

## The Mandate

The 0.3% THC mandate is a problematic interpretation and application of early cannabis science. In 1976, Canadian horticulturalists Ernest Small and Arthur Cronquist published an article in *Taxon*, entitled "A Practical and Natural Taxonomy in Cannabis," in which they provide the seminal demarcation between "industrial hemp" vs "marijuana" that has been adopted by governments around the world. In their words: "It will be noted that we arbitrarily adopt a concentration of 0.3% Delta9-THC (dry weight basis) in young, vigorous leaves of relatively mature plants as a guide to discriminating two classes of plants. This is based on standard-grown material in Ottawa in gardens, greenhouses and growth chambers, and of course on our analytical techniques. Dr. C. E. Turner, who has conducted extensive chemical analysis of Cannabis at the University of Mississippi, has agreed (pers. com.) that this is a reasonable figure to discriminate two classes of plants."

The major scientific problem (besides "we arbitrarily adopt...") is that the widely implemented 0.3% THC concentration limit is often applied to flowering tops (where cannabinoid production is concentrated) instead of the "young, vigorous leaves of relatively mature plants" identified by Small and Cronquist. As we all know, the difference in cannabinoid content between a leaf and a flower is significant, which means current sampling protocols do not match published science. Today, we are aware that the real difference between "industrial hemp" and "marijuana" is derived from two separate genes that are tightly linked (located eight centimorgans apart on chromosome six) and fight to convert the precursor cannabinoid CBG to either THC or CBD when both genes are present.