

STUDY OF THE QUALITY OF A DRY GLUTEN-FREE PASTA FORMULATED WITH PREGELATINIZED FLOURS

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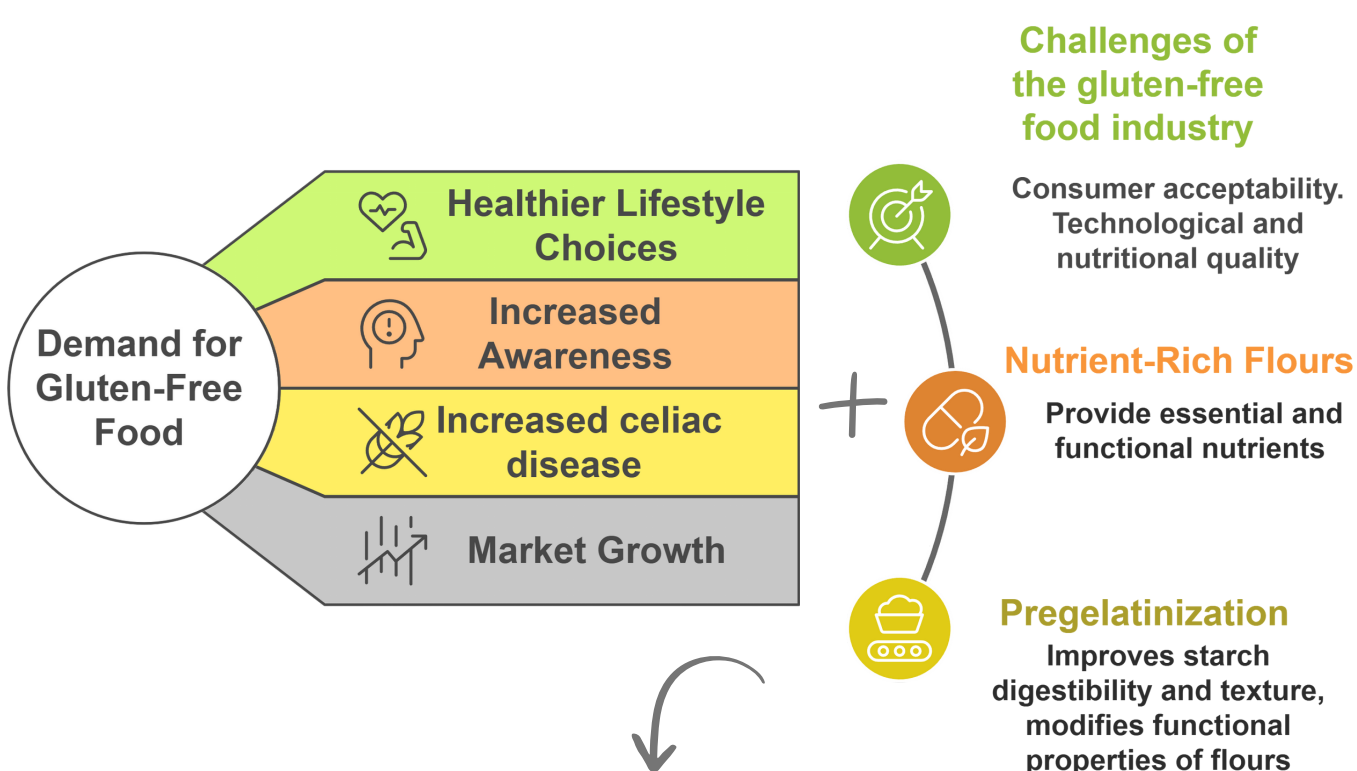
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INTRODUCTION & AIM



Aim of this study

Evaluate the effect of incorporating pregelatinized rice flour (PRF) and yellow pea flour (PYPF) into a gluten-free pasta base formulation using a simplex-lattice mixture design

RESULT & DISCUSSION

Analysis of variance and regression models showed that **Hardness** and **Optimal Cooking Time** fit significantly ($p < 0.05$) to a quadratic model ($R^2 = 87.29$; $R^2 = 74.44$, respectively), indicating a relevant influence of the pregelatinized flours.

No significant effects were found for acidity, water absorption, and solids loss

Optimal formulation

40% Pregelatinized rice flour
32% Native buckwheat flour
18% Native yellow pea flour
10% Chia expeller



Table 1. Quality parameters

Optimal cooking time (min)	10.22 ± 0.42
Hardness (N)	86.53 ± 10.61
Water absorption (%)	81.91 ± 5.12
Solid loss (%)	7.71 ± 0.32
Acidity (%)	0.05 ± 0.01

METHOD

Replacing native rice and yellow pea flours with pregelatinized flours in a gluten-free pasta base formula (40% native rice, 32% buckwheat, 18% yellow pea and 10% chia flours)

