

**PENGARUH METODE PENGERINGAN OVEN,
VACUUM DRYING, DAN *FOOD DEHYDRATOR*
TERHADAP KARAKTERISTIK BUBUK KULIT
BUAH NAGA (*Hylocereus polyrhizus*)**

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**FAKULTAS TEKNOLOGI PERTANIAN
UNIVERSITAS ANDALAS
PADANG
2026**

Pengaruh Metode Pengeringan Oven, *Vacuum Drying*, dan *Food Dehydrator* terhadap Karakteristik Bubuk Kulit Buah Naga (*Hylocereus polyrhizus*)

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ABSTRAK

Penelitian ini bertujuan untuk membandingkan karakteristik bubuk kulit buah naga yang dihasilkan oleh metode pengeringan oven, *vacuum drying*, dan *food dehydrator* serta menentukan metode pengeringan terbaik. Metode eksperimental digunakan dengan mengevaluasi parameter fisikokimia (rendemen, warna, kelarutan, kadar air, kadar abu, serat kasar, pH, aktivitas air), senyawa bioaktif (vitamin C, betalain, total fenol, aktivitas antioksidan), dan mikrobiologi (angka lempeng total). Hasil penelitian menunjukkan rendemen berkisar antara 3,12-4,94%, dengan nilai tertinggi pada *vacuum drying*. Nilai kecerahan (L) tertinggi pada *vacuum drying* (43,24), sedangkan tingkat kemerahan (a) tertinggi pada *food dehydrator* (31,16). Kelarutan, kadar abu, dan serat kasar tertinggi pada pengeringan *food dehydrator* (54,54%, 12,56%, dan 19,01%). Kadar air terendah pada *food dehydrator* (7,78%). Nilai pH berkisar antara 5,42-5,90 dan aktivitas air berkisar antara 0,566-0,594. Pada senyawa bioaktif, kadar vitamin C tertinggi pada pengeringan oven (0,43 mg/100 g), kandungan betalain dan total fenol tertinggi pada *food dehydrator* (27,90 mg/100 g dan 4,41 mg GAE/g). Aktivitas antioksidan (IC₅₀) terendah pada *vacuum drying* (14.320,57 ppm). Nilai angka lempeng total terendah pada *vacuum drying* ($3,4 \times 10^4$ CFU/mL). Secara keseluruhan, metode pengeringan *food dehydrator* pada suhu 55°C merupakan metode terbaik yang menghasilkan karakteristik fisikokimia dan senyawa bioaktif bubuk kulit buah naga paling optimal.

Kata kunci: bubuk, kulit buah naga, *food dehydrator*, oven, *vacuum drying*

The Effect of Oven Drying, Vacuum Drying, and Food Dehydrator Methods on the Characteristics of Dragon Fruit Peel Powder (*Hylocereus polyrhizus*)

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ABSTRACT

This study aims to compare the characteristics of dragon fruit peel powder produced by oven drying, vacuum drying, and food dehydrator methods, as well as to determine the best drying method. An experimental method was used by evaluating physicochemical parameters (yield, color, solubility, moisture content, ash content, crude fiber, pH, water activity), bioactive compounds (vitamin C, betalains, total phenols, antioxidant activity), and microbiology (total plate count). The results showed that yield ranged from 3,12% to 4,94%, with the highest value in vacuum drying. The highest brightness (L) was in vacuum drying (43,24), while the highest redness (a) was in the food dehydrator (31,16). Solubility, ash content, and crude fiber were highest in food dehydrator drying (54,54%, 12,56%, and 19,01%, respectively). The lowest moisture content was in the food dehydrator (7,78%). The pH ranged from 5,42 to 5,90, and the water activity ranged from 0,566 to 0,594. For bioactive compounds, the highest vitamin C content was in oven drying (0,43 mg/100 g), the highest contents of betalain and total phenols were found in the food dehydrator method (27,90 mg/100 g and 4,41 mg GAE/g, respectively). The lowest antioxidant activity (IC₅₀) was observed in vacuum drying (14.320,57 ppm). The lowest total plate count was also observed in vacuum drying ($3,4 \times 10^4$ CFU/mL). Overall, the food dehydrator drying method at 55°C is the best method, producing the most optimal physicochemical characteristics and bioactive compounds in dragon fruit peel powder.

Keywords: dragon fruit peel, food dehydrator, oven, powder, vacuum drying