Cannabis labels often wrong and misleading
14 October 2021

The well-known India and Sativa labels that are used on cannabis products and form the basis for the information provided to users of medicinal cannabis are usually wrong and misleading. That is what researchers from Wageningen University & Research and the Canadian Dalhousie University conclude after analyzing hundreds of cannabis samples. Their research showed that the genetic and chemical composition of the cannabis tested often does not match the Indica or Sativa label.

Also surprising is the fact that various cannabis samples sold under the same name, such as 'Lemon Haze' or 'OG Kush', could be as genetically different from one another as samples with different names.

The results are being published on Friday in the leading international journal Nature Plants. According to the researchers, the cannabis industry needs to take a more critical look at the provision of information on their products and use a more scientific approach.

**Indica and Sativa**

"Growers across the world label their cannabis varieties quite subjectively with the terms Indica and Sativa. This means that retailers and consumers are unable to rely on the respective labels," says Dr. Sean Myles, Associate Professor at Dalhousie University and corresponding author of the study.

The terms Indica and Sativa are often used to classify cannabis. It is generally assumed that these different terms are associated with certain aromas and psychoactive effects. But the research carried out by WUR and Dalhousie shows that it is not possible to tell from the genetics nor from the chemistry whether a cannabis plant is an Indica or a Sativa. They conclude that current Indica and Sativa labels do not provide reliable information on the genetic or chemical composition of the plant.

"What our study mainly shows is that you can't rely solely on those labels but that you have to look at the specific terpene profile," says Robin van Velzen, lecturer in Biosystematics at WUR and co-author of the study. As a researcher, Van Velzen is also linked to Bedrocan, which produces medicinal cannabis for the Dutch government.

**Terpene profile**

Terpenes are aromatic molecules that can be found in many plants. Van Velzen says that "for example, cannabis labeled as Sativa often contains higher concentrations of some terpenes with tea-like and fruity aromas, while Indica samples generally have higher concentrations of terpenes that smell earthy, such as myrcene, guaiol, gamma-elemene and gamma-eudesmol."

But the difference found by the researchers is far from convincing: "It really is these specific individual terpenes that account for the difference. Like the genetics, the total chemical profile does not show a clear difference between the labels. In addition, we have only found a small number of regions in the cannabis genome (the collection of all the genes in cannabis) that likely contribute to the earthy aroma associated with the Indica label," Van Velzen says.
Van Velzen says that "unlike other high-value plant species, the labeling of cannabis is highly unreliable. This is highly undesirable, particularly for patients who use cannabis as a medicinal product and who benefit from good, consistent quality."

**Reliable information very important**

According to the researchers, the industry must provide more transparency on chemical composition. "Producers should display the terpene profiles instead of an unreliable name like Indica or Sativa. A number of companies fortunately do that already, but yet there is no standardized measuring and naming convention. Reliable information is essential, particularly for medicinal uses," Van Velzen concludes.


Provided by Wageningen University