

Beyond visual classification: The nutritional value of frost-damaged lentil flour in baked and extruded products

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Grain Quality & Seed Phenomics

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A Matter of Classification

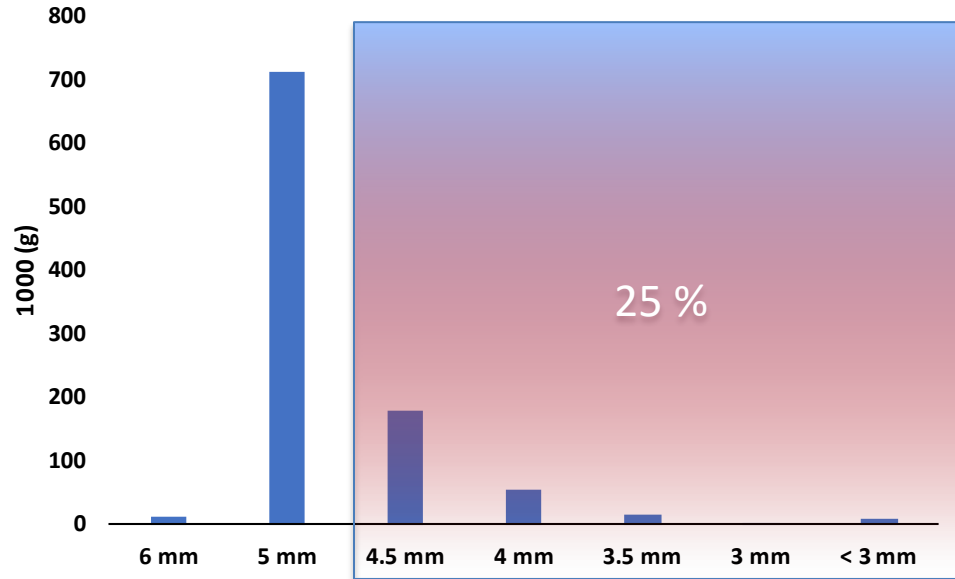
Grade 1



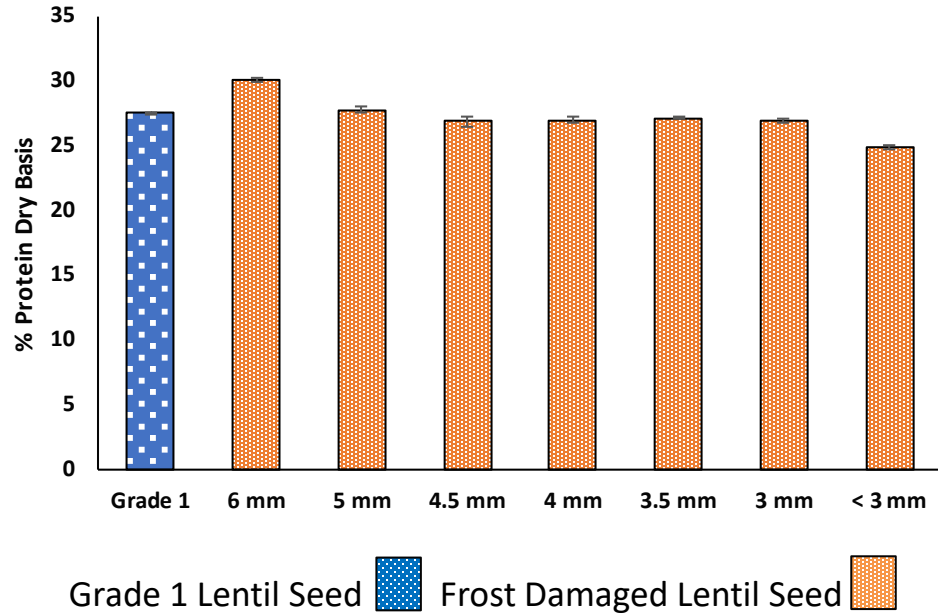
Rejects



Frost-damaged Lentil Seed Size Distribution



Protein Grade 1 vs Frost



Applications as a Flour Additive


- Food additive
- Bread
- Biscuits
- Extruded foods

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RESEARCH ARTICLE



Blending studies using wheat and lentil cotyledon flour—Effects on rheology and bread quality


