

CHARACTERIZATION OF THE TEXTURE IN READY MEALS

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Consumer Problems Associated with Ready Meals

Many elderly people turn to ready meals, but can they compete with a proper dinner?

“What if the food isn't good enough?”

“Are ready meals healthy?”

“The portions were too small and I'm still hungry, Is it worth of buying for that price?”

“When I tasted the ready meal, It doesn't feel like fresh cooked”

“beef was not that tender as fresh cooked.”

The taste was disgusting and after a mouthful, it was consigned to the bin. A most unpleasant experience.

"Actually had some flavour. Had the most flavour out of all of them."

“I am always concerned about the MSG in some of these meals. Did these meals have MSG (flavour enhancer 621)?”

Why Ready Meals?

“Convenient, tasty and nutritious alternative to takeaway food”

PROJET – 3 Phases

Phase 1 – Product development

- Recipe formulation
- Recipe trials
- Sensory evaluation and confirmation with the final recipe

Phase 2 – Analysis of Textural changes over the storage

- Texture Profile Analysis
 - Texture analyser
 - Trained sensory panel

Phase 3 – Nutritional Analysis

- Compositional analysis
- Digestibility assay
- Storage trials (oxidative changes)



Beef



Potato



Broccoli



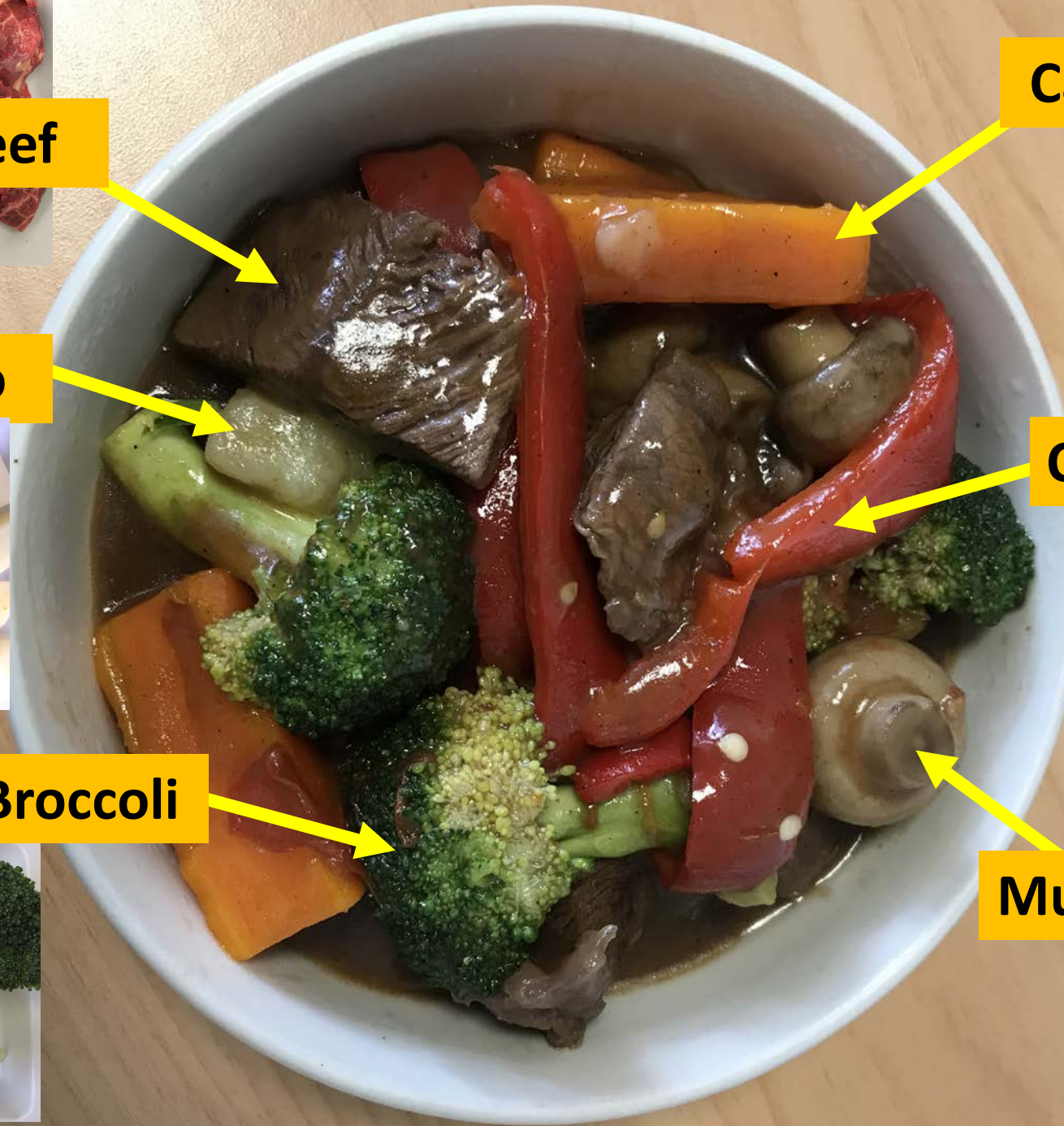
Carrot



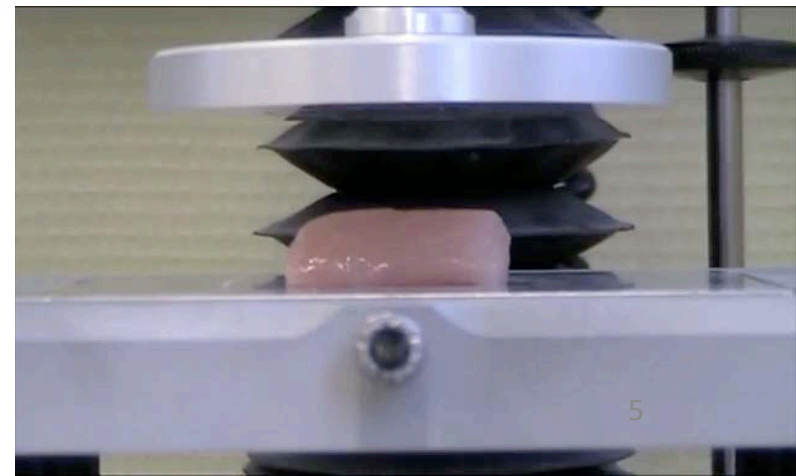
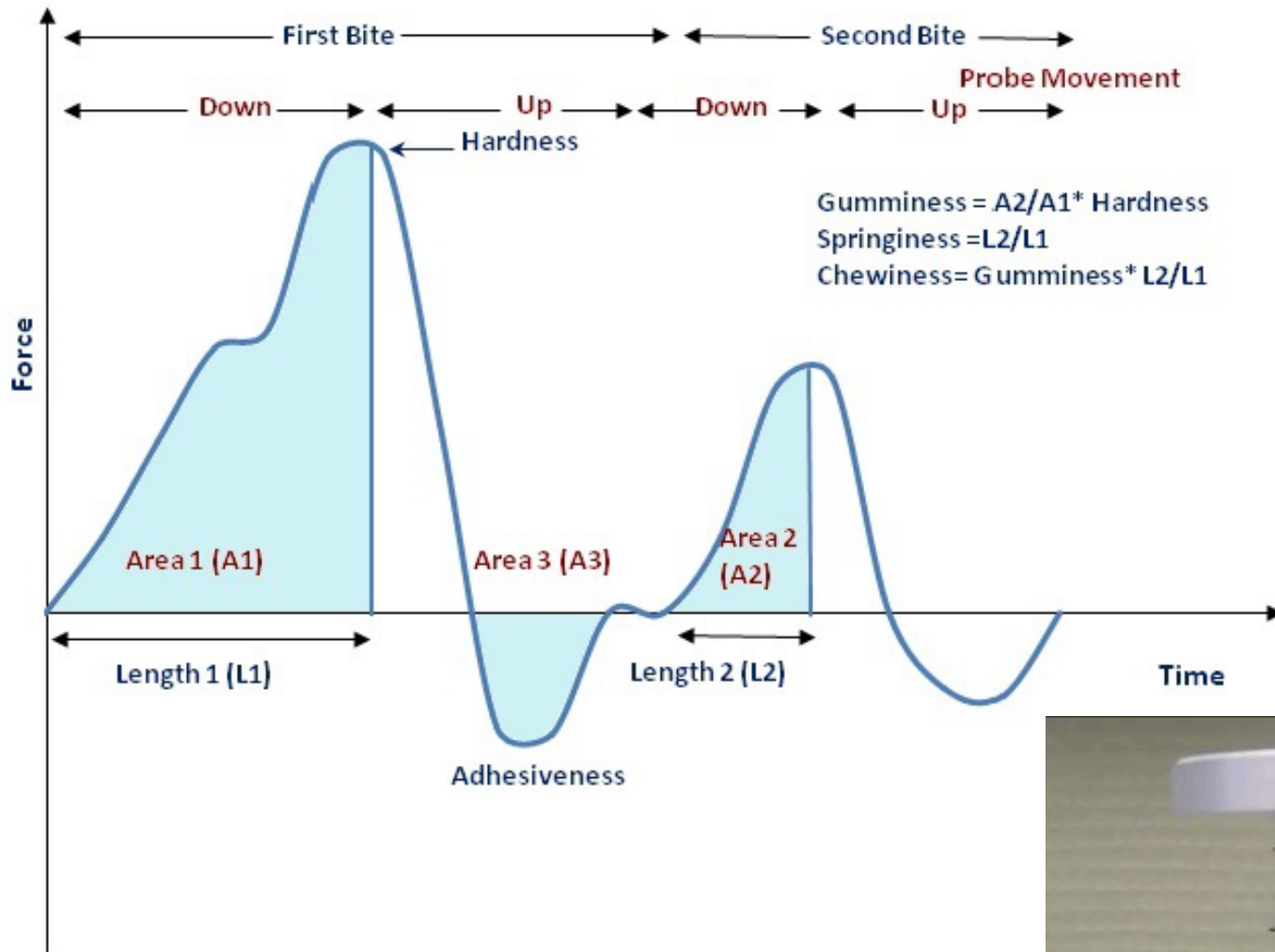
Capsicum



Mushrooms



Texture Profile Analysis (TPA)



Treatment Design and Measurements

Treatments	Main Ingredients				
	Beef	Potato	Carrot	Broccoli	Mushrooms
Fresh Cooked	10	10	10	10	10
Refrigerated (24h)	10	10	10	10	10
Refrigerated (24h) & Microwaved (1000W 2min high)	10	10	10	10	10
Frozen (7 days) & Microwaved (1000W 5min high)	10	10	10	10	10
Frozen (7 days) & Oven-heated (180°C 30min)	10	10	10	10	10

