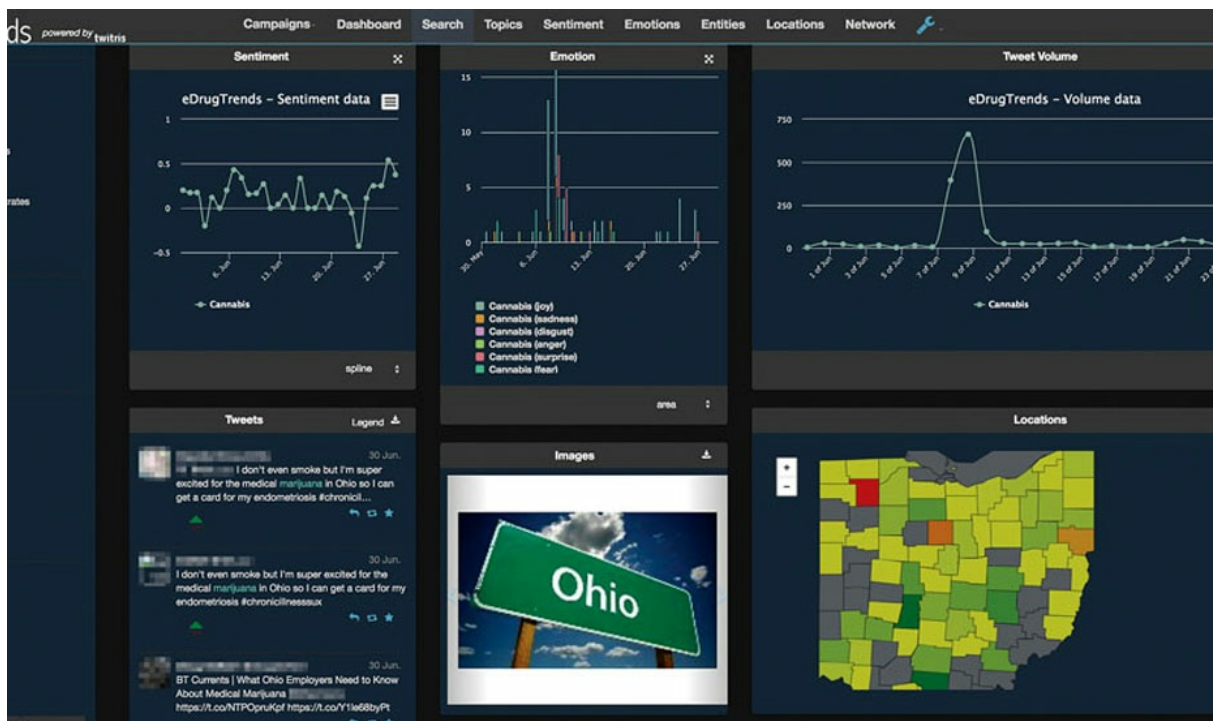


Eat it, then tweet it

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Wright State researchers weave tweets into big cannabis data

By Sarah Sidlow

Photo: Developed by local researchers, eDrugTrends software combs Twitter for information and trends related to cannabis products

You spent all that time agonizing over just the right phrasing, paired it with the right hashtag, and tagged the right people. Well, it turns out those 140-character spurts of indelible wisdom aren't completely useless after all. That is, if you're talking about marijuana.

Researchers at the Center for Interventions, Treatment, and Addictions Research (CITAR) in Wright State University Boonshoft School of Medicine and the Ohio Center of Excellence in Knowledge-enabled Computing (Kno.e.sis) are harnessing the big-data potential of Twitter to monitor and analyze trends related to cannabis products, including marijuana edibles. The study is funded by the National Institute on Drug Abuse (Raminta Daniulaityte, Ph.D., and Amit Sheth, Ph.D., Principal Investigators).

Their study, "Those Edibles Hit Hard: Exploration of Twitter Data on Cannabis Edibles in the U.S.," is the first-ever attempt to analyze Twitter data on marijuana edibles. And it has been published in *Drug and Alcohol Dependence*, a peer-reviewed international journal that publishes original research, scholarly reviews, commentaries, and policy analyses in the area of drug, alcohol, and tobacco use and dependence.

