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## Nutritional, physicochemical properties and shelf life of crackers based on cladode flour of *Opuntia ficus indica*

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Sustainable food production is the need of the hour. These foods can help to prosper the local economy and improve the health of consumers. Indeed, consumers are requiring new foods rich in nutrients, with acceptable organoleptic quality. For this, current research has used alternative sources of plant origin rich in bioactive compounds, in the development of new food products (biscuits). Cladodes of *Opuntia ficus indica* one of these plant origins which contain several bioactive compounds that have proven their importance in the prevention and cure of many chronic diseases (cancer, hypertension, obesity, cardiovascular disease), this is the reason why the cladode flour is currently used in pharmacological and food industry. Our study shows that crackers based on cladode flour of *Opuntia ficus indica* present an interesting source of major and secondary nutrients and trace elements essential to the growth and development of the human body since the levels of certain elements far beyond the daily needs recommended by WHO. Functional properties were studied, and results showed that the flour obtained from cladodes has a great technological potentiality as water absorption capacity ( $4.87 \pm 0.09\%$ ), swelling capacity ( $30.16 \pm 1.89\%$ ) and bulk density ( $0.95 \pm 0.009$  g/ml) compared to the whole wheat flour. All results for the composite flour showed that bulk density, water absorption capacity, swelling capacity and solubility index increased according to increased levels of cladode flour enhanced, whereas gelatinization temperature and oil absorption capacity decreased; in on the other hand the least gelation concentration has to remain constant for all composite flour. The Proximate composition of crackers shows a variation according to the content of cladode flour (Crude fat, ash content, pH, Titratable acidity, °Brix and Moisture). The water activity of crackers is similar whatever the content of cladode flour and it is in the standard of the baked products ( $A_w=0.4$  to  $0.6$ ). This work demonstrates the nutritional potential benefit attributed to this species, allowing the possibilities of using it as an alternative power source for both humans and animals for its remarkable therapeutic effect with no secondary effect.

### Biography

Nabil B is currently a PhD student belonging to the research team of innovation and sustainable development expertise in Green Chemistry. She is currently studying at Semlalia Science Faculty, University Cadi Ayyad Marrakech under the supervision of Professor Mustafa Mahrouz. She pursued Master's degree in Food Technology from the University Cadi Ayyad in 2014. She is currently a participant in a scholarly project: Priority Research program (PPR-B-Mahrouz-FS-UCA- Marrakesh).

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