Main texture measurements are,

- Hardness
- Adhesiveness
- Chewiness
- Gumminess
- Springiness

Texture Profile Analysis Results- Whole Meal

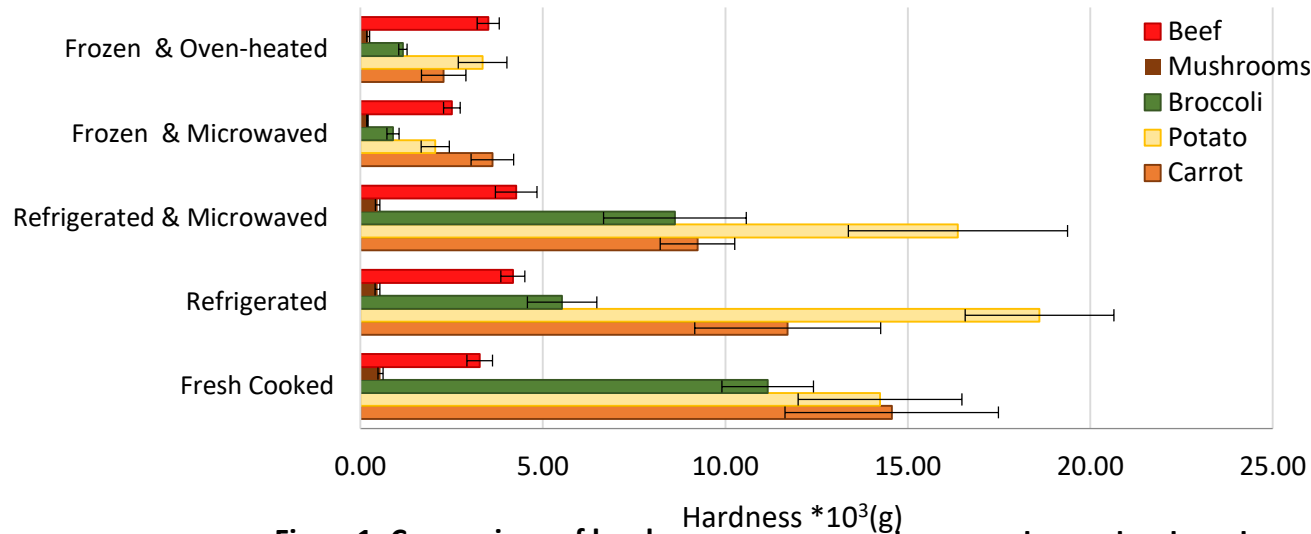


Figure1- Comparison of hardness measurement among storage treatments

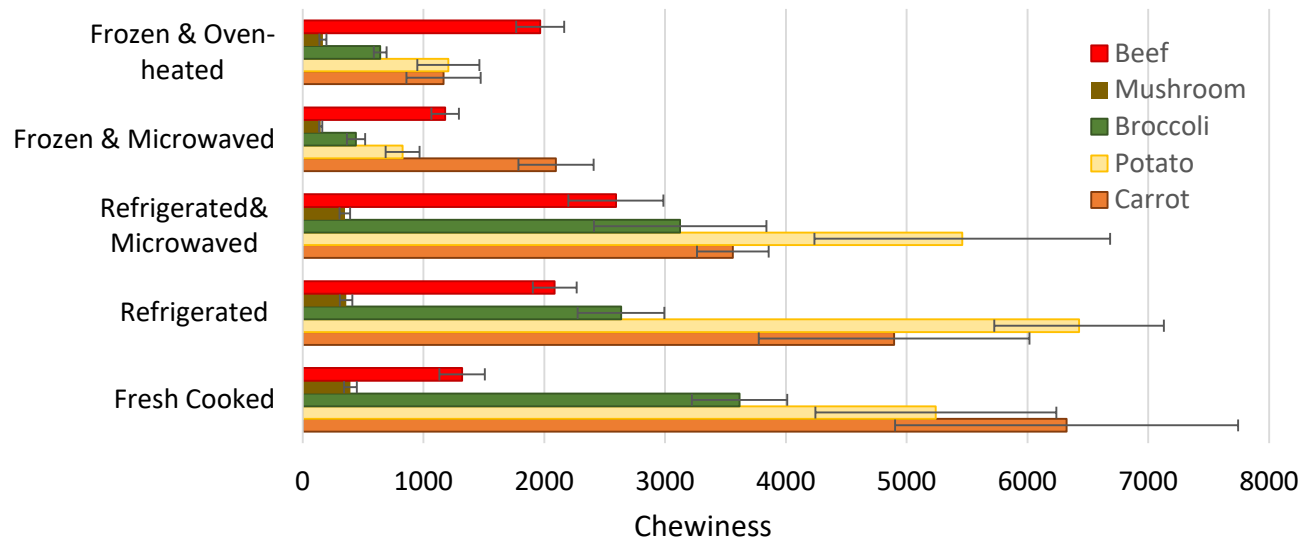


Figure1- Comparison of chewiness measurement among storage treatments



Texture Profile Analysis Results- Whole Meal cont....

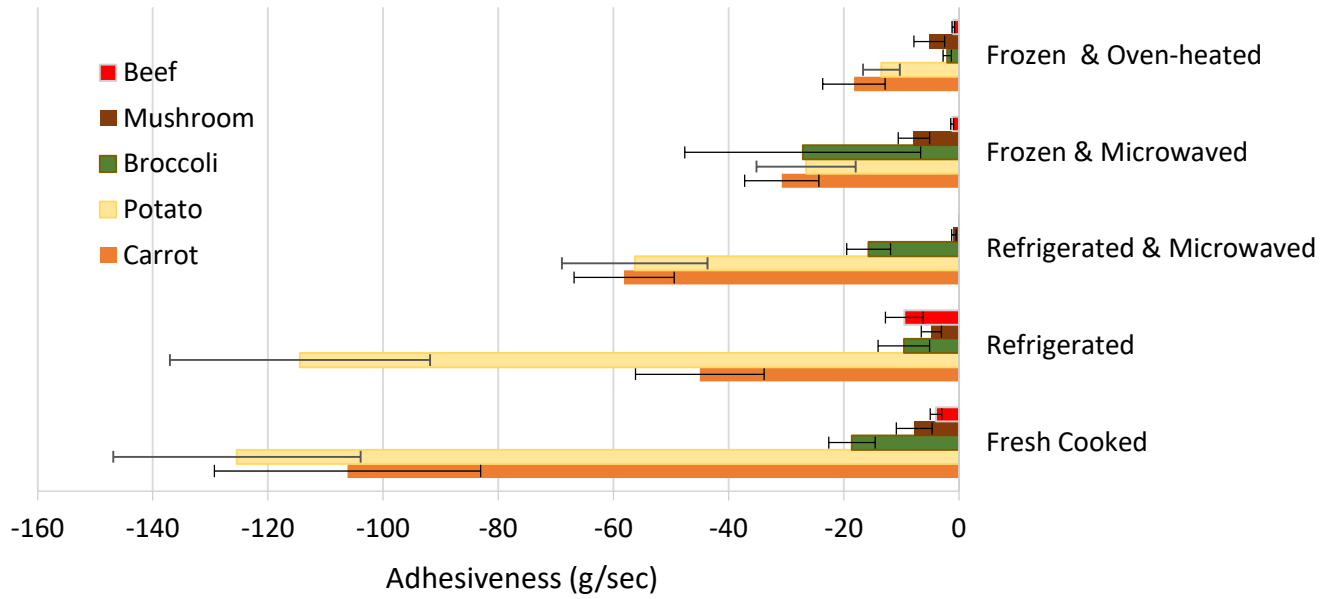


Figure 3- Comparison of Adhesiveness measurement among storage treatments

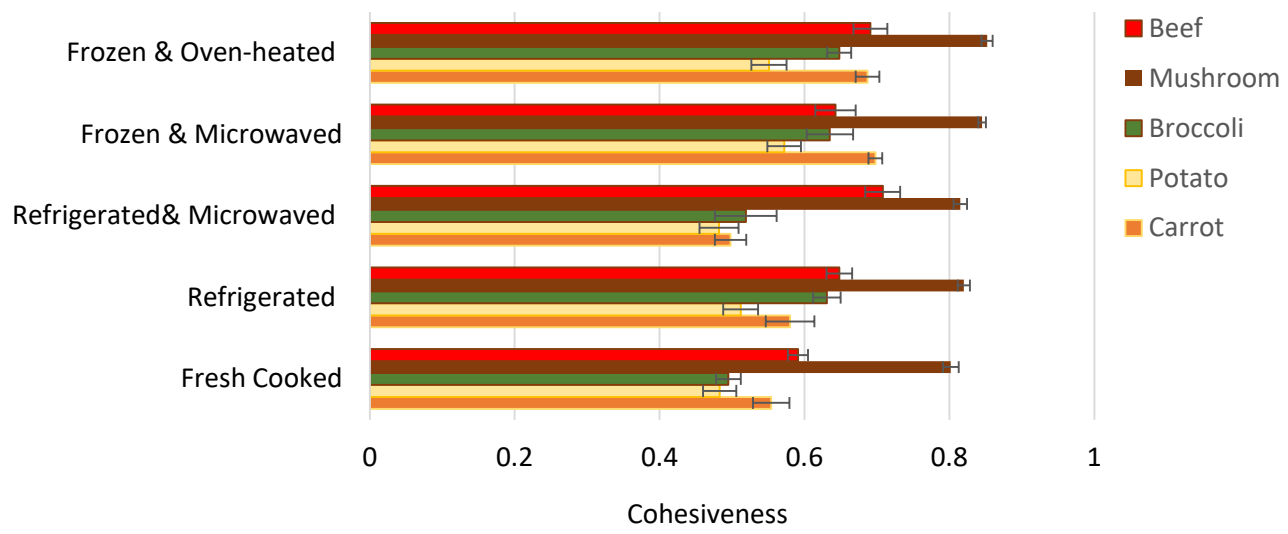


Figure 4- Comparison of Cohesiveness measurement among storage treatments



Texture Profile Analysis Results- Whole Meal cont....