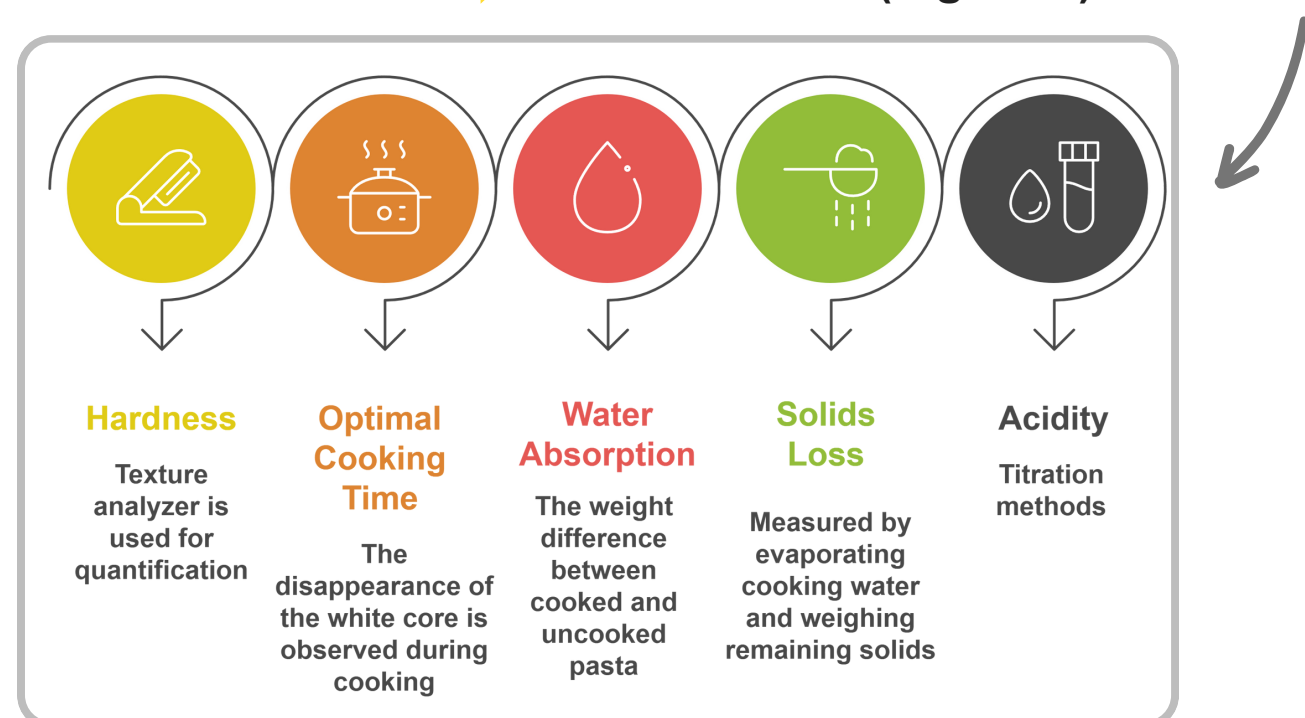
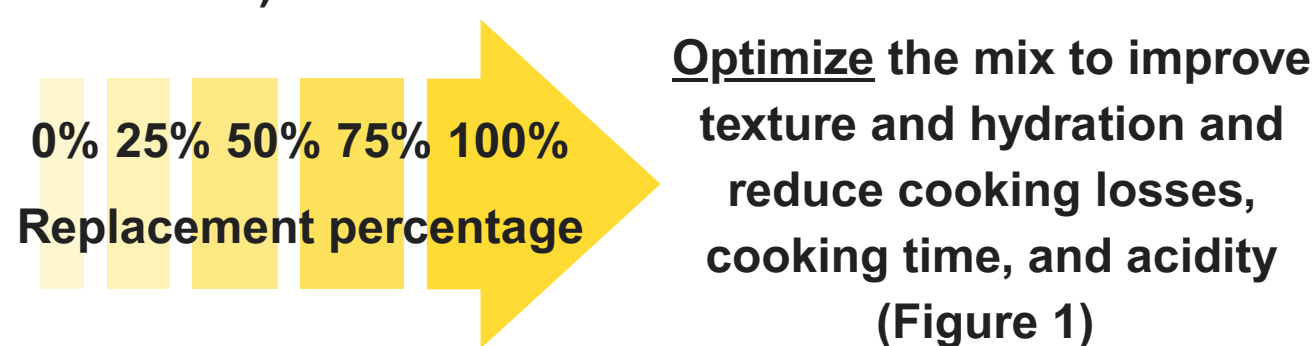


Figure 1: Pasta quality determinations

CONCLUSION

The addition of pregelatinized flours to the mix tends to reduce optimal cooking time and increase pasta hardness

Hardness increases with increasing proportion of pregelatinized rice flour (PRF), achieving its greatest effect at 100% replacement level

These results demonstrate the importance of studying the appropriate combination of ingredients to optimize the properties that determine the final quality of a food product

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