



Seminar Notice

Department of Biochemistry
and Molecular Biology

Brant Badow

Thesis Defense

Biochemistry and Molecular Biology

*“The Effect of Pomegranate Consumption on
the Gut Microbiome”*

Tuesday, April 4, 2023

11:00 AM

Room 135 Oelman Hall

Please Post!

Advisor: Oleg Paliy, Ph.D.



Boonshoft
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Abstract

Pomegranate is known to have antioxidant and prebiotic qualities that have shown to promote the growth of beneficial bacteria while reducing inflammation in the gut. Inflammation in the gut is an issue that results in many health problems including obesity and colon cancer.

In this study, an experimental group would receive a daily pomegranate supplement for three weeks where a control group did not receive any supplement. After sequencing fecal samples from both before and after the trial period there was a significant difference between the two groups.

The largest amount of variability is attributed to the individual the sample came from. However, pomegranate did significantly contribute to a change in the gut microbiome. Multiple different genera were changed between the pre-and post-pomegranate trial samples. Two of these genera, *Limosilactobacillus* and *Enterococcus*, are both lactic acid bacteria. Lactic acid bacteria are known to have anti-inflammatory qualities within the gut. Other genera, including *Collinsella* was reduced during the trial period. *Collinsella* promotes inflammation in the gut that can lead to many intestinal diseases including irritable bowel syndrome and ulcerative colitis.

Overall, this study shows that pomegranate consumption results in a significant change to the gut microbiome by promoting anti-inflammatory bacteria while reducing pro-inflammatory bacteria. The changes in the gut by pomegranate consumption helps protect against inflammatory associated diseases including type 2 diabetes and irritable bowel syndrome.