

ESL 6: The controlled cultivation of *Cannabis sativa* at VitaPlant**Amin Chaanin**

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**Abstract**

Cannabis sativa (Cannabis) belongs -behind alcohol- to the world's most commonly used drugs. On the other hand positive effects in the therapeutic use of cannabis preparations were recorded in the last few years such as treatment of anorexia due to loss of appetite in HIV, for the relief of nausea and vomiting during chemotherapy, in the treatment of various pain disorders as well as for the reduction of symptoms associated with neurological disorders such as multiple sclerosis.

The law in Switzerland bans the cultivation and consumption as well as the trade of cannabis with a total content of THC (tetrahydrocannabinol) of over 1 %. Cannabis with THC levels above this level are considered as narcotics and the use is subject to a specific authorization requirement.

VitaPlant has an operating license from the canton of Thurgau and is required to apply for a special exemption from the Federal Office of Public Health (BAG) for every third party production. Research on cannabis has a long tradition at VitaPlant and several clones have been developed with specific active ingredients over the years. A main focus in the development of Cannabis at VitaPlant is the two cannabinoids: Δ^9 -THC (Δ^9 -tetrahydrocannabinol) and CBD (cannabidiol).

Currently VitaPlant is working on several projects for Swiss companies with respect to the production of cannabis in various grades. It is primarily concerned with the composition of the cannabinoids and the ratio of THC and CBD, but also with various kinds of harvesting. Two different forms of harvesting are used in the preparation of the drug: flowering branches (i.e. herba) or as pure flower (flos). In all cases the female flower is the main product. Depending on the harvested part the amount of THC and CBD differs considerably (Tab. 1). However, the relation between THC and THC-A or CBD and CBD-A is not stable. The time of harvesting and the maturity of flowers as well as the drying and processing of the raw material have an effect on the amount of both compounds.

Tab. 1 Content of THC and CBD in two selected clones depending on the harvested parts of the plant

Clones	Kind of harvest	CBD	CBD-A	Total CBD	THC	THC-A	Total THC
		[%]					
THC typ							
CAN 9#4	flos	0.0	0.0	0.0	1.6	7.4	9.0
CAN 9#4	herba	0.0	0.0	0.0	1.0	6.1	7.0
CBD typ							
CAN 11#3	Flos	0.3	12.8	13.2	0.0	0.4	0.4
CAN 11#3	herba	0.3	5.0	5.3	0.0	0.1	0.1