



# Analysis of alkaloids in fermented and nonfermented blue lupin (*L. angustifolius*) products

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FOOD DEVELOPMENT

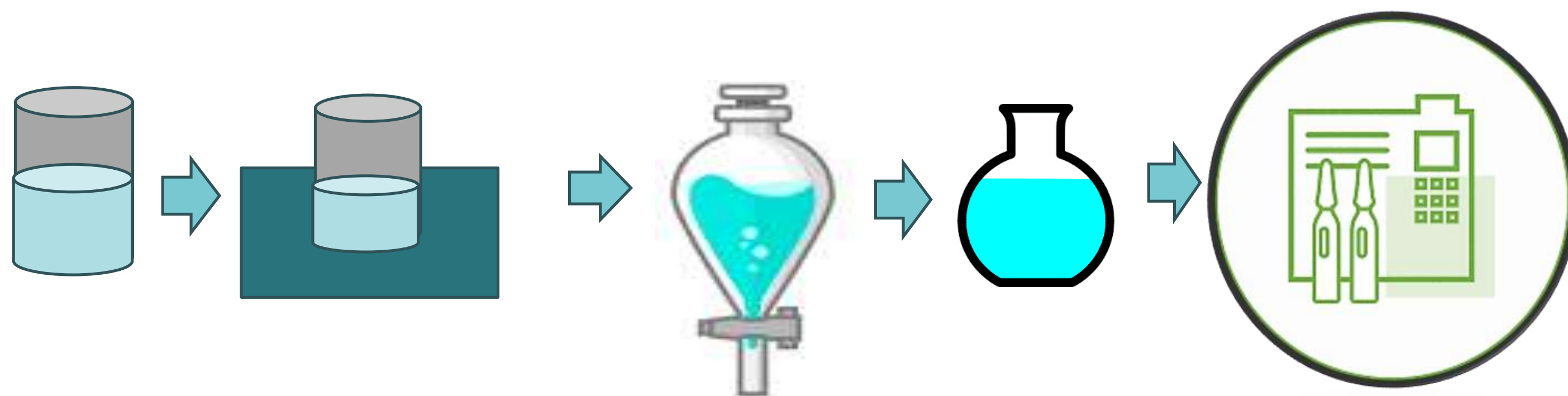


## 01 Introduction

*L. angustifolius*, also known as blue lupin or sweet lupin is a member of the legume family Fabaceae. Lupins contain high amounts of protein and also alkaloids. Sweet lupins contain antinutrients termed quinolizidine alkaloids which cause toxic effects on oral consumption. The analysis of alkaloids in blue lupin products has become a necessity since quinolizidine alkaloid content in blue lupin products needs to be quantified before marketing as a final product.

