

## Executive Summary

# Conservation and Evaluation of Mint Essential Oil

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Mint plants, Essential oil, steam distillation, fresh herb, air drying, hydro distillation, monoterpenes, sesquiterpenes, species, subspecies, shade drying, sun drying, genetic differences, herb weight, chemical transformation, Aromatic plants, herb weight, DRTECH and DISTECH

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Essential oil (EO) is a secondary product formed by aromatic plants and is used in food and pharmaceutical industries. It has various chemo preventive properties against liver, lung, colon and gastric cancer<sup>1</sup>. The EO isolated from mint reported as anti-inflammatory, carminative, antiemetic, diaphoretic, antispasmodic, analgesic, stimulant, emmenagogue (menstrual flow stimulant), anti-catarhal, fungicide and anti-oxidant<sup>2</sup>.

In order to increase aromatic crops productivity several techniques are implied. The potential techniques are of drying and distillation. Several studies in literature have reported extraction of essential via both methods.

Drying techniques (DRTECHs) play important roles in the EO production from aromatic plants. The drying of various fresh parts of aromatic plants such as leaves, stems, roots, flowers, seeds and fruits is necessary to reduce weight, volume, fungal and molds attacks, cost of transportation, space of storage and increase the shelf life<sup>3</sup>.

The EO is basically isolated from aromatic plants by distillation techniques (DISTECHs) such as hydro (or water) distillation (HD) and steam distillation (SD). The DISTECHs can produce significant changes in the yield and constituents of EO such isomerization, saponification or polymerization of the more labile components<sup>4</sup>.

The techniques of drying and distillation play very important roles in EO productions, so a new study was carried out to evaluate the EO composition of mint plants under various drying (shade, sun and oven drying) and distillation (HD and SD) techniques<sup>5</sup>.

Mints were harvested and isolation of essential oil was done. The GC and GC-MS analysis were performed for identification of volatile compounds.

Obtained results reported that DRTECHs brought about different decreases in the values of EO contents, major and some minor constituents in EO compared with the fresh status. This may be due to some chemical transformations during the drying process<sup>6</sup>.

The DISTECHs resulted in significant differences in the EO and major components of summer savory. The EO contents and constituents were changed according to species and subspecies of mint which may be due to genetic differences between the species or sub species. Also these results may be due to the changes in herb weight per plant<sup>7</sup>.

It can be concluded that DRTECH and DISTECH resulted in different changes in the essential oil extracted from subspecies or species of mint.

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