JWH-200, and JWH-250, in the Code's list of Schedule 1 controlled substances. A Schedule 1 controlled substance is a substance that has high potential for abuse and has no accepted medical use in treatment in the United States or lacks accepted safety for use in treatment under medical supervision. Public Act 169 of 2010 amended the Public Health Code to extend the penalties for possession and use of marijuana to the possession and use of the synthetic cannabinoids listed in Public Act 171.

Under the Public Health Code, a person may not knowingly or intentionally possess or use a controlled substance unless it was obtained directly from, or pursuant to, a valid prescription or order of a practitioner while acting in the course of his or her professional practice. A possession violation involving marijuana is a misdemeanor punishable by up to one year's imprisonment, a maximum fine of \$2,000, or both. A violation involving the use of marijuana is a misdemeanor punishable by up to 90 days' imprisonment, a maximum fine of \$100, or



both. Public Act 169 extended those penalties to the possession and use of the synthetic cannabinoids added to Schedule 1 by Public Act 171.

Public Acts 169 and 171 both took effect on October 1, 2010. (In addition to including synthetic cannabinoids in Schedule 1, Public Act 171 added other substances to Schedule 1 and Schedule 4, and Public Act 169 prescribed penalties for possession and use of those substances.)

The Effectiveness of Banning Synthetic Cannabinoids

As discussed above, synthetic cannabinoid compounds were developed in laboratories in order to study the effects of cannabis on the brain, and were never intended for human consumption. Unlike marijuana, these compounds evidently cannot be detected in the body through drug tests. Given their pharmacological similarities to marijuana, the results of lab research on animals, and the severe cardiovascular and neurological symptoms observed in users of synthetic cannabinoids, Michigan joined several other states in banning the use and possession of the substances. The legislation acknowledges the danger of the products known variously as K2, Spice, and other names, and should protect the health of potential users. It also may help law enforcement to respond to the growing trafficking of those fake marijuana products, as well as reduce their availability.

Including synthetic cannabinoids on controlled substances lists is a recent development, with states just beginning to do so this year and Michigan's law taking effect recently, on October 1. As a result, the full effect of a legal ban on those substances remains to be seen. Those who did a brisk business in synthetic cannabinoids in other states, however, reportedly moved quickly to avoid the new laws by making slight changes to the chemical structure of the now-banned substances. In Kansas, the first state to pass legislation banning synthetic cannabinoids, "even police acknowledge that the laws are all but meaningless because merchants can so easily offer legal alternatives" according to an Associated Press (AP) article that appeared on the website of the *Battle Creek Enquirer* ("Fake marijuana bans do little to deter business", 9-16-10).

Michigan's law is said to be broader than those passed in other states. An article on the website of the *Livingston Daily Press & Argus*, however, cited the owner of a Brighton store who claimed, "Outlawing the substances found in K2 incense will only result in chemists finding legal combinations for similar products" ("State law snuffs out K2 synthetic high", 10-6-10). Indeed, the shop owner was reported to say that other states that have outlawed the substances have been "flooded" with new, legal products to replace K2 and he soon would reintroduce a synthetic cannabinoid product with legal substances.

Dr. Huffman, the original developer of many of the synthetic cannabinoid chemical compounds, evidently "has little faith that the bans will deter manufacturers or consumers". According to the AP article cited above, "'It's not going to be effective,' he said. 'Is the ban on marijuana effective?'"