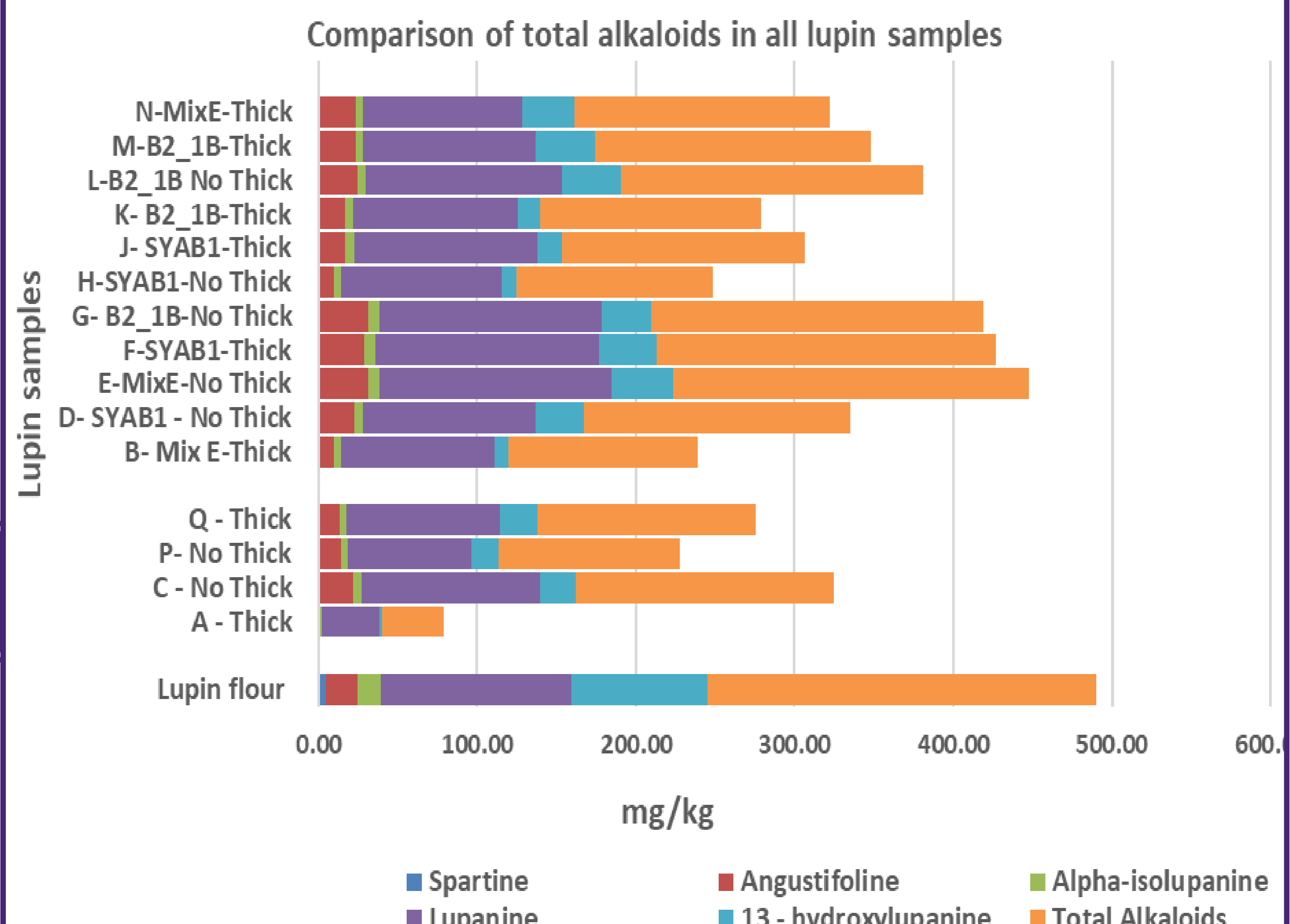
## 02 Materials and Methods

Commercial blue lupin flour, 4 nonfermented and 11 fermented, (*L. angustifolius*) lupin milk samples. Three different lactic acid bacteria (LAB) starters and thickening agent (barley starch, 4% w/v) were used.

