

# Detection of gluten content in the naturally gluten free & “gluten free” labeled commercially available food products in Italy



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## Introduction

- Gluten free diet is the only accepted treatment so far for Celiac disease (CD) & other gluten related disorders
- Continuous introduction of gluten in CD patients can trigger an immunological reaction
- Codex Alimentarius Standard defined the criteria of normal threshold of gluten

Very low gluten products (20-100 mg/kg)

Gluten free products (<20 mg/kg)

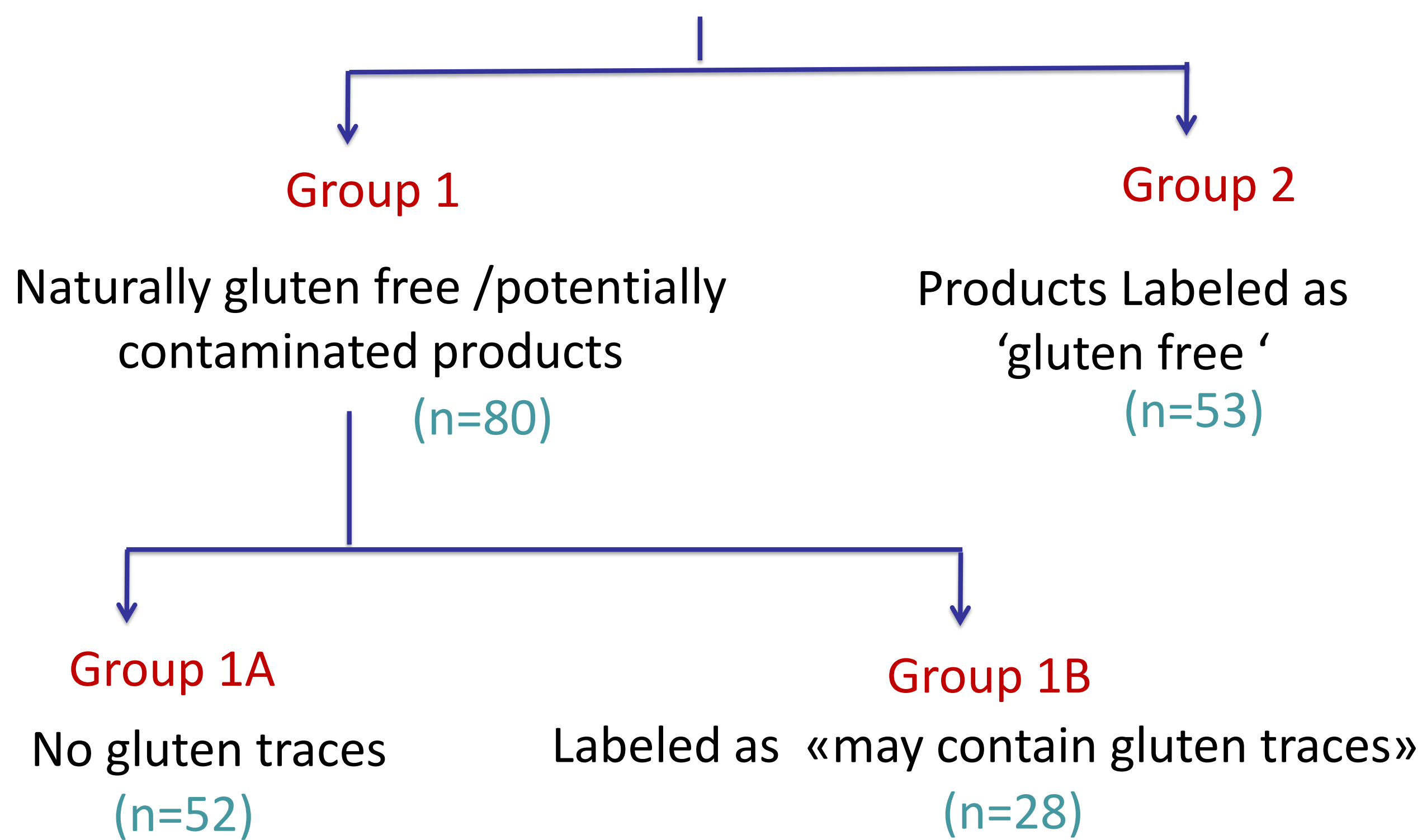
- Products labeled as “Gluten free” are under suspicion that they are actually gluten free in North American, Canadian & European supermarkets\*