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RESEARCH ARTICLE

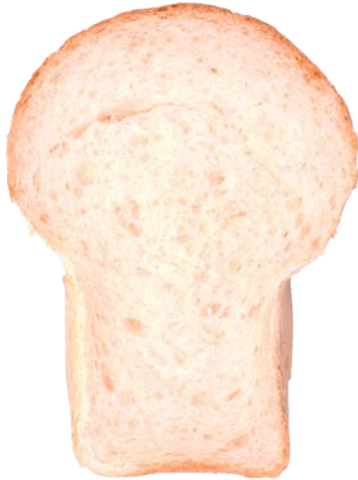
AACCI—Cereals & Grains Association

Water-soluble carbohydrates during fermentation and baking of composite wheat and lentil flour—Implications for enhanced functionality

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Lentil-Wheat Bread



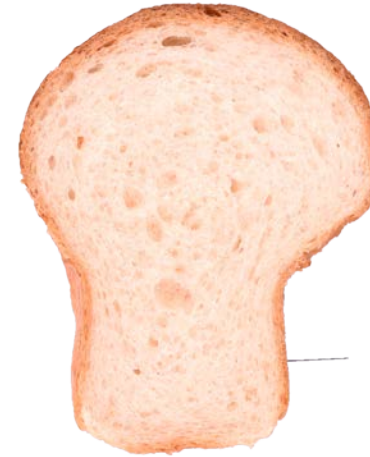
100% Wheat

Protein	13.8g
Ash	.538g
