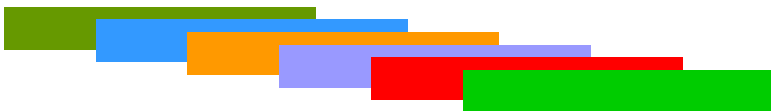


# Synthetic Cannabinoids

## Herbal Incense / Herbal Blends

,Spice' Products



**Brochure for professionals:**

*Prevention organisations, educational and medical staff,  
law enforcement authorities*

## What are herbal blends?

Herbal blends, herbal incense or herbal highs are sold in one or three gram-packs with a catchy brand name on it, often labelled “not for human consumption”. Trade names are “Spice”, “Jamaican Gold”, “Monkees go Bananas”, “Black Mamba” or “Lava Red”. They are usually smoked in a cigarette, in a pipe or a bong, similar to cannabis use. After smoking, onset of action usually occurs within a few minutes. The ingredients listed on the packets do not reflect the actual composition; in particular, the active compounds – synthetic cannabinoids - are usually not listed. Synthetic cannabinoids are psychoactive substances which applied to mixtures of plant materials. **Synthetic cannabinoids mimic the effects of delta-9-tetrahydrocannabinol (THC)**, the main active compound of cannabis / marijuana. Synthetic cannabinoids attach themselves to the cannabinoid receptors (CB<sub>1</sub> or CB<sub>2</sub>) in the brain (cell membrane receptors mediating typical effects occurring after cannabis use). But synthetic cannabinoids are completely different from the THC molecule and **they are much more potent (and more toxic) than THC.**

### Particularities of synthetic cannabinoids:

- **Smoke from herbal incense does not smell like cannabis.**
- **Commonly used drug screenings do not detect use of synthetic cannabinoids.**
- **Pharmacological profile of synthetic cannabinoids differs heavily from THC.**

**‘Spice’ products are mostly sold via the Internet** and sometimes in tobacco shops or ‘head shops’.

## Background

Around 2004, a number of herbal incense products, first sold under the brand name 'Spice', appeared in Europe. Herbal incense or herbal blends were gaining a high degree of popularity by mid-2008 in many countries such as Germany, Poland or the UK. In December 2008, German labs identified synthetic cannabinoids in these products.

Most of the respective cannabinoids were first synthesised in the context of pharmaceutical research projects carried out in the 1980s and 1990s. They had never shown up in any commercially available product before and **no human studies with these cannabinoids have been carried out, so these substances must be regarded as not safe.**

The JWH series, created by the chemist John W. Huffman at Clemson University, is the most common group of synthetic cannabinoids (e.g., JWH-018, JWH-073, or JWH-210). Other names of cannabinomimetics include e.g. HU-210 (HU stands for 'Hebrew University'), AM-694 (AM stands for Alexandros Makriyannis, another cannabinoid researcher) or CP 47,497. There are hundreds of synthetic cannabinoids that may function as active compounds of herbal mixtures.

## Prevalence/ motivation for use

In context of the above mentioned media attention for 'Spice' products, where they were called a 'legal alternative' to cannabis, these products were initially found to be popular among users of different ages and socioeconomic status. It appears to be the case that media interest and the prevalence of synthetic cannabinoids are strongly related.

Representative data on Spice use are sparse. An annual local representative students' survey in Frankfurt, Germany, shows that the number of 15- to 18-year-olds who had ever used 'herbal incense' increased from 6% in 2008 to 9% in 2010, followed by a

decrease to 7% in 2011. Similar proportions could be observed among the same age group in a survey conducted 2009 in Hamburg, Germany, with 6% reporting lifetime use of Spice products. Among the German adult population (18-64 years) surveyed in 2009, the lifetime prevalence of Spice was 0.8% and the last year rate 0.4%. Results from the British Crime Survey (2010/11) show that among young adults (16-24 years) in England and Wales the last year prevalence of 'Spice' products was 0.4% . It should be emphasised that **there are very few regular users of such substances.**

Little is known about characteristics, types and motivations of users. An online survey in Germany showed that the largest group of users are experimental users and their primary reason for using 'Spice' products is curiosity. Since synthetic cannabinoids are **used as a substitute for cannabis**, the availability and quality of cannabis also seems to play a major role for the prevalence of 'Spice' products. A considerable percentage of herbal incense users regarded the non-detectability as an important motive. So far, it is known about user groups that most of the current and frequent herbal incense users currently smoke cannabis as well; just a small group has completely replaced the use of illicit drugs with herbal incense. It still remains to be seen if there is a new trend emerging and if there is the development of a stable group of regular herbal incense users.