## Aim of the study

To investigate the level of gluten contamination in naturally gluten free products & products labeled as “gluten free” in Italy

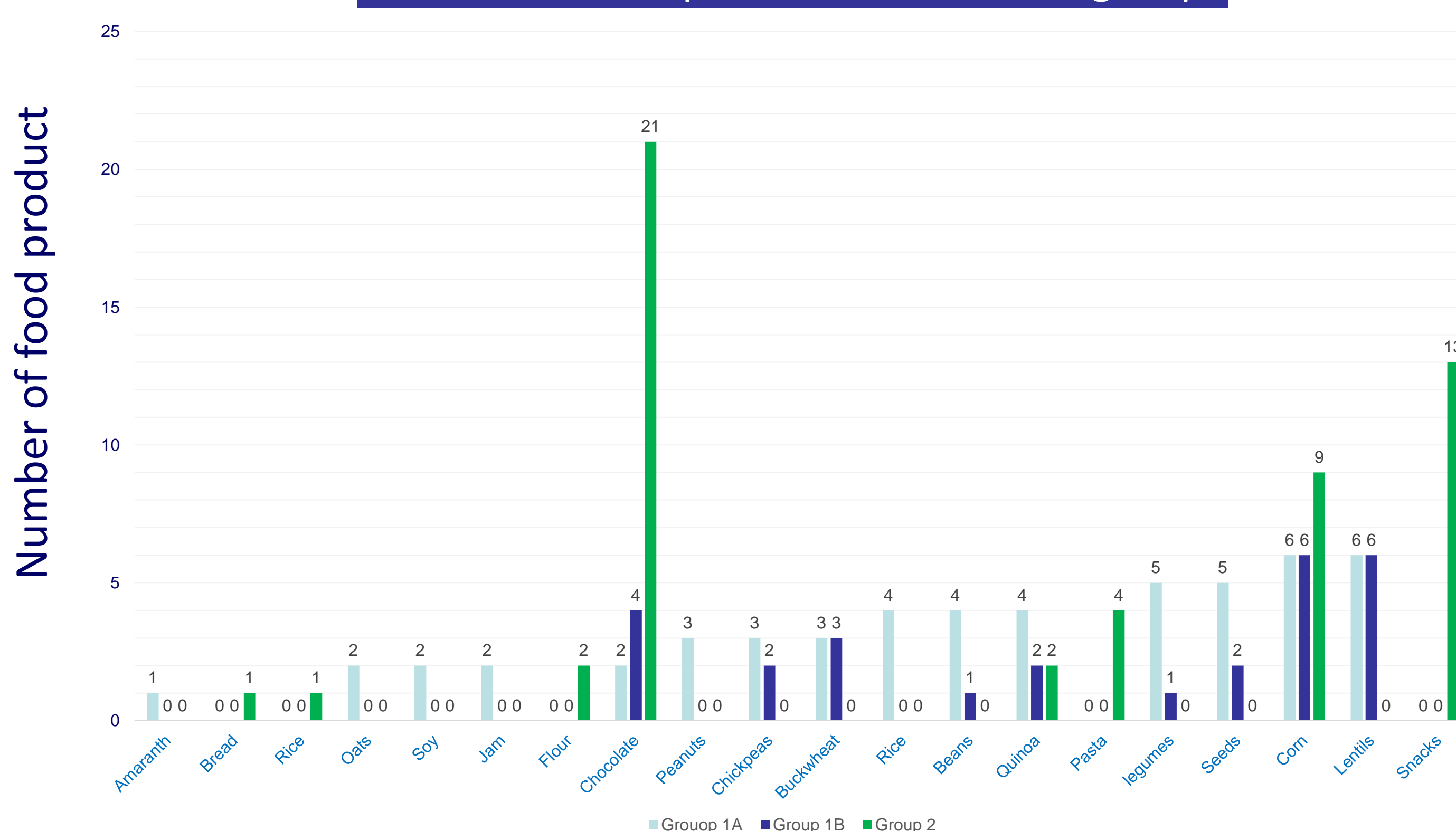
## Collection of Samples

Commercially available food products (n=133)