For Francois R. Lamy, Ph.D., a postdoctoral research fellow in CITAR and Kno.e.sis, the process, and the results, are encouraging. He's on the team that developed eDrugTrends, a software platform capable of processing social media data. Basically, his research starts after you hit tweet.

A little bird told me...

“[Twitter] makes available 1 percent of all the tweets sent everyday in the world from which we can filter and analyze tweets on keywords of our interest,” Lamy says. “For example, we have a lot of key words, which we call ‘key word search terms,’ related to marijuana edibles, weed, synthetic cannabinoids, marijuana concentrate, etc.”

The average daily volume on twitter is 500 million tweets. So, if Lamy’s team receives fewer than 5 million tweets a day, they’re looking at roughly all of the English-language tweets related to all of their key words.

From there, the software filters out words and phrases that are on the team’s “blacklist.” These are words like “pot” and “spice,” which, though they could be talking about drug use, are probably more related to things like cooking.

These different layers of refinement are all part of safe, responsible data-ing.

“That’s the big data in science,” Lamy says. “Big data is big responsibilities. You need to be quite sure your data is relevant to your topic before using them.”

Once the data is adequately refined, the idea is to identify overall trends and sentiments surrounding marijuana edible use.

So, why does Twitter work? For a few reasons. The first is all about volume.

“What’s really good with Twitter is that you have data every second,” Lamy says. “You can spot a new trend over shorter or longer periods of time. Why would you go on the street and interview people on the phone and do statistical analysis of all those things? It takes more time. The Twittersphere, the blogosphere...it’s right now.”

Another major advantage is the fact that the research team can get real, honest insight from a population that might otherwise be resistant to being examined. It’s a non-invasive, no-questions-asked method of research.

“Twitter users express themselves freely,” Lamy agrees. “There is no one supervising them, there is no one asking questions.”

Taking a bite out of... well, you know

What has the research team learned with this innovative approach? Plenty.

The team found that the overall opinion of edibles is relatively positive—about 57 percent of the data collected yielded positive attitudes toward marijuana edibles. Compare that with 13 percent of tweets that were negative. (Another interesting point: when the researchers analyzed the state of Ohio on its own, the positive, negative, and neutral opinion percentages matched the rest of the United States almost perfectly—you know the saying, “As Ohio goes, so goes the nation.”)

They also learned that there is a higher tendency for people to overdose on marijuana when it’s eaten, versus when it’s smoked.

“The point is that when you smoke cannabis, the peak is reached after three or five minutes,” Lamy explains. “With edibles, it’s 45 minutes to maybe an hour. So for those who are waiting for the effect to kick in, in five to 10 minutes, they might say, ‘That’s nothing to me, let’s have another one, let’s have another one, let’s have another one.’ It’s easy to overdo.”

Researchers have also identified another trend in edibles: some users want to change the recipe. There are two main chemical components of cannabis: THC (or Tetrahydrocannabinol) and CBD (cannabidiol). The high comes

from THC; CBD, however, is not intoxicating. But CBD has the ability to balance the effects of THC, and is often credited with such medicinal properties as calming anxiety, relieving pain, treating seizures, and other neurological disorders.

“There is a trend where people want more THC and less CBD,” Lamy says. “The medical ratio of THC to CBD is 50:50. That’s also a risk if it’s not controlled well—to have people ingesting 90 percent THC to 10 CBD...that’s not good.”

The research also reveals that there can be a disparity in the potency of edibles. Sure, places like Colorado have guidelines that pertain to THC ratios in their products, but because there’s no national consensus on marijuana, there’s no national standard for its production—to say nothing of those home bakers who whip up edibles on their own.

Lamy says increased education is the first step, and the research the CITAR/ Kno.e.sis team is doing is adding to the public conversation.

“I’m lucky enough to work on this kind of data; it’s really interesting, it’s really large,” Lamy says. “You can see change. You are able to look back in time because we collect and store the data. Here our trends can change and here some evidence can modify the opinion of people. It’s also interesting because legislation is changing really quickly over all of the country.”

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