209/B

Comparison of essential oil content and composition of different parts of locally grown *Trachyspermum ammi* (L.) Sprague species with market samples

R. M. Dharmadasa,* Y. Gunasekera, A. Lintha, and V. De Silva

Herbal Technology Section, Industrial Technology Institute, Colombo 07.

Trachyspermum ammi (L.) Sprague is a therapeutically important annual herb widely used in traditional and Ayurveda systems of medicine for the treatment of abdominal tumors, pains, piles, and vomiting and to rectify the loss of appetite. Individual compounds present in volatile oils of *T. ammi* play an important role in its therapeutic value. After harvesting of seeds, all other plant parts are considered as trash and it is not commercially used for any other purpose. Therefore, the present study was conducted to assess all the other remaining parts by means of essential oil content and its chemical composition. Four-and-a-halfmonthold well-matured plants were harvested and separated into different parts. A market sample was purchased from an open market. About 100 g of each sample was separately distilled by using a Clevenger apparatus for 5 hours. The essential oil was separated and used for GC-MS analysis. Results are presented as an average of triplicates. The highest oil content was exhibited in the market seed sample (4.5%) followed by locally grown seeds (2.0 %), branches (0.75%) and stems parts (0.5%) respectively. Interestingly, a considerable amount of oil was also observed in waste materials (0.87%). Essential oil compositions of the market sample demonstrated thymol as the major compound followed by γ-terpinene and p-cyamene. In contrast, the main constituents of locally grown plants were p-cyamine, sabinene, and γ-terpinene. Moreover, the essential oil extracted from the market samples had only three compounds, while local sample possessed 12 compounds in its chromatogram. Approximately similar compositions were observed in stems and branches of local samples. Therefore, it can be concluded that a higher oil content and a smaller number of compounds are present in market (imported) samples, while acomparatively lower oil content and extremely different compositions were present in local samples. Further, remaining parts of locally grown *T. ammi* could be used for oil extraction and other potential industries.

Keywords: Essential oil, Hydro distillation, Oil composition, *Trachyspermum ammi*

E-mail: dharmadasarm@gmail.com