Volume	6.53 cm ³ /g



5% Lentil

Protein	15.7g
Ash	.800g
Volume	4.44 cm ³ /g

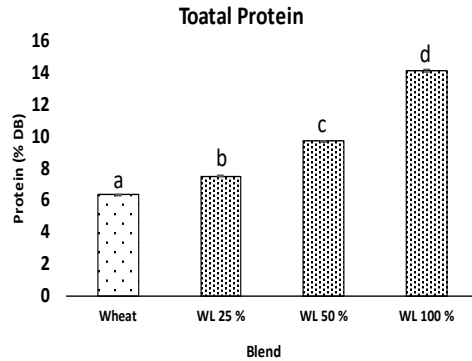


15% Lentil + Gluten

Protein	20.23
Ash	.777g
Volume	6.59 cm ³ /g



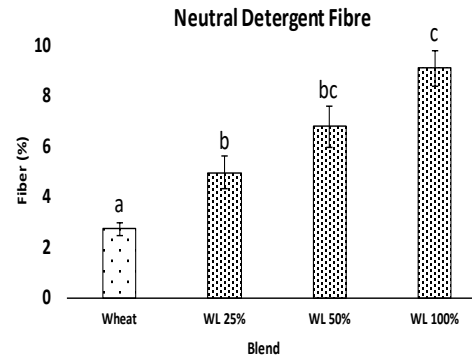
Lentil-Wheat Biscuits



**Wheat
100%**



**Lentil
25%**



**Lentil
50%**



**Lentil
100%**



Wheat-Lentil Pretzels

Premium Quality Lentil



Lentil
10%



Lentil
20%



Lentil
40%



Lentil
100%



