A Measure of the Amount of Vitamin K Leached Out from Cooked Greens in Potliker

Douglas Anderson  
*Cedarville University*, andersond@cedarville.edu

Kara Bobka  
*Cedarville University*, karamichelebobka@cedarville.edu

Matthew Johnson  
*Cedarville University*, matthewdjohnson@cedarville.edu

Chelsea Manion  
*Cedarville University*, cmanion@cedarville.edu

Samuel Tesfaye  
*Cedarville University*, stesfaye@cedarville.edu

Follow this and additional works at: [http://digitalcommons.cedarville.edu/pharmacy_nursing_poster_session](http://digitalcommons.cedarville.edu/pharmacy_nursing_poster_session)

Part of the [Chemicals and Drugs Commons](https://digitalcommons.cedarville.edu/chemicals_drugs_commons), [Nursing Commons](https://digitalcommons.cedarville.edu/nursing_commons), [Pharmacy and Pharmaceutical Sciences Commons](https://digitalcommons.cedarville.edu/pharmacy_pharmaceutical_sciences_commons), and the [Public Health Commons](https://digitalcommons.cedarville.edu/public_health_commons)

Recommended Citation
Anderson, Douglas; Bobka, Kara; Johnson, Matthew; Manion, Chelsea; Tesfaye, Samuel; Widder, Rebecca; and Willoughby, Joshua, "A Measure of the Amount of Vitamin K Leached Out from Cooked Greens in Potliker" (2014). *Pharmacy and Nursing Student Research and Evidence-Based Medicine Poster Session*. 63.  
[http://digitalcommons.cedarville.edu/pharmacy_nursing_poster_session/63](http://digitalcommons.cedarville.edu/pharmacy_nursing_poster_session/63)

This Poster Session is brought to you for free and open access by DigitalCommons@Cedarville, a service of the Centennial Library. It has been accepted for inclusion in Pharmacy and Nursing Student Research and Evidence-Based Medicine Poster Session by an authorized administrator of DigitalCommons@Cedarville. For more information, please contact digitalcommons@cedarville.edu.
Authors
Douglas Anderson, Kara Bobka, Matthew Johnson, Chelsea Manion, Samuel Tesfaye, Rebecca Widder, and Joshua Willoughby
To determine if the amount of vitamin K leached from cooked greens into potlicker is dependent upon the amount of fat in the cooking solution and if the amount vitamin K leached depends upon the type of green. Performance Liquid Chromatography (HPLC) will be employed as follows:

**Measurement:**
To determine the vitamin K content in each of the prepared samples, High Performance Liquid Chromatography (HPLC) will be employed as follows:

**Data Collection:**
- Study seeks to find if potlicker contains significant amounts of vitamin K that interact with warfarin. Patients taking warfarin must closely regulate their intake of vitamin K.
- Changes in dietary vitamin K intake influences warfarin's mechanism of action in the body.
- Vitamin K content is fat soluble and found in greens.

This will enable healthcare providers to counsel patients on warfarin, who consume potlicker.

**Significance of the Problem:**
Cooking greens is a common practice in the Southern United States to create a broth or potlicker.

**Background:**
- leached from cooked greens into potlicker and the type of green.
- leached from cooked greens into potlicker and the amount of fat in the cooking solution.
- Alternative Hypothesis (H_A):
- Null Hypothesis (H_0):

**HYPOTHESES**
- Null Hypothesis (H_0):
- There is no statistically significant difference between the amount of vitamin K leached from cooked greens into potlicker and the amount of fat in the cooking solution.
- Alternative Hypothesis (H_A):
- There is a statistically significant difference between the amount of vitamin K leached from cooked greens into potlicker and the type of green.

**PROPOSED METHODS**
- A supplement containing a known amount of vitamin K will be extracted to verify the reliability of the HPLC machine.
- 2 mL of each extracted potlicker sample will be combined with hexane and ethyl acetate. The organic layer will be washed with a methanol and water mixture.
- Each sample will be vortexed for 15 minutes and centrifuged for 5 minutes.
- Supernatant will be evaporated to dryness using a steam of nitrogen. Methanol will be added to the sample to redissove the solution.
- Solution will be injected into the HPLC machine for analysis.

**Table 1: Sample Categories for the Comparison of Vitamin K Leached**

<table>
<thead>
<tr>
<th></th>
<th>Group 1 (No Fat) (g/L)</th>
<th>Group 2 (Low) (g/L)</th>
<th>Group 3 (Medium) (g/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Collard (5g)</td>
<td>Sg + 0g/L + 1L H₂O</td>
<td>Sg + 1g/L + 1L H₂O</td>
<td>Sg + 2g/L + 1L H₂O</td>
</tr>
<tr>
<td>B Mustard (5g)</td>
<td>Sg + 0g/L + 1L H₂O</td>
<td>Sg + 1g/L + 1L H₂O</td>
<td>Sg + 2g/L + 1L H₂O</td>
</tr>
<tr>
<td>C Turnip (5g)</td>
<td>Sg + 0g/L + 1L H₂O</td>
<td>Sg + 1g/L + 1L H₂O</td>
<td>Sg + 2g/L + 1L H₂O</td>
</tr>
<tr>
<td>D Spinach (5g)</td>
<td>Sg + 0g/L + 1L H₂O</td>
<td>Sg + 1g/L + 1L H₂O</td>
<td>Sg + 2g/L + 1L H₂O</td>
</tr>
</tbody>
</table>

**Measurement:** To determine the vitamin K content in each of the prepared samples, High Performance Liquid Chromatography (HPLC) will be employed as follows:

**REFERENCES**