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Colorimetric evaluation of quinoa flour fermented by *Monascus purpureus* enriched with monosodium glutamate and sodium chloride

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INTRODUCTION

Natural pigment sources from microorganisms are good alternatives because their manipulation is more controllable and they tend to be produced on a large scale [1]. *Monascus* is a widely used fungus because it produces red pigments that serve to colour foods and improve their appearance and have received much attention in solid fermentation studies [2,3]. Nitrogen sources such as monosodium glutamate and sodium chloride produce significant changes in red pigment production and growth of *Monascus* [6]. Therefore, it was considered important in this research to evaluate the colour of quinoa flour fermented by *M. purpureus* supplemented with monosodium glutamate and sodium chloride.

METHODS

Preparation of *M. purpureus* strain CECT 2955 in a suspension of 1.0 x10^6spores/ml.

→

Fermentation of quinoa kernels by *M. purpureus* at 30°C for 0, 2, 4, 6, 6, 8, 8, 10, 12 and 14 days.

↓

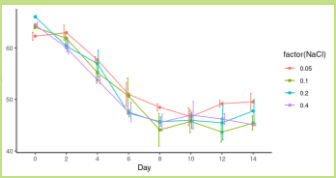
Drying and milling to obtain red pigmented quinoa flour.

←

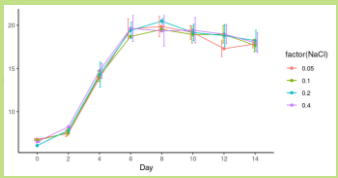
Colourimetric analysis in CIELAB colour space (L*, a*, b*) of the red flours.

RESULTS

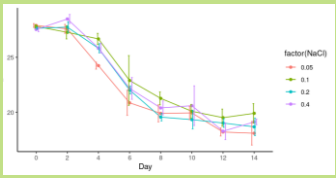
L*



a*



b*



CONCLUSION

This research showed that the pigmented flour produced by solid-state fermentation of quinoa by *M. purpureus* supplemented with monosodium glutamate and sodium chloride showed variation in the days of fermentation with respect to the red colour, with the eighth day being the appropriate time to stop fermentation, obtaining the values of L* (48.48 ± 0.713), a* (19.85 ± 1.174), b* (19.90 ± 0.775) and C:N (11.31 ± 0.258); resulting in a product with a good visual sensory attribute that can be used to develop new naturally pigmented products with possible functional characteristics.

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