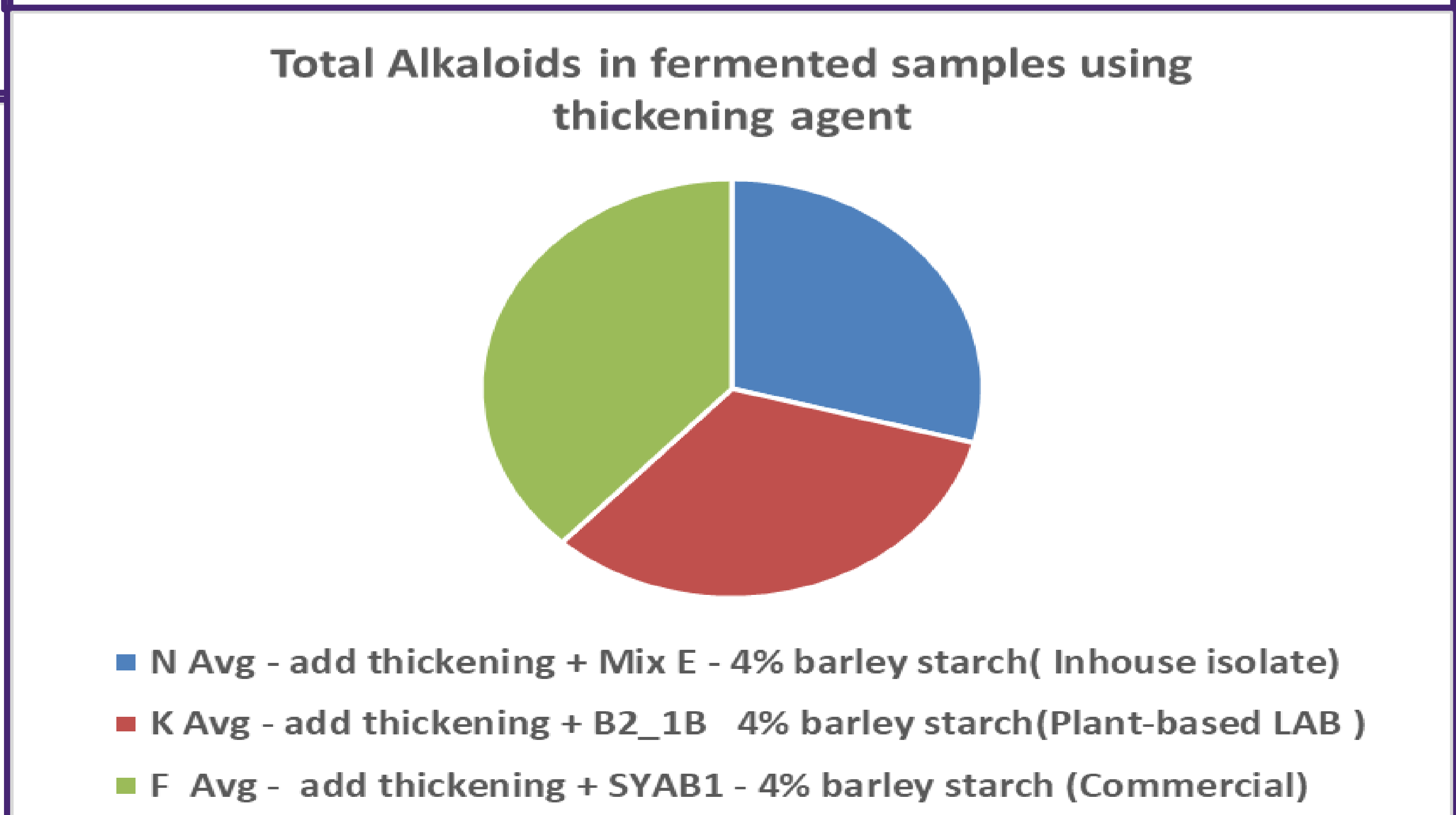
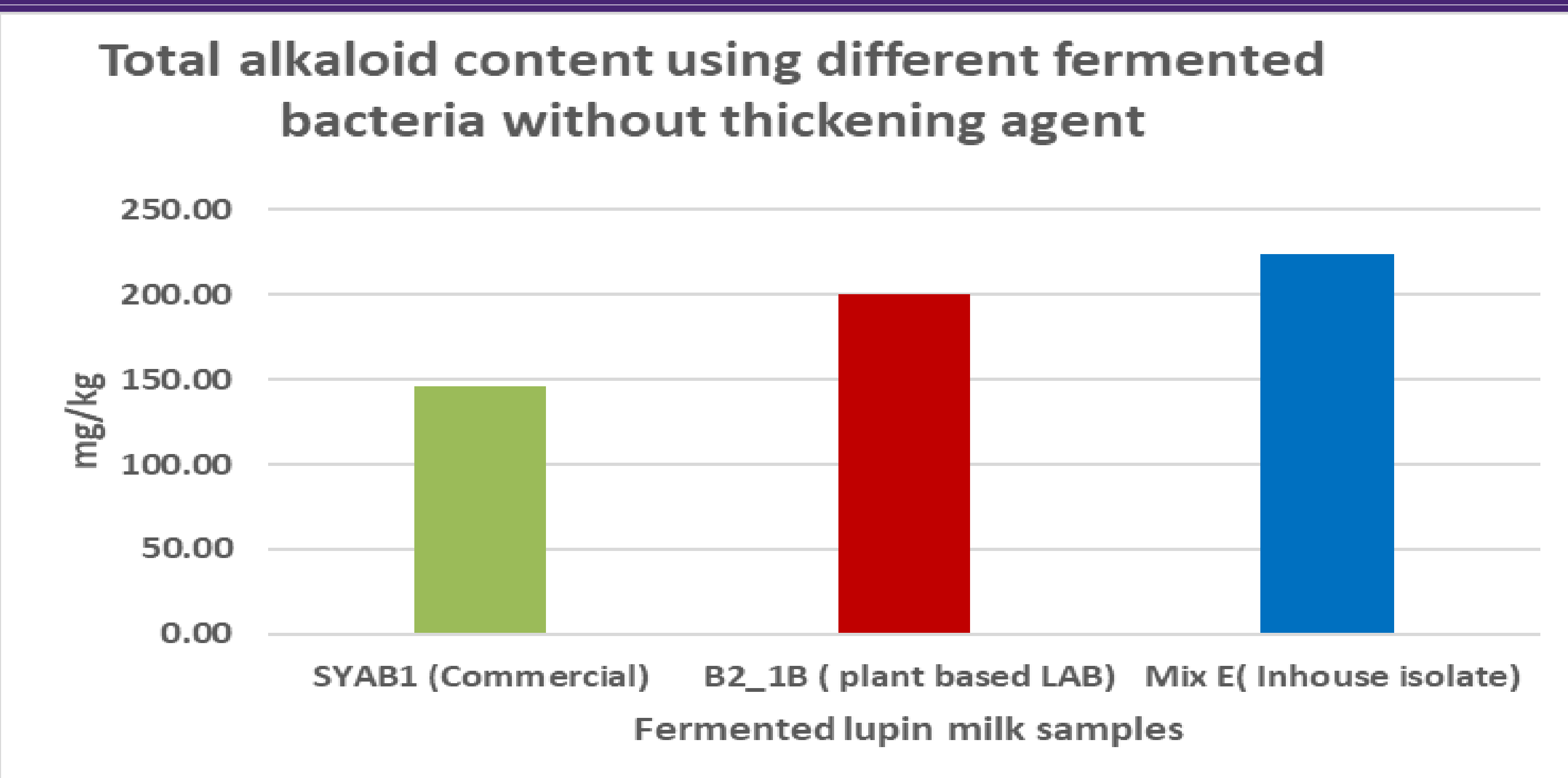


Extraction solvent: Dichloromethane; Other reagent: Trichloroacetic acid

## 03 Results and Discussion



The total alkaloid content in nonfermented lupin milk samples was observed to be lower than in fermented lupin milk samples commercial blue lupin flour and some fermented lupin milk samples contained alkaloids more than nonfermented lupin milk samples. Based on this study it could be inferred that total alkaloid content was observed to be much lower in nonfermented lupin milk samples containing a thickening agent as well as those fermented with LAB in-house isolate (MixE).



## 04 Conclusion

Based on this study it could be inferred that total alkaloid content was observed to be much lower in nonfermented lupin milk samples containing a thickening agent as well as those fermented with LAB in-house isolate (MixE). This study also emphasizes the importance and need to use optimal sample pretreatment and analysis methods to reliably study the alkaloid content in blue lupin ingredients and products during product development.

### References

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