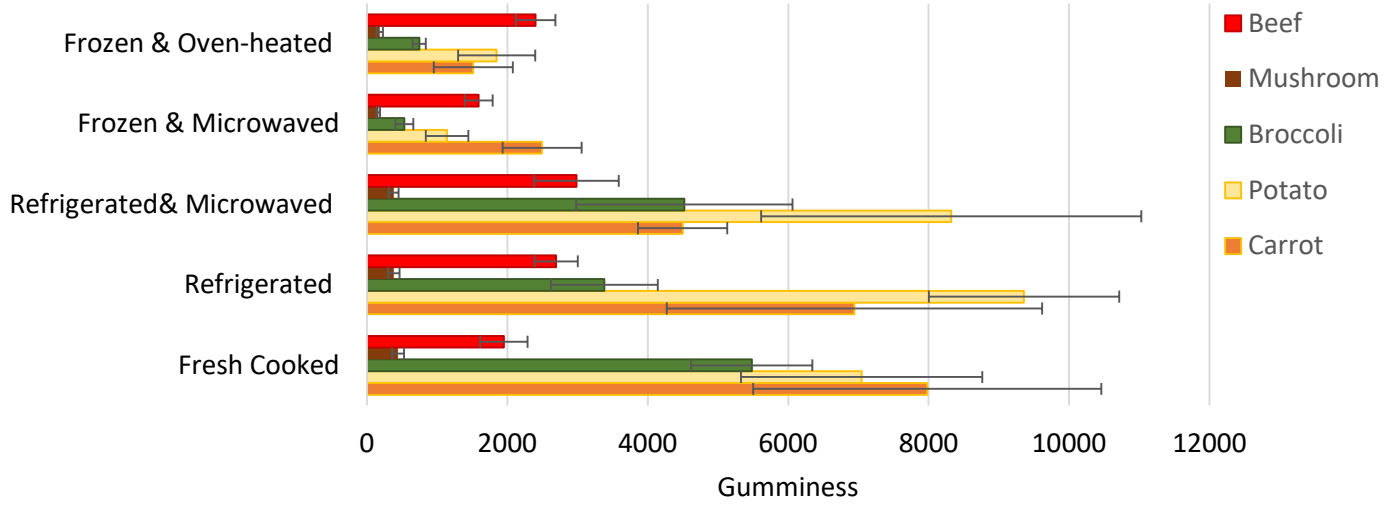


Figure 5- Comparison of Gumminess measurement among storage treatments

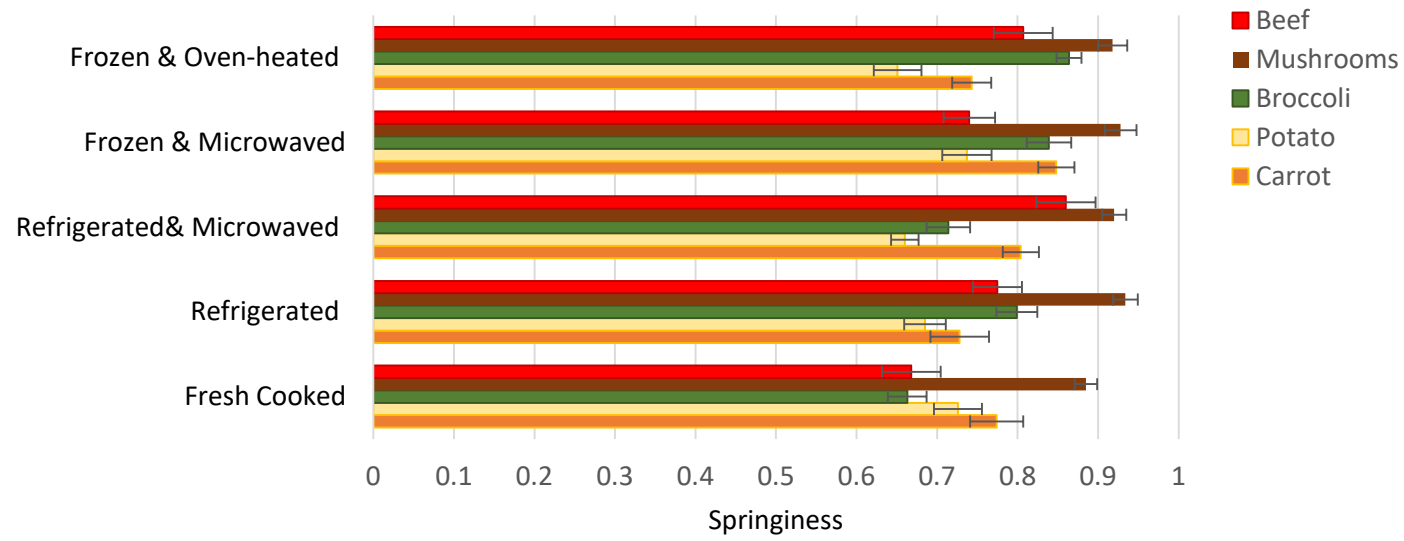


Figure 6- Comparison of Springiness measurement among storage treatments



Texture Profile Analysis Results- Whole Meal cont....

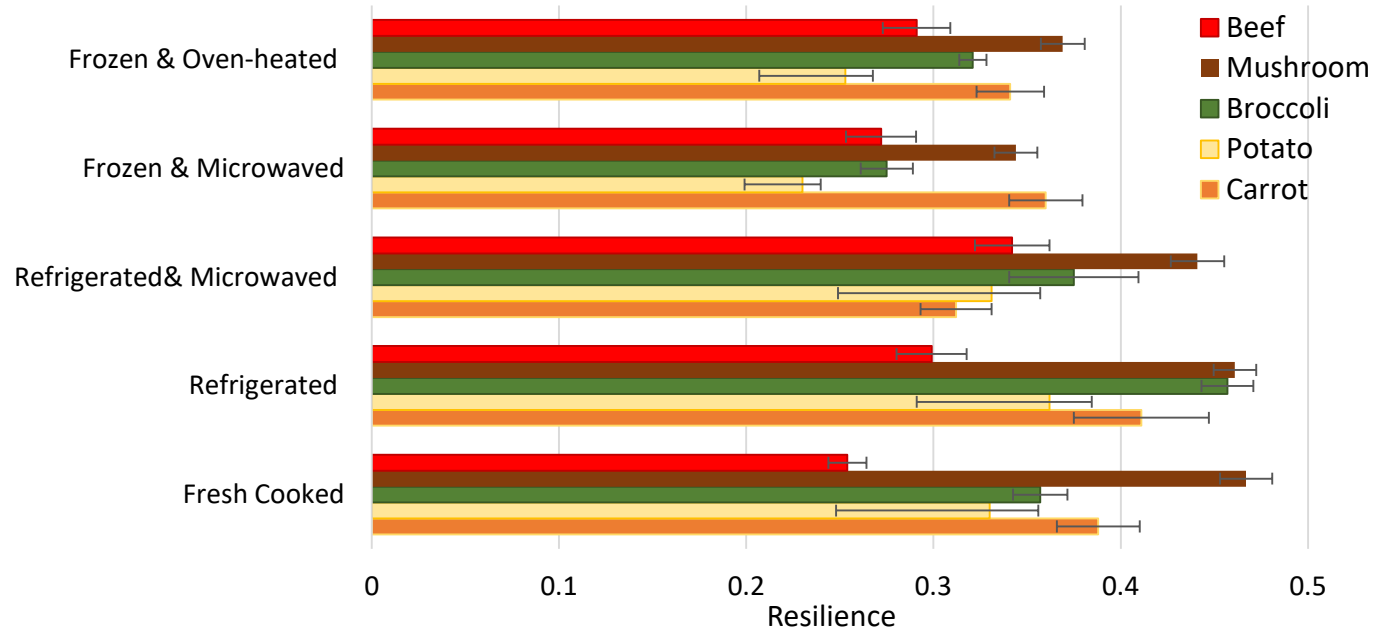


Figure 7- Comparison of Resilience measurement among storage treatments

Summery

- Hardness and the tenderness is the key sensory attributes in ready meal
- Frozen storage and thawing affect on hardness, gumminess, adhesiveness and chewiness
- Desirability of this reduction need to measure through a sensory panel

Future Focus - Sensory Analysis with trained sensory panel

Importance of this Project to Industry

- To unlock value from the whole carcass – add value for meat
- To provide information on quality changes (texture, aroma, flavor) happening during storage of ready meals
- To provide suggestions and recommendation on storage conditions (time, temperature), thawing & heating information of ready meals for chefs, manufacturers to preserve and serve in its best quality
- To find solutions for current food industry issues related with ready meal quality
- To understand the single ingredient behavior when it is in combine meal
- To setting up collaboration and commercialization of developed ready meal



Thank you...