Wheat
100%

Frosted Lentil



Lentil
10%



Lentil
20%



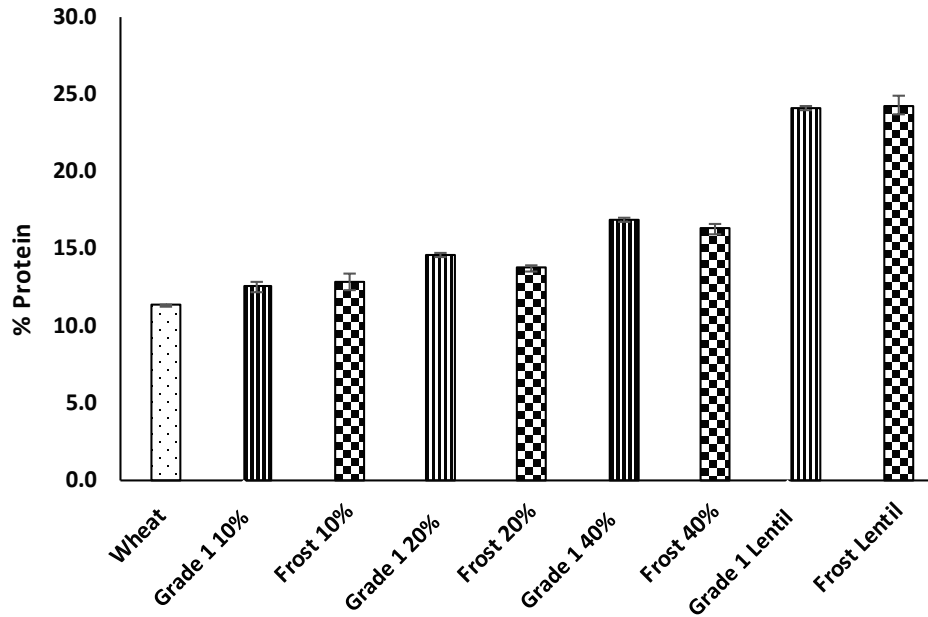
Lentil
40%



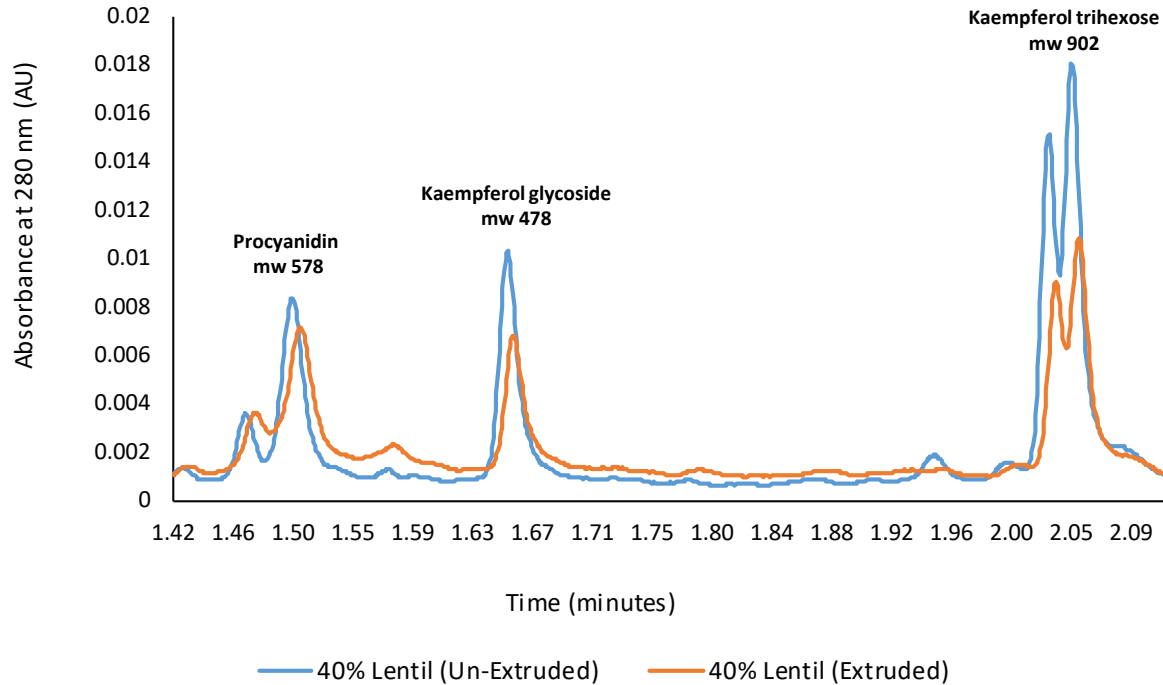
Lentil
100%



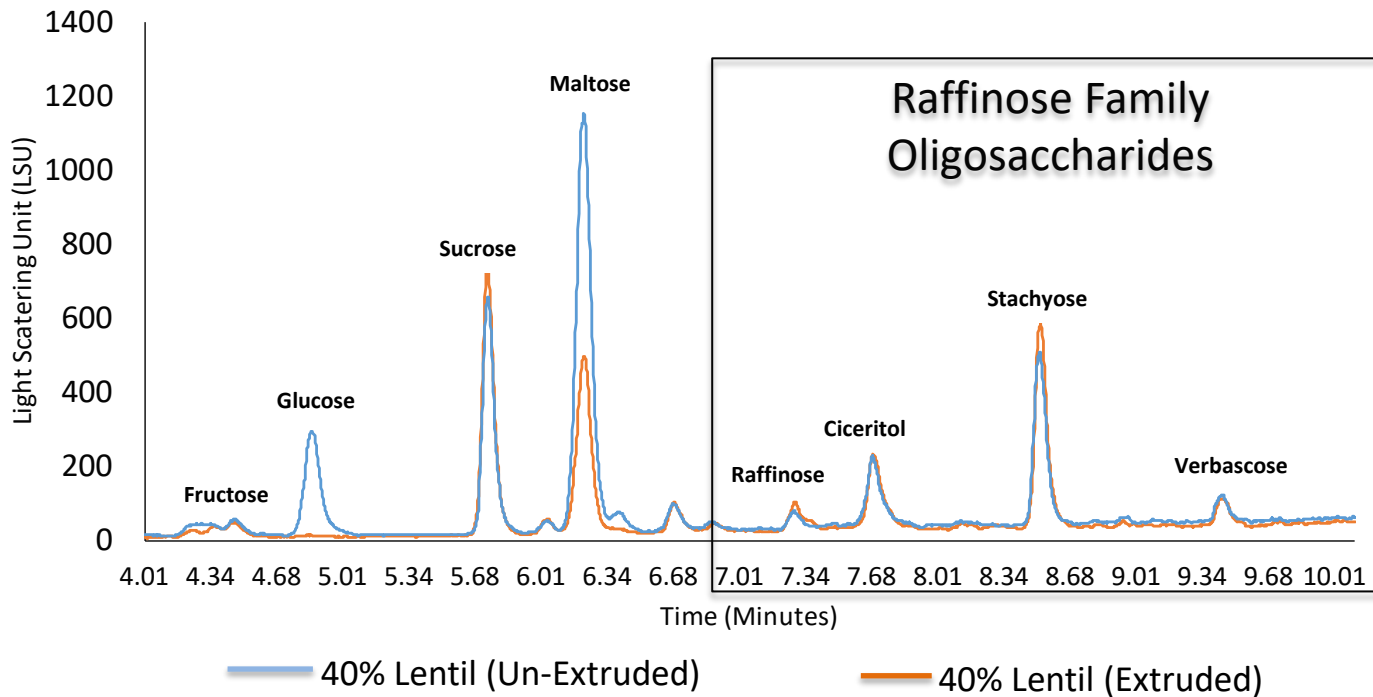
Protein of Extruded Pretzels



Phenolic Acid Profile of Extruded Lentil



Carbohydrates of Extruded Lentil



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The Functional Grains
Centre



... where quality is measured.

