

REVIEWER'S REPORT

Manuscript No.: IJAR-52819

Date: 16-07-2025

Title: “ DETERMINATION OF CHARACTERISTIC VOLATILE COMPOUNDS OF MONOFLORAL CHENOPODIACEAE HONEY BY SPME-GC-MS”

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality			✓	
Clarity			✓	
Significance		✓		

Reviewer Name: Dr Aamina

Reviewer's Comment for Publication.

General Overview:

This manuscript presents an analytical study focused on the volatile compound profiling of monofloral Chenopodiaceae honey using headspace solid-phase microextraction coupled with gas chromatography–mass spectrometry (HS-SPME-GC-MS). It contributes valuable data to the field of honey authentication and chemotaxonomy, particularly by documenting Chenopodiaceae honey from Türkiye for the first time through both melisopalynological and chemical analyses.

Strengths:

1. Original Contribution:

The authentication and chemical profiling of Chenopodiaceae honey appear to be novel. This originality enhances the scientific value and relevance of the manuscript, especially for regions where such floral sources are prevalent.

2. Methodological Rigor:

The study employs a recognized, robust technique (SPME-GC-MS) for the identification of volatile compounds, ensuring high sensitivity and specificity in profiling honey aromas. The concurrent use of melisopalynology for floral origin confirmation adds taxonomic reliability.

3. Comprehensive Compound Identification:

The detection and listing of 32 volatile compounds—particularly the identification of 1-Hexanol,

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1-Heptanol, Linalool, and related markers—serve as useful benchmarks for future authentication and comparative studies of honey varieties.

4. **Clarity and Focus:**

The manuscript maintains a clear focus on volatile compounds as indicators of honey quality, flavor profile, and authenticity. The rationale and analytical pathway are logically structured, from sample origin to final conclusion.

5. **Interdisciplinary Relevance:**

The study is relevant to multiple domains: food science (flavor analysis), apiculture, analytical chemistry, and phytochemistry. It also holds practical value for producers and consumers interested in monofloral honey authentication.

Scientific and Practical Merit:

The identification of marker compounds specific to Chenopodiaceae honey contributes to the advancement of honey standardization efforts, particularly useful for establishing geographic indication (GI) or botanical origin certification. The emphasis on aromatic compounds further enhances understanding of honey's sensory and medicinal attributes.

Conclusion:

This manuscript provides a strong and methodically sound contribution to the literature on monofloral honey analysis. The chemical authentication of Chenopodiaceae honey for the first time and the comprehensive identification of its volatile profile open avenues for further research in honey authentication, marketing, and functional food development.