Texture Profile Analysis Results- HARDNESS

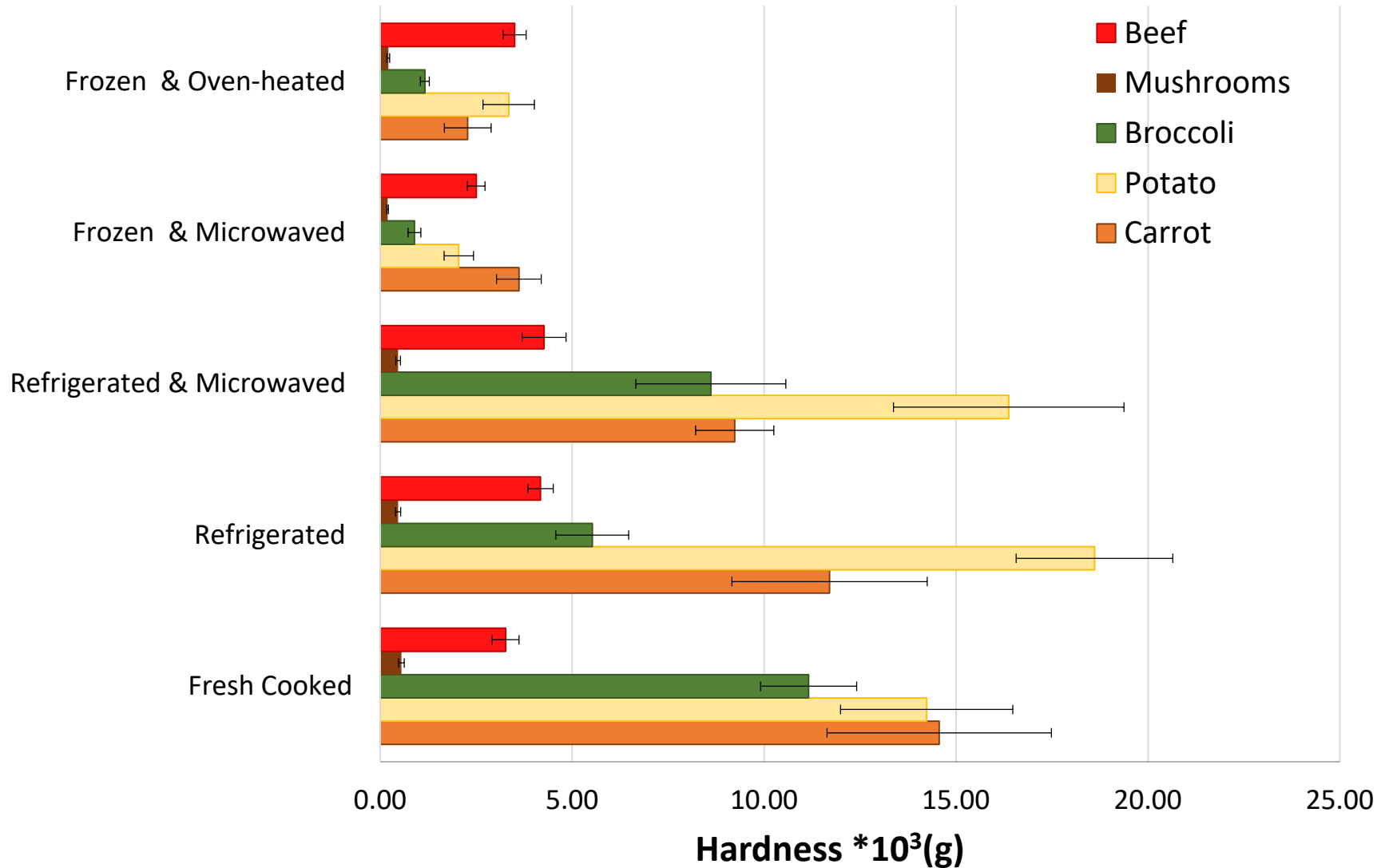


Figure1- Comparison of hardness measurement among storage treatments



Texture Profile Analysis Results- CHEWINESS

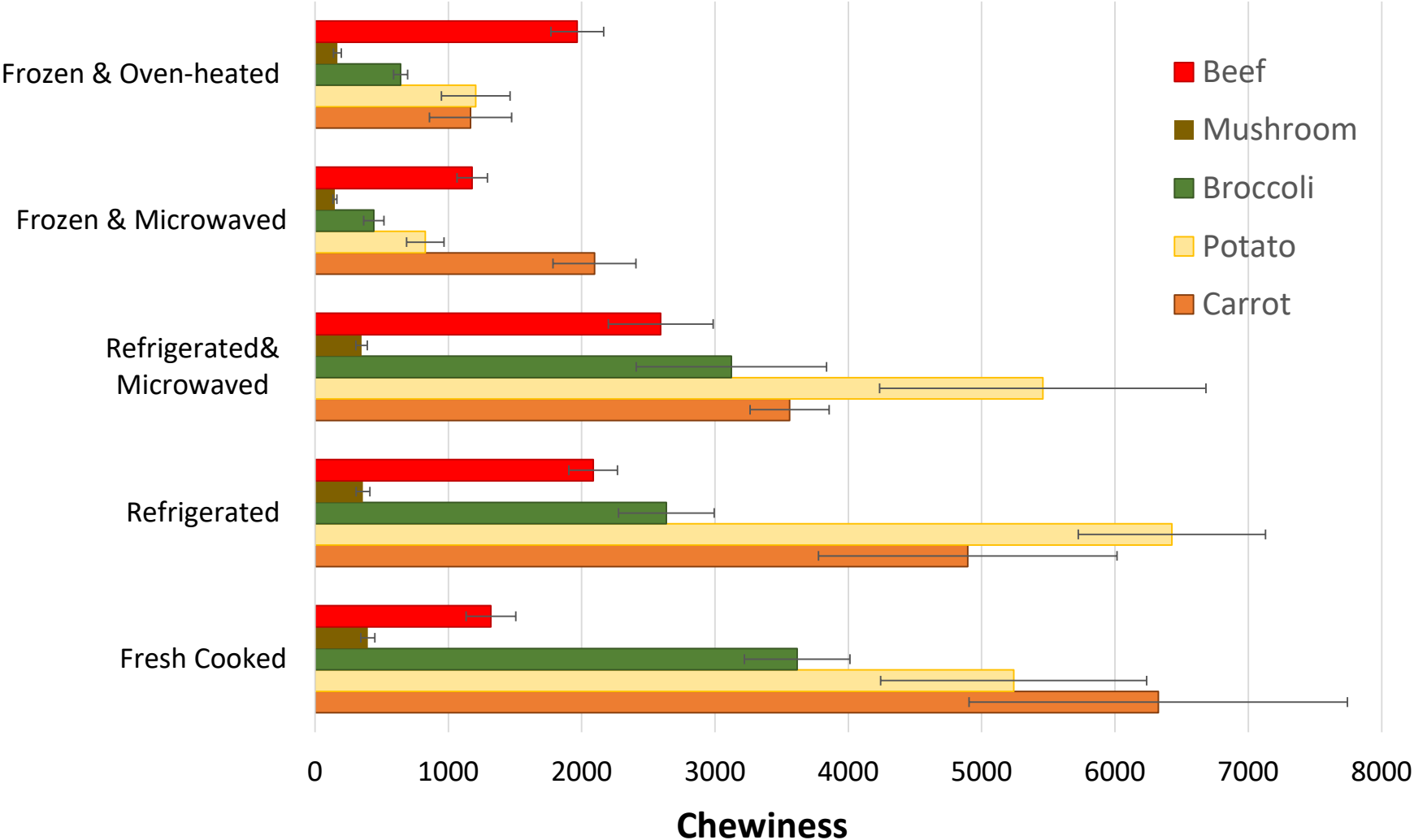


Figure 2- Comparison of Chewiness measurement among storage treatments