## Methodology

Number of food products in different groups



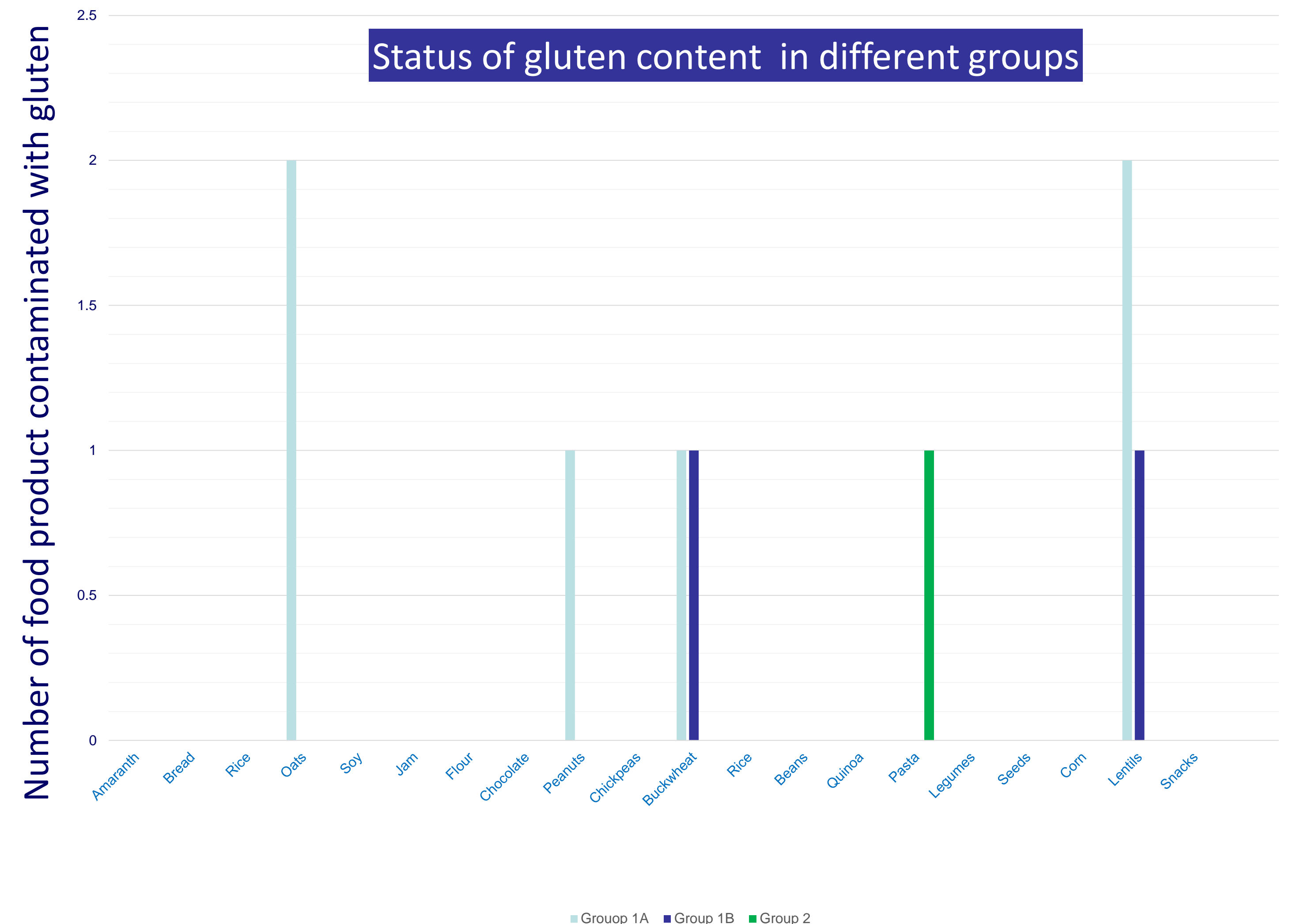
## Methodology

- Gluten content is being determined by commercially available ELISA kits coated with R5 monoclonal antibody
- R5 ab is especially raised against rye and detects prolamins gliadin (wheat), secalin (rye) & Hordein (barley)
- ELISA kits are being procured from Ridascreen (Germany), certified kit and official method of Codex Alimentarius
- Manufacturers guidelines is being followed strictly

