

# Physicochemical characterization of a traditional Portuguese bread (*Pão Transmontano*) towards its future certification – preliminary results

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## I. INTRODUCTION AND OBJECTIVES

Trás-os-Montes, Northeast of Portugal, is a region rich in traditions and typical products with different flavors, being bread one of the most appreciated products. Its importance derives not only from the direct consumption but also of its inclusion as an ingredient in different products of which it stand out the fermented meat sausages, so famous in the region.

This preliminary study aimed to characterize physicochemically two breads of the Northeastern region of Portugal with the aim to identify the similarities and differentiating elements with the objective of its future certification. In Figure 1 it is represented the exterior and interior of one *Pão Transmontano*.

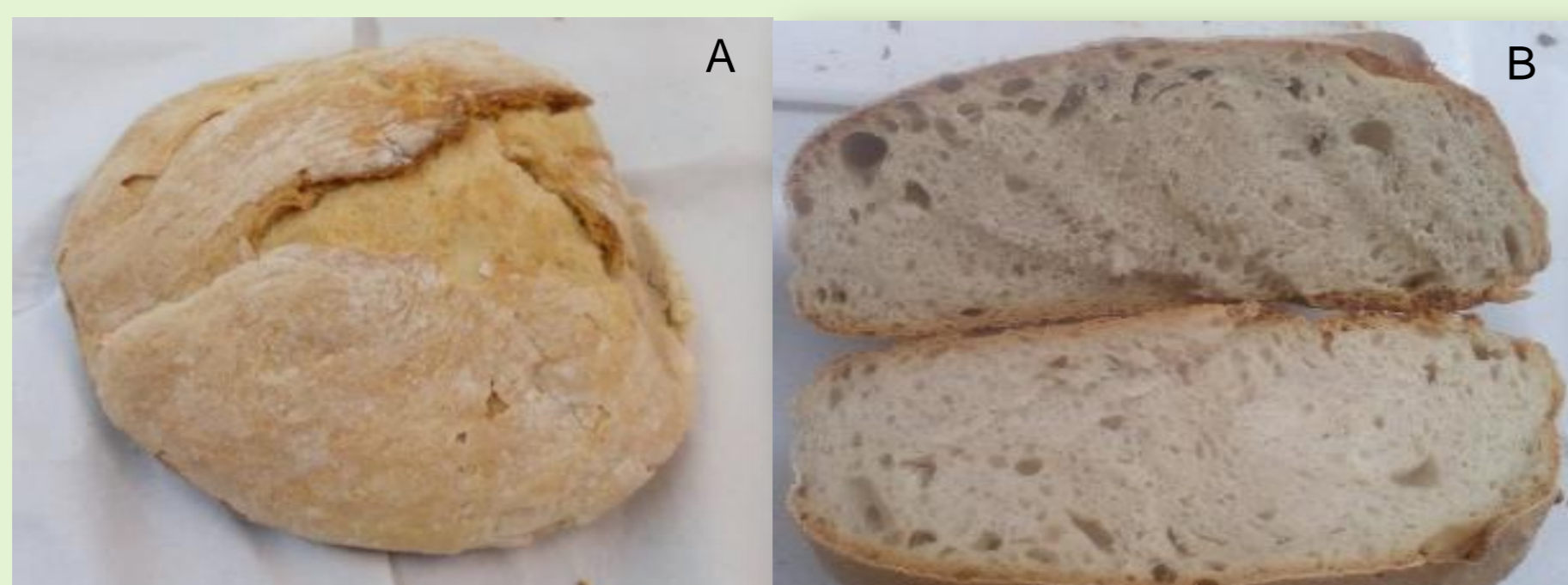


Figure 1. *Pão Transmontano*: A – Exterior; B – Interior.

