

Guidance on Sampling and Analysis of delta-9 THC
(tetrahydrocannabinol) in HEMP

1. Background

The accepted maximum level of 0.3% delta-9 THC in hemp corresponds to the level adopted by the European Community. The quantitative determination of THC (delta-9 tetrahydrocannabinol) in hemp is used to confirm that the plants, cultivated from a specific *Cannabis Sativa* variety, contain a level of delta-9 THC within the acceptable limit.

2. Sampling

The number of plants removed for analysis should be representative of the area cultivated for each variety of hemp and should represent 10% of the crop for each variety but [should not exceed] 500 plants. Different areas of the crop, but not from the edges, must be sampled, during daylight hours.

If the research project involves the production of seed, sampling should take place when the first fruits of 50% of the plants show resistance to compression. If the crop is to be harvested at the beginning of flowering or before flowering, sampling is to be performed at the time of harvest.

The sampled plants are [to be] randomly divided into 2 parts of the same size. One part is [to be] used for testing while the other is [to be] retained by the farmer in the event that a retest is required.

3. Drying

Rotting of plant material may be avoided by using a room equipped with a ventilation system. The drying process should be performed by the grower or an authorized person. Starting at no more than 12 hours after collection, the material may be dried at 30⁰ C - 35⁰ C, for 24 hours before sending it to the **licensed** laboratory for analysis. Ideally, the moisture content should be around 15%.

4. Testing

Quantitative determination of delta-9 THC is performed using gas chromatography after its extraction with a suitable solvent.

The EC method¹ or Health Protection Branch method² (both available from Bureau of Drug Surveillance, Phone 613-954-6768 FAX 613-941-4760) may be used to determine the THC content.

5. Evaluation

Where the results of the analysis indicate THC content levels higher than 0.3% but lower than 1%, the retention sample may be used for a retest.

If on retest, the results of analysis show a level of THC higher than 0.3%, the Bureau of Drug Surveillance is to be consulted immediately. It is recognised that data obtained from the analysis of these samples, may be of value in determining an expected THC level for a particular variety of hemp cultivated under certain conditions.

If after investigation, Health Canada determines that destruction of plant materials is necessary, a written confirmation of the disposal of those plants must be forwarded to Health Canada's Regional Office and the Bureau of Drug Surveillance.

¹ Community Method for the Quantitative Determination of Delta-9 THC in Certain Varieties of Hemp
(<http://pressenter.pressenter.com/~davewest/thcassay.html>)

² Gas Chromatographic Determination of Tetrahydrocannabinol in Cannabis, Bureau of Drug Research, Health Protection Branch, October, 1992 (<http://www.hwc.ca/hpb/drugs>)