The authors declare no conflict of interest

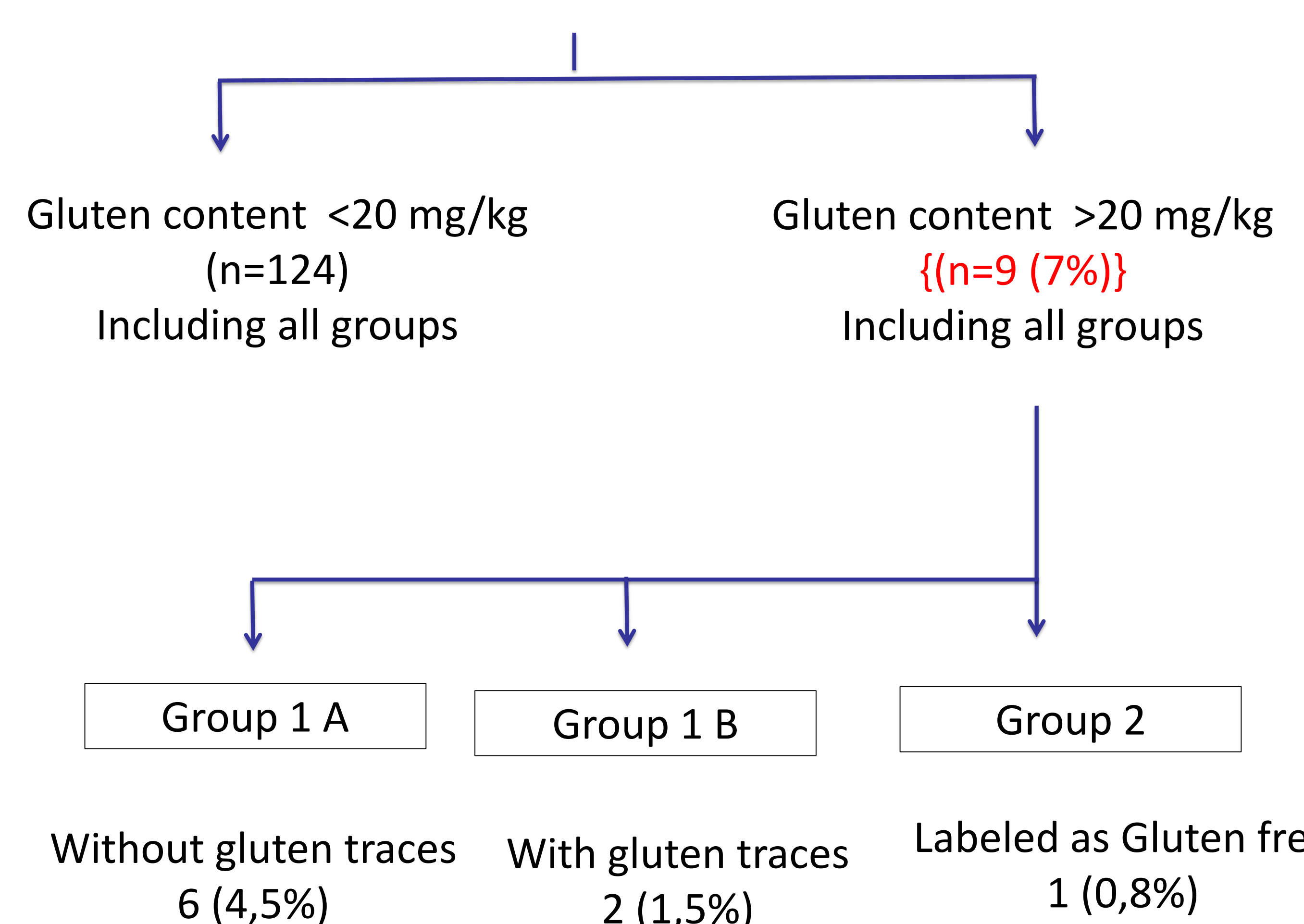
## Results

Status of gluten content in different groups



## Summary of result

Total sample collected (n=133)  
Including all groups



## Conclusions

- Most of the products labeled as “gluten free” are detected as gluten free
- Many naturally gluten free products remain safe from gluten contamination
- However complete absence of gluten in naturally gluten free products are not achieved by some manufacturers
- Ongoing analysis will be performed on a larger sample of additional products

## References

- \* Lee et al, JFP, 2014
- \* Valdés et al Eur. JGH, 2003
- \* Gélinas et al, Int. J Food sci Tech, 2008

Naturally gluten free lentiles are at risk of gluten contamination