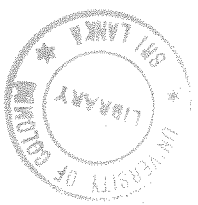
A STUDY ON THE VARIATION OF CANNABINOIDS CONTENT IN CANNABIS SATIVA IN SRI LANKA TO DISTINGUISH THE FIBRE TYPE PLANTS FROM DRUG TYPE PLANTS



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Abstract

There are many different species of cannabis plant but their psychoactive properties mainly depend on their tetrahydrocannabinol (THC) contents which vary according to genetic factors and environmental influences. On the basis of the THC content, all cannabis plants can be divided into two groups namely fibre type and drug type plants. The fibre type plants have a tetrahydrocannabinol content which does not exceed 0.4% while the drug type plant exceeds this level and usually has a THC content reaching 5% or higher. This is the first definition used.

To distinguish the fibre type from the drug type plants another definition has been proposed using the following ratio. If the ratio of [cannabinol (CBN) percentage + tetrahydrocannabinol (THC) percentage] / Cannabidiol (CBD) percentage is greater than 1, the cannabis plant is classified as the drug type. If the ratio is less than < 1, the cannabis plant is classified as the fibre type.

A third definition has also been proposed and has been used in this study.

This is related to the ratio of (Cannabidiol) CBD to tetrahydrocannabinol (THC) and is as follows:

$\frac{CBD}{THC} > 5$ Fibre type (i.e) generally, high CBD and low THC

$\frac{CBD}{THC} < 0.2$ Drug type (i.e) generally, high THC and low CBD

Cannabis fibres have been for a long time used for the manufacture of textiles and allied products. However, today the major growth potential for the fibre type cannabis (hemp) as a plant species is as a replaceable cellulose raw material for use in many industrial sectors. Apart from the paper industry it is also used in construction work in the form of fibre board insulation material and in the form of pressed panels in the motor industry. Additionally, cannabis seed oil has its uses in paint, detergent and lubricant sectors, and in the manufacture of cosmetics.

Fifty one samples of cannabis sativa obtained from four provinces of Sri Lanka namely Western, Southern, Eastern and North Central were subject to analysis by Thin layer chromatography (TLC) and Gas chromatography (GC), standard samples of CBD, THC and CBN obtained from the United Nations Narcotics Laboratory, Vienna, Austria were used as standards for both analytical procedures.

On the basis of the results obtained and using the aforementioned definitions, it was found that the samples from Anuradhapura and Polonnaruwa districts in the North Central Province were cannabis plants of the fibre type.