

Prolonged Periods of Heat Further Inhibits Bromelain

Introduction

Bromelain breaks down protein found in food and our bodies. A temperature of 158°F (70°C) inhibits the enzyme and causes inactivity.

Objective

This study was conducted to define the length of time Bromelain must be treated with heat to effect no change.

Materials and Methods

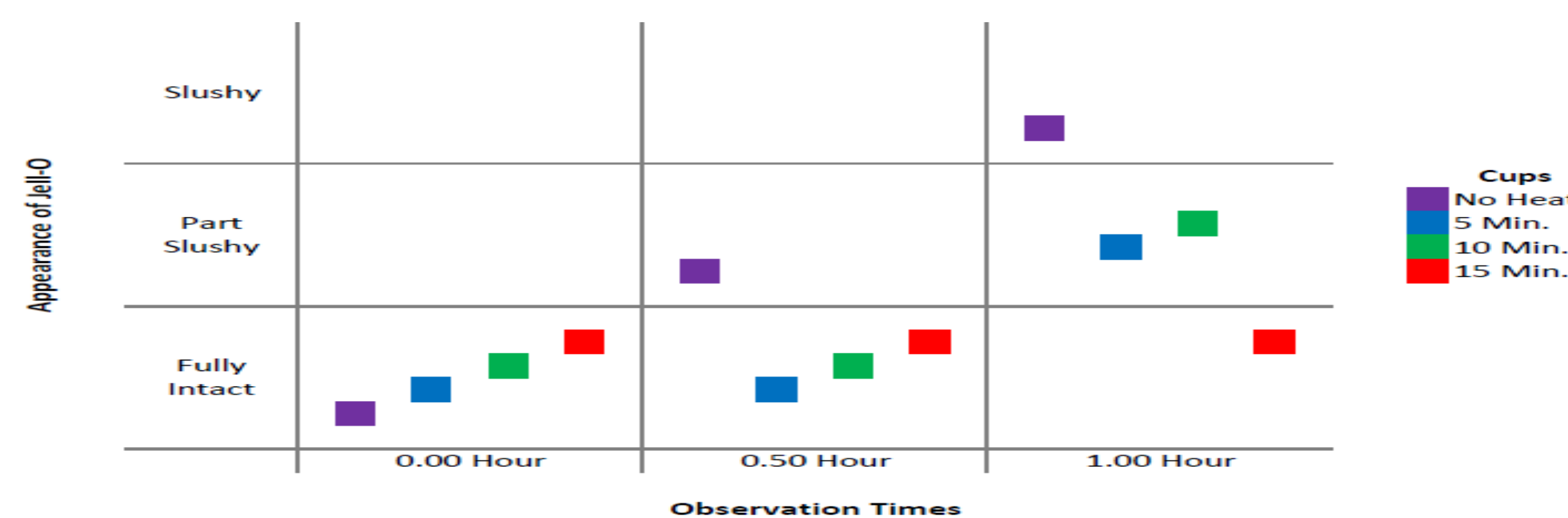
- Boiled 3 pineapple chunks for 5, 10 and 15 minutes at 158°F. Reserved a 4th chunk for the No Heat cup.
- Added all the 4 chunks to their labeled Jell-O cups. Recorded 0.00-hr, 0.50-hr and 1.00-hr observations.
- Plotted a graph and created a schematic chart.

