

## Drying behavior of Moldavian dragonhead (*Dracocephalum moldavica*) and blue fenugreek (*Trigonella caerulea*) with regards to processing temperature and their quality

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### Introduction

- Moldavian dragonhead (*Dracocephalum moldavica*) and blue fenugreek (*Trigonella caerulea*) contain valuable ingredients such as phenolic compounds, flavonoids, essential oils, pigments and vitamins.
- In this study, the effect of different drying temperatures on the drying behavior and some quality parameters of Moldavian dragonhead and blue fenugreek was investigated.

### Material and Methods

- The drying experiment was conducted at different processing temperatures of 40, 55, and 70 °C using a high precision laboratory dryer (Fig.1).
- To establish drying curves, weight loss from the samples was recorded.
- Furthermore, the quality of dried samples was investigated in terms of color, total phenolic content and flavonoids.

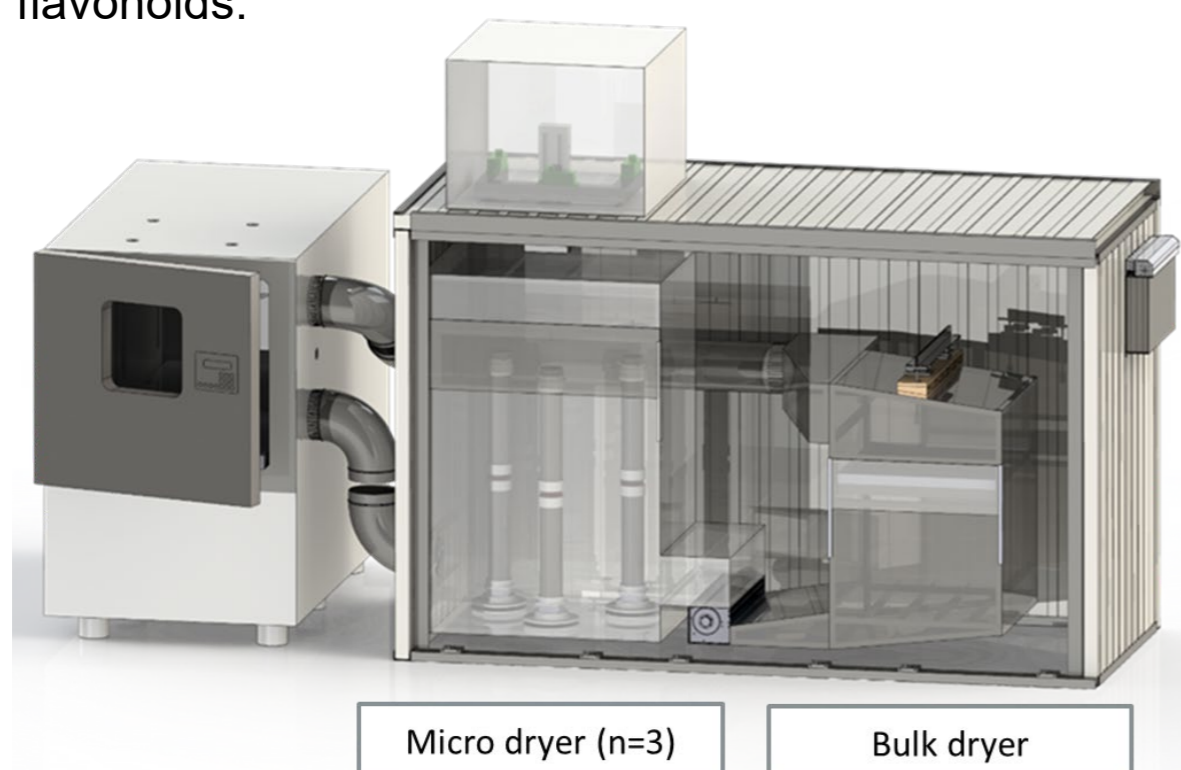


Fig. 1. The high precision laboratory dryer, HPD - TF3+

### Results

- The results show that the moisture content decreased gradually until the desired moisture content of 10% was reached (Fig. 2).