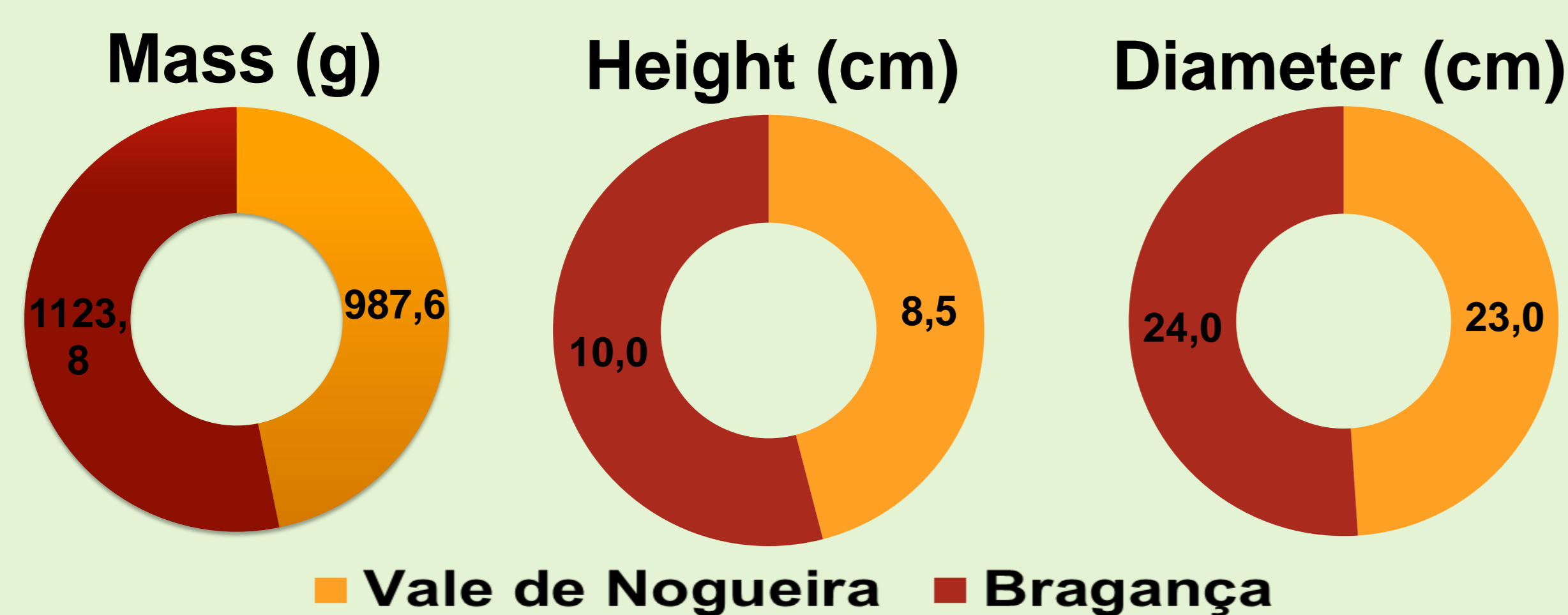
## II. MATERIAL AND METHODS

The samples analyzed in this study were two wheat breads from Vale de Nogueira and Bragança (Northeast of Portugal). The two breads were purchased in bakeries that sell to the public. Regarding the physical characteristics, the dimensions and color of the crumb and crust were determined. Concerning chemical composition, the water activity, pH, moisture, ash, protein, fat, salt and total dietary fiber contents were evaluated, following the AOAC methods.

All determinations were made in triplicate. The results are presented on dry weight, except the moisture content.