## Legal status

One particularity of the 'Spice' product phenomenon is that substances are quickly replaced by other substances when they are listed in the annexes of the Narcotics acts. The frequent change of compositions and substances by manufacturers and traders makes it difficult to assess, monitor and control the supply of these products. But specialised laboratories are now able to identify all commercially available synthetic cannabinoids.

To date, **almost all European countries have implemented legal control measures on the first synthetic cannabinoids**

that came to prominence (e.g. JWH-018). But none of the synthetic cannabinoids found so far in 'Spice' and 'Spice'-like products are internationally controlled under UN drug control conventions.

At present, the control status of these compounds differs significantly from country to country. In countries like the UK and Switzerland, a generic definition was chosen to cover not only substances already present in herbal products, but also structurally similar compounds. Austria introduced a new law with specific generic approach on cannabinomimetic ingredients, which aims to inhibit the supply of these substances and to prevent the criminalisation of users. Italy, Luxembourg and Cyprus have added a group definition of synthetic cannabinoids to their drug laws. In Poland, a new law prohibits the manufacture, advertising and introduction of 'substitute drugs' into circulation. Sweden has introduced a new legislation on the destruction of hazardous substances assumed to be used for intoxication and not yet regulated under the drug law. Some countries use medicines laws as a tool to control legal highs. (For more information about the legal status of synthetic cannabinoids in Europe: [www.emcdda.europa.eu](http://www.emcdda.europa.eu))

Most of the European countries try to speed up their response to new psychoactive substances and to protect public health with new legislations.

## Risks

Although the psychotropic effects are similar to those of cannabis, the health related problems differ substantially, but so far, the knowledge of acute toxicity and long-term toxicity of synthetic cannabinoids is limited. **Synthetic cannabinoids can cause e.g. psychotic episodes, panic attacks, increased heart rates, raised blood pressure, vomiting, convulsions and may damage organs.**

There is some reason for concern that these drugs may have a greater potential to cause harm than regular cannabis. These assumptions largely derive from the fact that many cannabimimetics act as full agonists at the human cannabinoid receptor type 1, while THC shows only partial agonistic action. Moreover, preliminary evidence indicates that some synthetic cannabinoids may have carcinogenic potential. Additionally there are case reports which suggest that some of these substances might be highly **addictive**. Furthermore, **severe intoxications are more likely to occur because of the unknown ingredients of different herbal mixtures and high dosage applications to the plant material, and because of the extremely high potency (receptor affinity) of some synthetic cannabinoids**. A particular risk is that the same brand may contain at another time a different type of synthetic cannabinoids in different amounts.

The question arises how potential harms associated with the use of new psychoactive substances can be reduced and minimised. First of all, there is a need of substantial and scientifically reliable information on these substances and the risks related to their use. The wide variety of strategies concerning illegal substances is useful also for users of 'legal highs'. It may be of great value to focus in particular on Internet-based counselling and information services.

## Prevention advice

- The Internet plays an important role for the users of new psychoactive substances. For this reason **new communication technologies in prevention work** are very useful.
- The information offered should be **objective, credible and timely**.
- An immediate counselling via **telephone hotline** should also be offered.

- Prevention programmes should follow a **peer-oriented approach** providing access to different populations of drug users.
- **Workshops for employees in the drug prevention field** could raise the awareness for the topic and provide information on characteristics of the phenomenon of synthetic cannabinoids.
- Prevention work should focus on creating **realistic perceptions of synthetic cannabinoids use**: It should refer to the existing representative data instead of anecdotal or hearsay evidence that tends to overestimate the phenomenon.
- Please note: Regular users of herbal incense are rather rare; most of users of herbal incense smoke cannabis as well.

#### **Messages for users of synthetic cannabinoids:**

- **Keep in mind that the same brand might have totally different effects and side effects**
- **Always be prepared for unexpected effects**
- **Be aware that the use of synthetic cannabinoids can be detected in blood, urine and hair samples by specialised labs**
- **Have a person with you who doesn't use (never use alone)**
- **Never smoke and drive**
- **Learn all you can about new substances before use**
- **Use low dosage**

For more information: <http://legal-high-inhaltsstoffe.de/>

## **EU-Project “SPICE and synthetic cannabinoids”**

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