## CRIMINAL OR NON-CRIMINAL – K2 AND RELATED DRUGS NEED TO BE CRIMINALIZED, by Bryon W. Gross

K2 is the brand name of an incense blend, made of herbs, spices and synthetic cannabinoids (notably JWH-018 and JWH-073), which mimic the brain's reaction to cannabis. Reportedly produced in China and Korea, it is sold as incense but has been used in similar ways as marijuana. K2 is widely available for purchase online and in smoke shops.

Legal alternatives to marijuana are being used in increasing numbers across the United States. Various formulations are being sold under names such as: K2 Incense, Spice, Blonde, Summit, Standard, and Citron. Some of these formulations include salvia divinorum. Salvia divinorum or "Salvia", also called Diviner's sage is a perennial herb in the mint family. The herb is native to Mexico but grows in the United States as well. In Mexico, the Mazatec Indians use the herb in healing ceremonies.

Salvia contains Salvinorin A which is an hallucinogen. Salvinorin A can be absorbed from the plant by smoking, chewing, tea infusions or inhaling vapors of the burning leaves. When absorbed the effects that can be seen include hallucinations and synesthesia (where one misinterpretes sensory input; smell a color for example). Long-term effects are unknown, but may be similar to LSD where one can experience flashbacks and depression.

Users report highs that last between 30 minutes and two hours, and at times describe out-of-body experiences. The most common symptoms that have been reported include:

- tachycardia (increased heart rate)
- agitation/irritability
- nausea and vomiting
- confusion
- drowsiness
- headache
- hypertension
- electrolyte abnormalities
- seizures
- syncope (loss of consciousness).

It has being reported that some users have suffered atypical reactions that require hospitalization after K2 use. Typical symptoms of those calling poison control centers or presenting themselves

to ER include; an increased heart rate, paranoia, psychotic behavior and even loss of consciousness. Another study also concluded that K2 users suffer withdrawal symptoms associated with drug use (Zimmerman et al). These two observations have been widely disputed especially by K2 users who claim no adverse effects related to the use of the herbal concoction. However, this could be dependent on the concentration and purity of the synthetic cannabis found in the different batches of K2.

## Cause for concern:

- Overdose reactions, especially in adolescents
- The mixture will not show up on a urine drug screen as THC.
- JWH-018 and CP 47,497 are synthetic substances which have not been licensed anywhere worldwide for medical applications and little is known about their effect on humans, as not even pre-clinical studies have been conducted to determine potential toxicity.