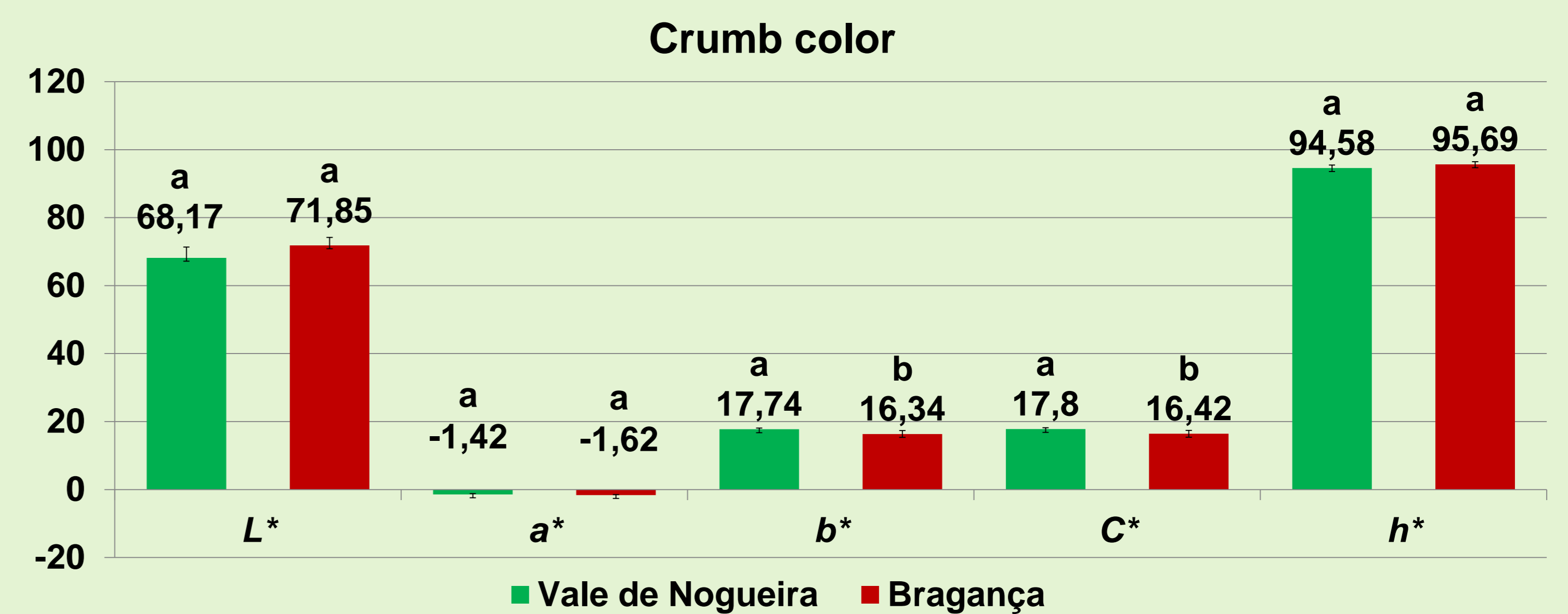
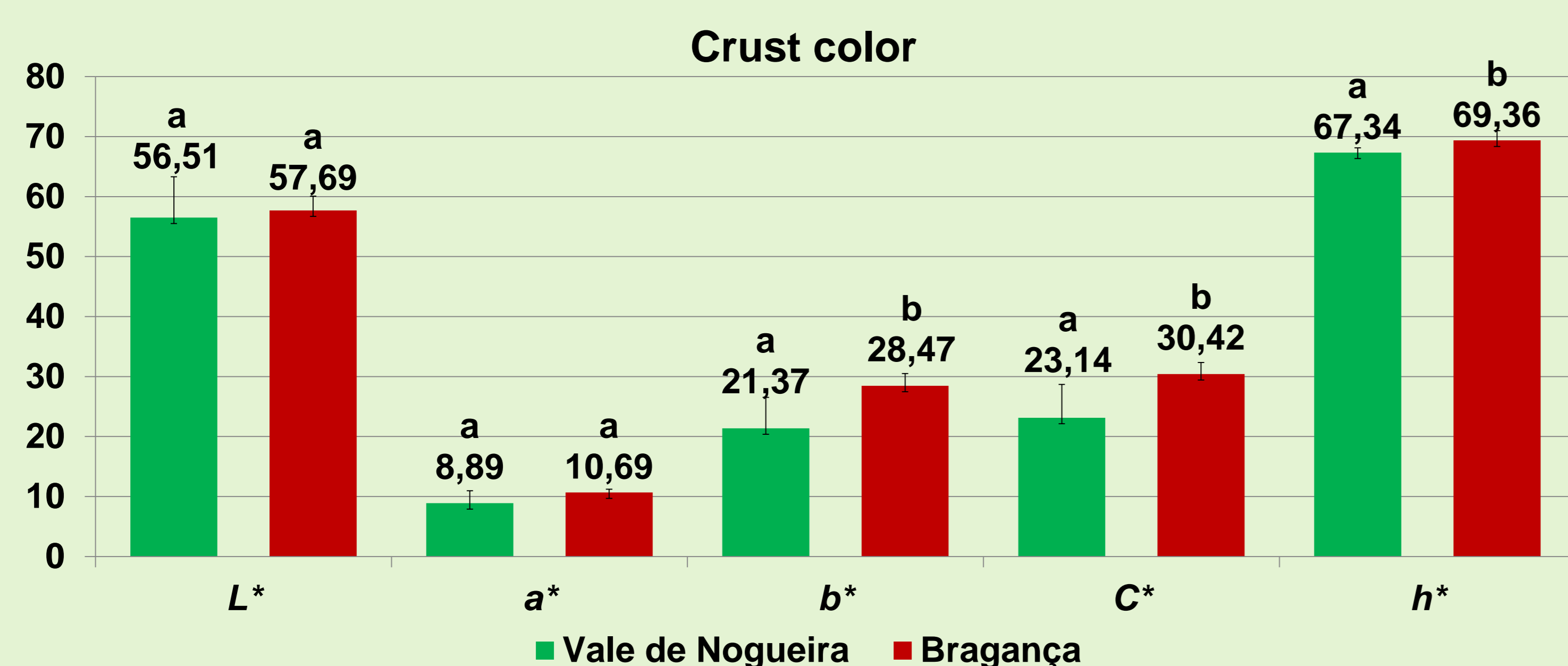
## III. RESULTS AND DISCUSSION