Literature Cited

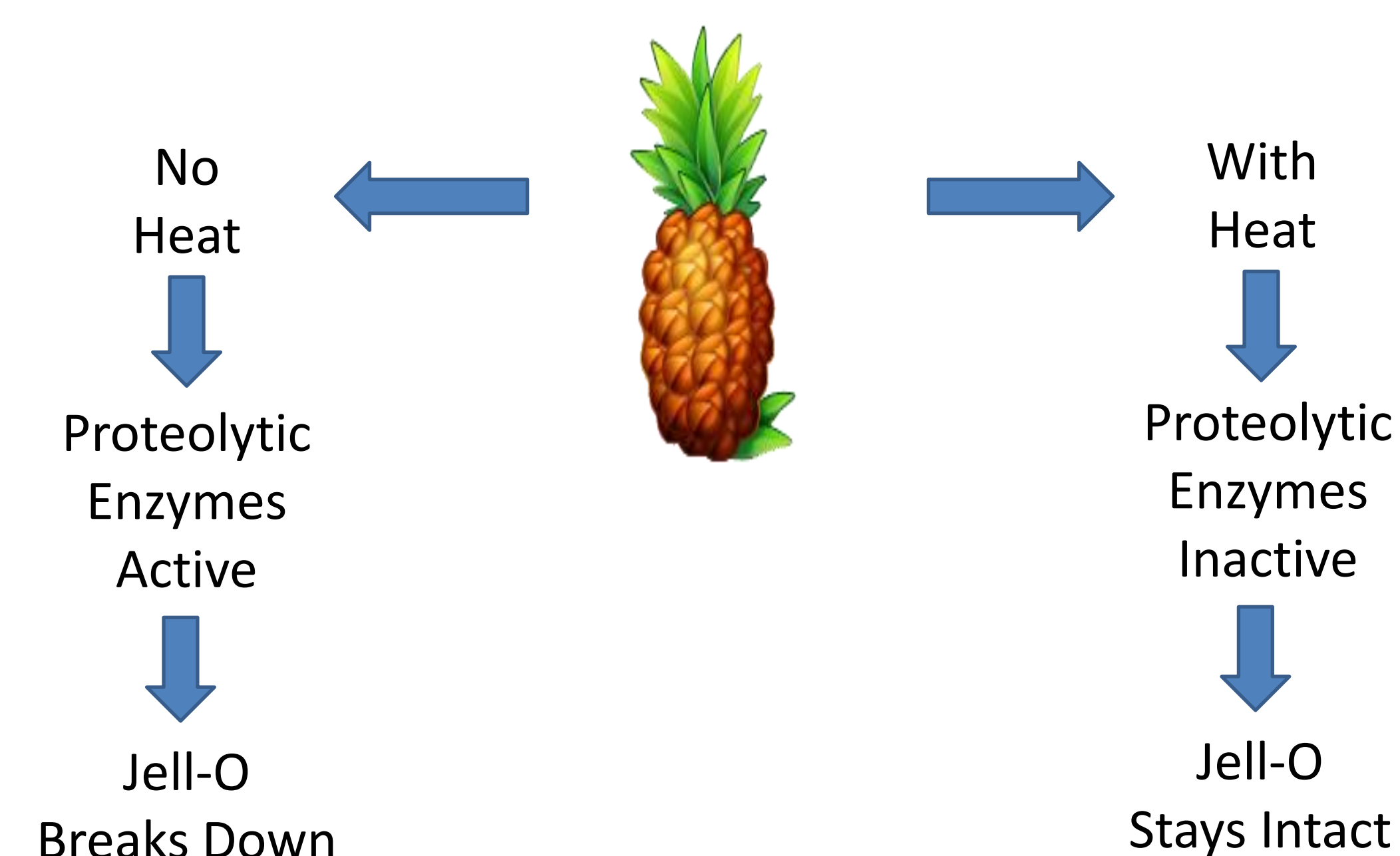
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Results Chart and Graph

Cups	0.00 Hour	0.50 Hour	1.00 Hour
No Heat	Fully Intact	Part Slushy	Slushy
5 Min.	Fully Intact	Fully Intact	Part Slushy
10 Min.	Fully Intact	Fully Intact	Part Slushy
15 Min.	Fully Intact	Fully Intact	Fully Intact



Schematic Chart



Conclusion

In conclusion, it is proven that when the pineapples are heated for longer periods of time, the Bromelain enzyme further loses its ability to initiate proteolysis, or break down, of the peptide bonds that are present in a protein chain. The success of this research is attributed to the easy-to-follow methods during application and replication of this experiment.

Take-Home

- Bromelain in fresh pineapple causes:
- Rawness and numbness as it interacts with the protein in our mouths,
 - Break down of collagen in recipes like Jell-O,
- On the other hand, Bromelain can be:
- A short-term digestive aid.
 - Used as tenderizer for meats.

Acknowledgments

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