



Where Is All the GMO Weed?



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High Times -

Some [mainstream news](#) authorities will have you believe that the weed we smoke these days has been genetically modified to produce insane amounts of THC. They cite old studies that use increases in THC potency as proof cannabis has been genetically modified, but without any genetic evidence. So where is this GMO weed and who is smoking it all? Because it surely isn't any of us...

Several long term [research projects](#) have tracked data about the potency of cannabis for almost 40 years. The increase in THC potency since then is certainly impressive; most domestic cannabis in the 60's had around 5 % THC by mass, while foreign cannabis (much less common and therefore less likely to end up in the hands of drug research labs) could have as much as 15 %. In the 60's and 70's, cheap weed went for around \$20 an ounce and had a very mild high, but if you got your hands on some [Acapulco Gold](#) or maybe even [Thai Stick](#), a hit or two of that would knock you out for the whole day. Check out the [HIGH TIMES interview with Willie Nelson](#) to read about the times when Mexican pot was the stuff to smoke.

Market-wide potency has steadily increased over the past 40 years; research at the School of Pharmacy at the University of Mississippi attributes this to increasing amounts of more powerful foreign cannabis from places like Mexico, Colombia and Southeast Asia. Soldiers and tourists coming back and forth between the US, South America, Vietnam, [India](#), Pakistan, [South Africa](#) and Morocco spread pot, and its seeds, far and wide. Ditchweed *ruderalis* cannabis grows in North America naturally, but produces small buds with sparse trichomes containing CBD and THC. Cannabis can, and does, grow all over the world, but it takes certain climates to produce high THC. Scientists aren't clear on what the exact reason why cannabinoids grow in the plant, and its probably for a variety of reasons, such as ultraviolet light. While all pot plants make [cannabinoids](#), only the ones native to equatorial regions or high altitudes (high UV areas) have evolved the genetic code to make almost all THC.

Nowadays, 15 percent THC is considered almost low, with 18 -20 percent being standard for medical grade, high-potency cannabis. Has the cannabis genome suffered genetic modification or is it just selective breeding that has lead to an increase in potency?

CJ Schwartz from [Marigene](#), a PhD in Biochemistry from the University of Wisconsin and an expert in cannabis genetics, weighed in on the subject. "I truly don't think there is any GMO cannabis out there." If it's not GMO, then what explains the drastic increase in THC?

"So if you have a GMO plant you could introduce multiple copies of THC-synthase to produce more THC, but then there's also

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ways that nature will do that by itself through gene duplication... So the plant that, by chance, had a duplication of THC-synthase is selected or favored and that's carried on, while the rest die away," explains Schwartz.

Evolution, and [selective breeding by humans over thousands of years](#), caused cannabis to produce more copies of the gene that codes for *THC-synthase*, the mini chemical factory that produces [THC in the trichomes](#) of the cannabis plant.

While [lab testing](#) could help a breeder choose the best genetics, lab-testing cannabis for purposes other than drug-law enforcement is a fairly recent advent. [New research](#) from the University of Mississippi toyed with the idea of another way to explain how breeders could have increased THC: with a magnifying glass. By selecting phenotypes with larger flowers with bigger and more resinous trichomes breeders put in the painstaking work for generations of crops to make the world's best weed more potent and more economical to grow.

The simple truth of the matter is, selective breeding has already made cannabis pretty much as good as it can get. Anyone looking for more potency doesn't have to mess with GMO weed (because it doesn't exist), they can simply pick up a cannabis extract and dab to their heart's content.

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