### III. 1. Dimensions



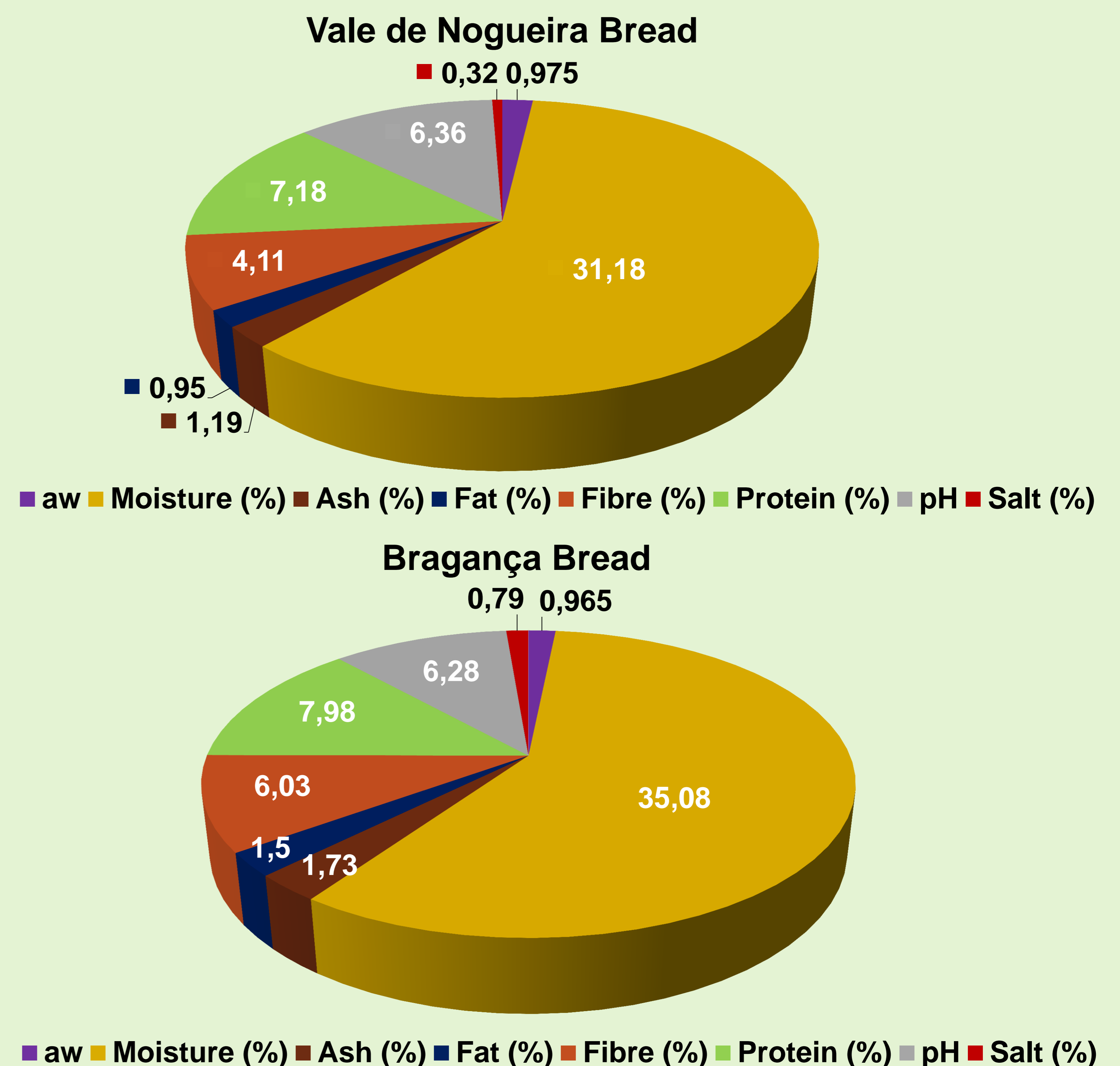
Both breads had similar shape and weight.

### III. 2. Color



The color of the crust and crumb of both breads differed mainly in the  $b^*$  and  $C^*$  parameters, suggesting slight visual differences.

### III. 3. Proximate composition



In general terms, both breads were quite similar. Nevertheless, significant differences were observed at the pH, ash, fibre, protein and salt contents. The salt content of the two breads were within the legal range.

## IV. Conclusion

The two breads analysed in the present work differed slightly in the colour of the crust and crumb. In terms of chemical composition some significant differences were observed in some nutritional parameters. Nevertheless, for the future certification of *Pão Transmontano*, it will be necessary to perform more determinations on a higher number of samples from all localities belonging to Trás-os-Montes region, as well as to do a survey in order to evaluate the manufacturing process, so that to establish similarities and to identify specific characteristics of this kind of bread.

## ACKNOWLEDGEMENTS

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