Texture Profile Analysis Results- ADHESIVENESS

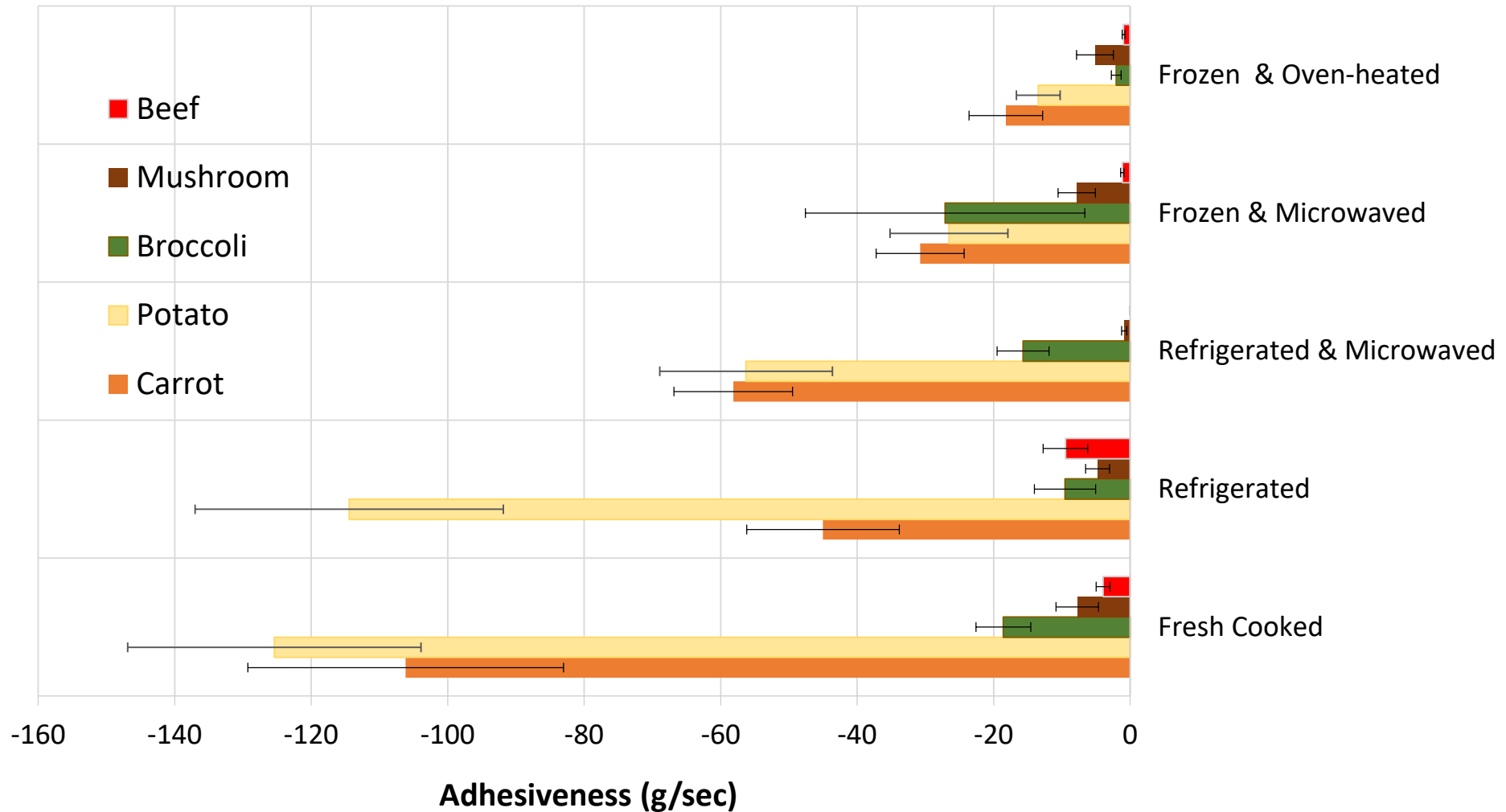


Figure3- Comparison of adhesiveness measurement among storage treatments 15



Texture Profile Analysis Results- COHESIVENESS

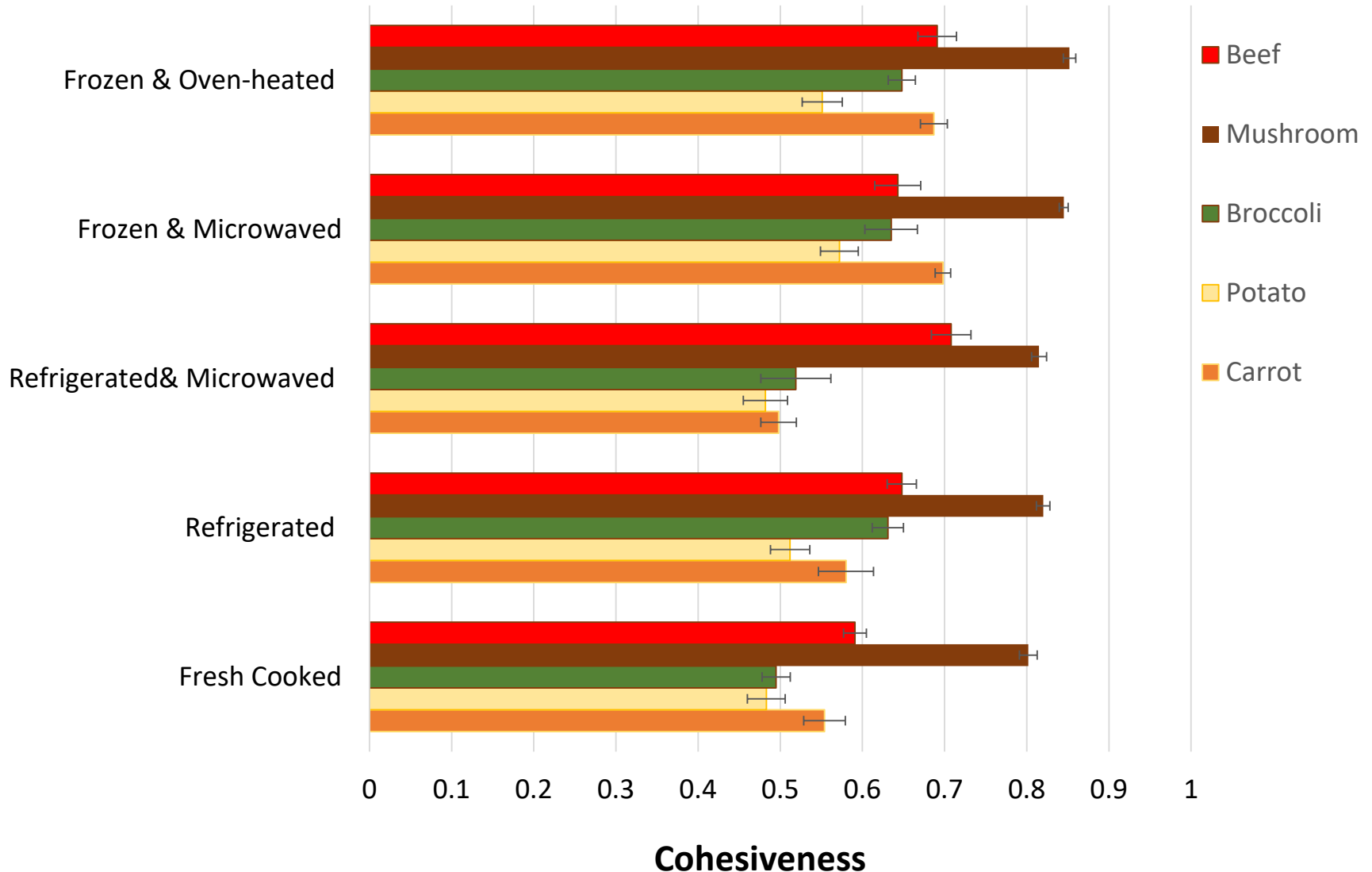