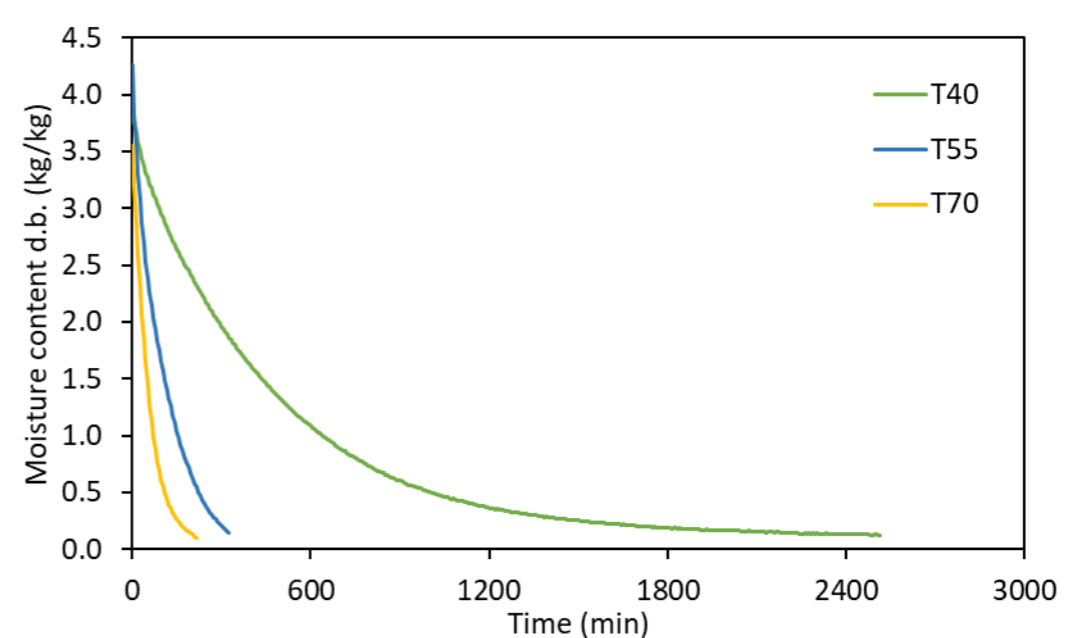


Fig. 2. The drying curve of Moldavian dragonhead at different temperature.

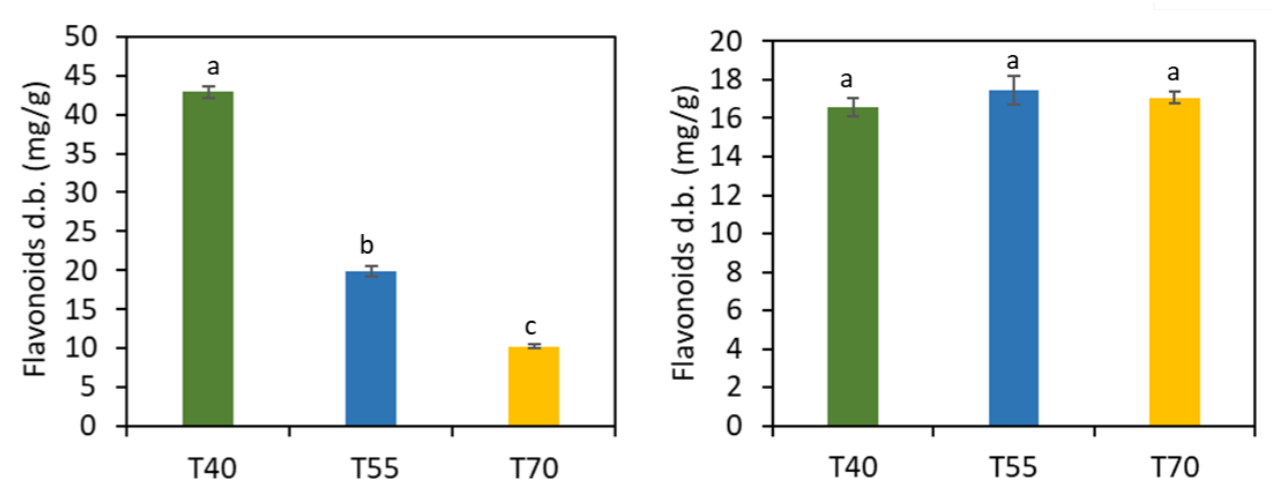


Fig. 3. The flavonoid content of Moldavian dragonhead (left) and blue fenugreek (right) dried at different temperature.

- The color values of both plants were noticeably affected by drying temperature.
- There was a significant difference in the amount of total phenolic and flavonoids in Moldavian dragonhead dried at different temperatures.
- However, there was no considerable change in total phenolic and flavonoids of blue-fenugreek dried at different temperatures (Fig. 3).

### Conclusions

- It was concluded that the drying temperature can affect quality parameters of some medicinal and aromatic plants.
- Therefore, the drying temperature must be chosen according to the plant and the intended processing.