

EuroDrying' 2013, Paris, 2-4 October

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Instruction for abstract submission Guidelines for the authors

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Contributions from the entire spectrum of drying and dewatering science and technology will be eligible:

- **characterization and theory of heat & mass transfer**
- **pore scale and multiscale,**
- **modeling and simulation,**
- **product oriented works (foods, biomass, building materials...)**
- **innovative technologies, process intensification,**
- **energy saving, energy with low energy content,**
- **drying and any processes where moisture transfer matters**

As the selection of oral and poster presentation will be done on the basis of the abstract content, **authors are encouraged to add one or two figures**, with a maximum of two pages (first page with title, authors, affiliations, text and references, second page with graphical material).

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Title: Impact of limited drying on *Momordica cochinchinensis Spreng.* aril carotenoids content and antioxidant activity

Authors: Huynh Cang Mai, Vinh Truong, Frédéric Debaste, Benoit Haut

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Impact of limited drying on *Momordica cochinchinensis* Spreng. aril carotenoids content and antioxidant activity

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Keywords

Momordica cochinchinensis Spreng., Drying, Carotenoids, Antioxidant activity

Abstract

Food products based on gac fruit (*Momordica cochinchinensis* Spreng.) arils have a high potential due to the high carotenoids content of this fruit. Drying is a key preparation step for carotenoids extraction from gac fruits in an economically viable process.

In this work, the quality of the drying of the arils of the gac fruit is experimentally investigated. Air drying and vacuum drying are considered. The experiments are conducted with different drying temperatures and until different final moisture contents of the product (Figure 1). The quality of the drying is evaluated in terms of the carotenoid content, the hydrophilic and the lipophilic antioxidant activity and the color of the dried gac arils. The antioxidant activity is evaluated using two different methods (DPPH and FRAP tests). The color of gac aril samples is determined using a Minolta Chroma Meter 137 calibrated with a white standard tile.

The results highlight an optimal temperature between 50°C and 60°C to conserve the color, the carotenoid content and the antioxidant activity (Figure 2). It has also been highlighted that these properties are better preserved in time by conducting the drying to a final moisture content of the product between 15 % and 18 % (d.b.).



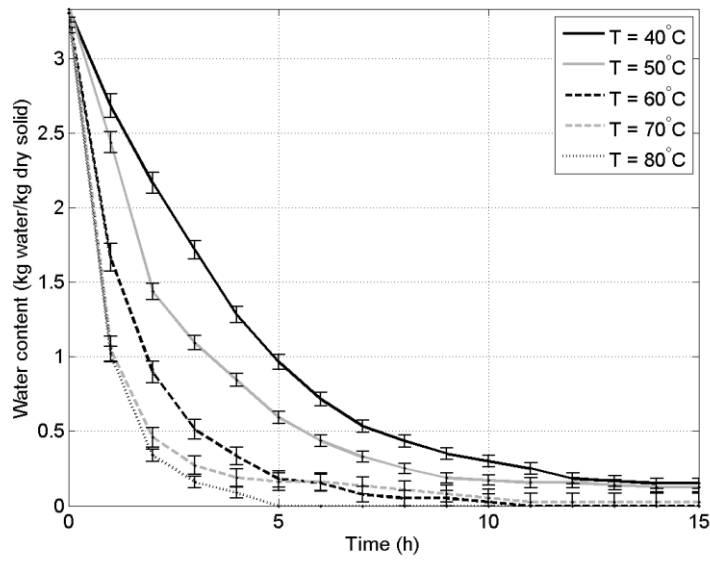


Figure 1: Air drying kinetics at different temperatures.

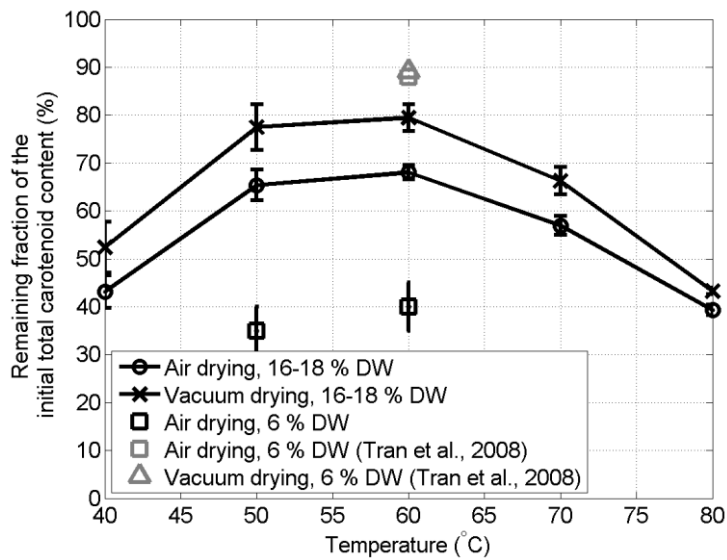


Figure 2: Remaining fraction of the total carotenoid content after drying as a function of the drying temperature, for vacuum and air drying and for different final water content (in % db.).