Figure 4- Comparison of cohesiveness measurement among storage treatments



Texture Profile Analysis Results- GUMMINESS

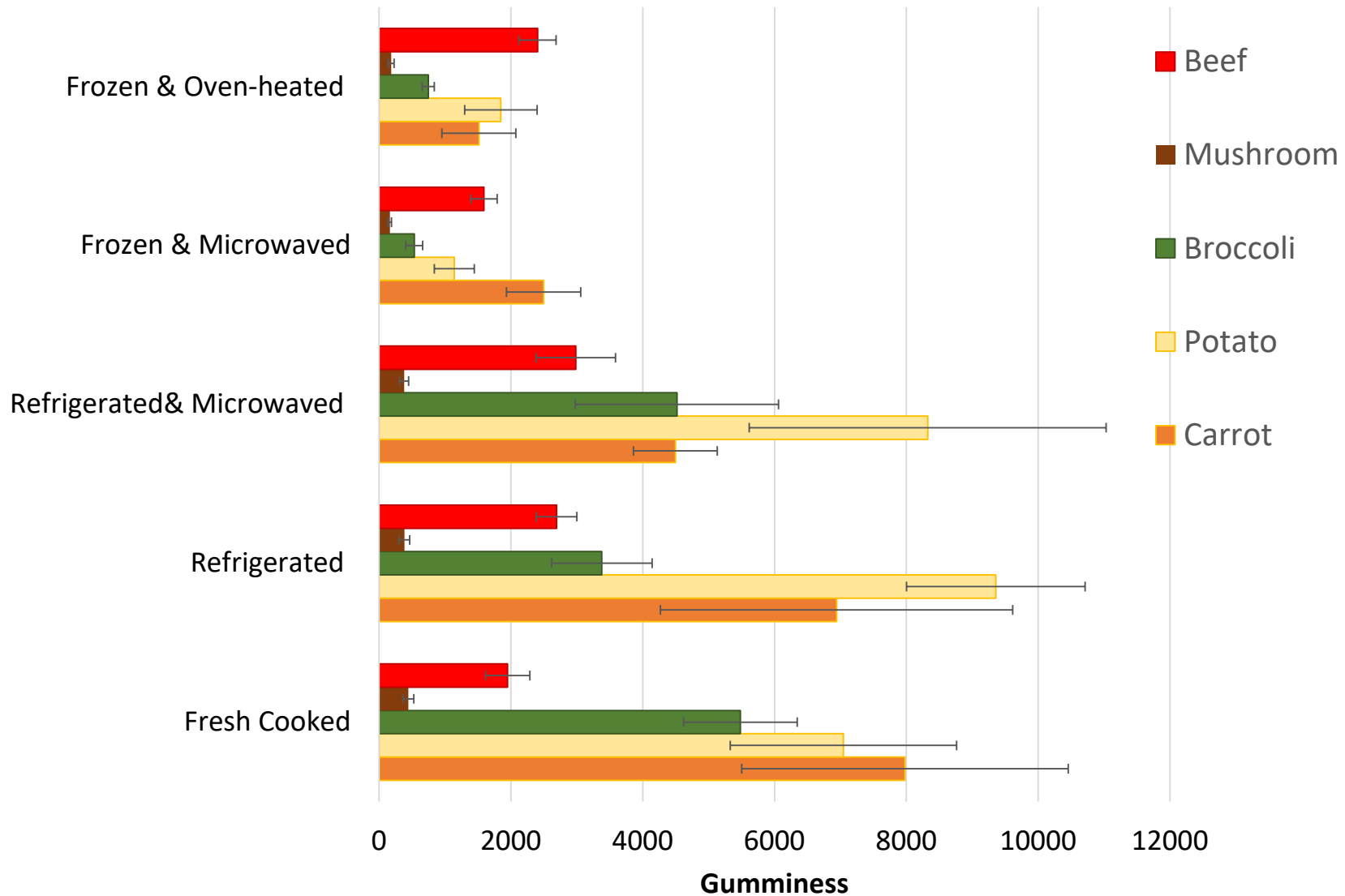


Figure 5- Comparison of gumminess measurement among storage treatments 17



Texture Profile Analysis Results- SPRINGINESS

