

Essai de pastification d'une formule sans gluten à base de riz et pois protéagineux.

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Les objectifs de notre travail sont : 1) la fabrication d'une formule sans gluten en vue de pastification à base de riz et de pois protéagineux, et 2) l'évaluation de sa qualité culinaire. La pâte sans gluten est fabriquée avec un mélange de 2/3 de semoule de riz et de 1/3 de semoule de pois protéagineux. La pâte témoin est fabriquée avec une semoule de blé dur. Après la fabrication des deux types de pâtes nous avons apprécié la qualité culinaire des pâtes obtenues (temps de cuisson, gonflement et pertes à la cuisson). Les résultats obtenus montrent que la pâte sans gluten a un temps de cuisson (8.75 ± 0.35 minutes) plus élevé que la pâte témoin (7.75 ± 0.35 minutes). Le gonflement de la pâte sans gluten ($120 \pm 10.81\%$) est inférieur à celui de la pâte témoin ($271.63 \pm 11.16\%$). Concernant les pertes à la cuisson, elles sont plus élevées pour la pâte sans gluten ($13.83 \pm 1.36\%$) par rapport à la pâte témoin ($6.03 \pm 0.581\%$). L'amélioration de la qualité culinaire de la pâte sans gluten doit être recherchée pour rendre sa qualité plus proche à celle de la pâte témoin.

Mots-clefs : riz, pois protéagineux, sans gluten.

Characterization of thermostable alkaline protease produced by *Caldicoprobacter guelmensis*.

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In recent years a number of studies have been conducted to characterize alkaline thermostable protease from different microorganisms. These proteases are advantageous in some applications because higher processing temperatures can be employed, with the consequences of faster reaction rates, increase in the solubility of nongaseous reactants and products, and reduced incidence of microbial contamination from mesophilic organisms. Thus it is desirable to search for new proteases with novel properties from as many different sources as possible.

In the present study we report the partial purification and characterization of protease produced by a thermophilic anaerobic *Caldicoprobacter guelmensis* sp. nov. strain D2C22^T.

The crude protease from this strain was active in a broad temperature range between 30°C and 90°C, with maximal activity at 60°C and showed characteristic pH optima at pH 10.0. Enzymes activities were totally inhibited by phenylmethyl sulphonyl fluoride (PMSF), suggested that the proteases from *Caldicoprobacter guelmensis* belong to the family of serine protease. Calcium, magnesium, cuivre, manganese increased protease activity. On the other hand, iron and zinc variably decreased the residual activity. But Ni²⁺ and Hg²⁺ drastically inhibited the enzyme activity. The crude extract is extremely stable and compatible with the commercial liquid and solid detergents. SDS PAGE and zymogram staining of the crude extract showed the presence of one band with apparent molecular mass of about 55 KDa.

The results of partial characterization of the enzyme indicate that it is an alkaline, thermostable and detergent compatible. This suggests that it will find application in detergent industry.

Key-words: alkaline protease, *Caldicoprobacter guelmensis*, hot spring Algeria, partial characterization, detergent industry.