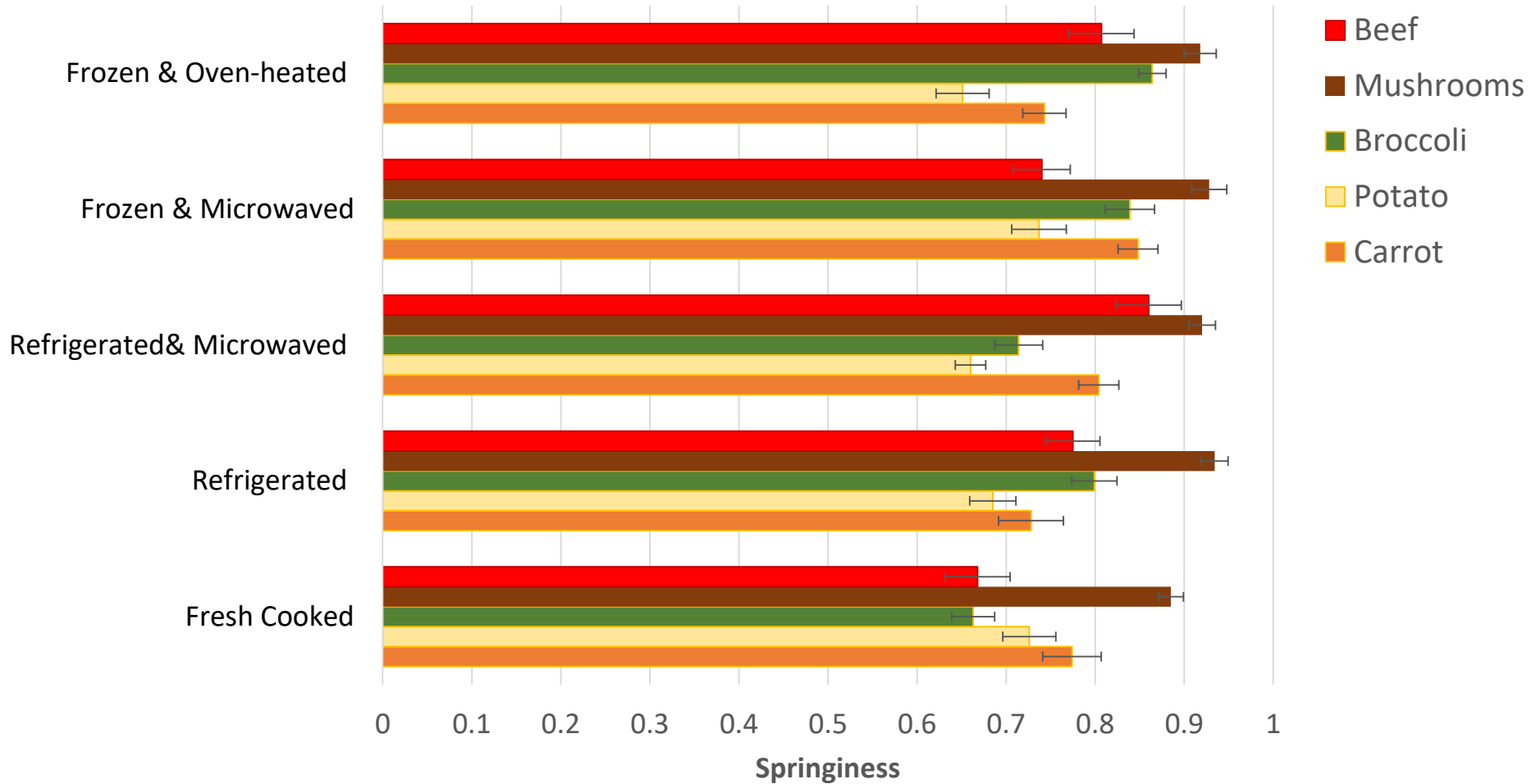


Figure 6- Comparison of springiness measurement among storage treatments 18



Texture Profile Analysis Results- RESILIENCE

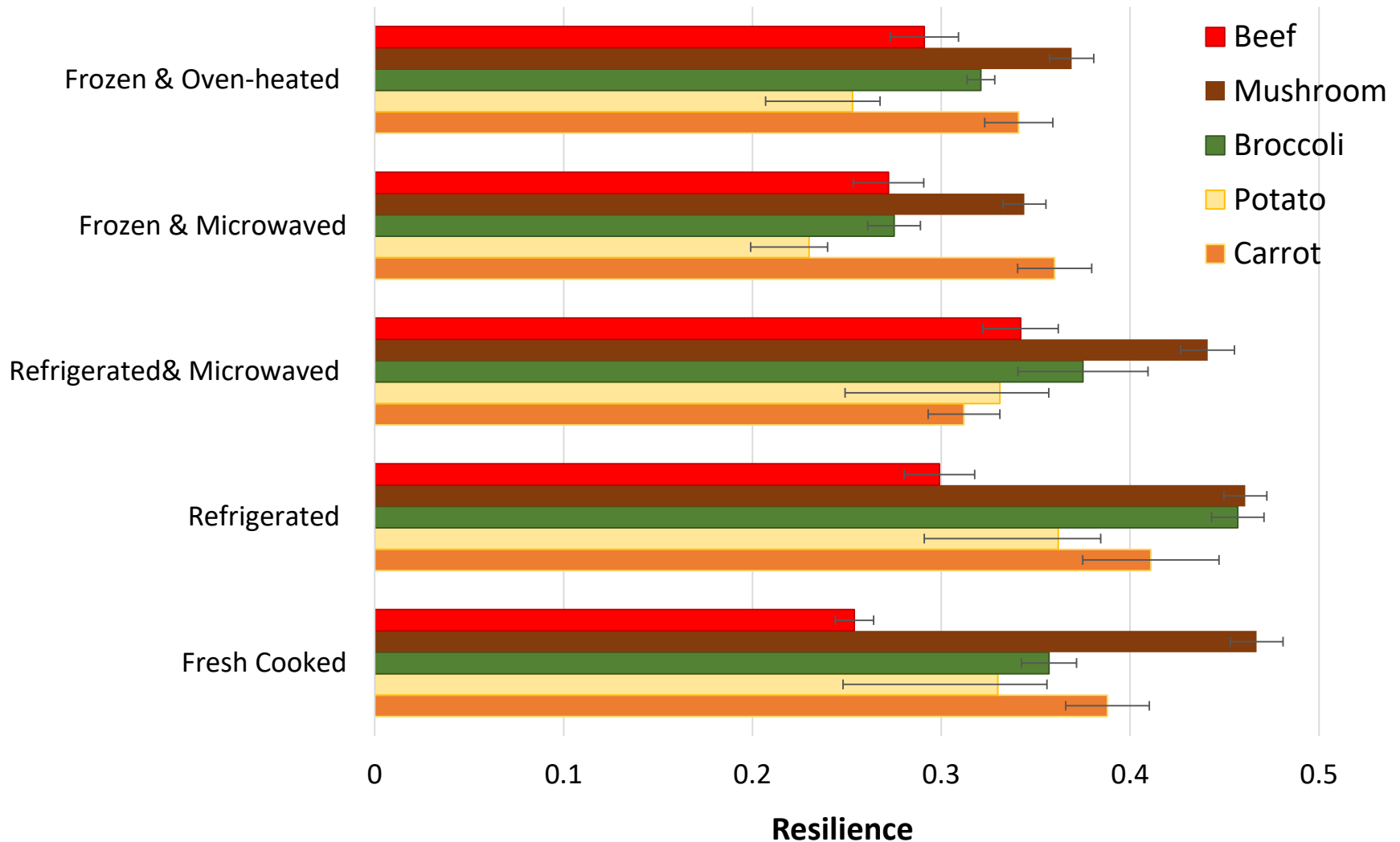


Figure 7- Comparison of resilience measurement among storage treatments

