

<b>PRO 0918</b>
<i>Knowledge, skills, attitudes and behaviors of women, infants &amp; children (WIC) recipients regarding pulses</i>
<b>INVESTIGATORS</b>
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<b>STUDY SPONSORS</b>
Saskatchewan Pulse Growers
<b>STUDY TYPE</b>
Health Outcome: Observational: Cross-Sectional Survey
<b>OBJECTIVES</b>
To determine the knowledge, skills, attitudes and behaviors of WIC participants in the preparation and consumption of dried and canned pulses and to develop a pilot low literacy canned pulse recipe and education program to North Central Florida WIC program recipients.
<b>WHY STUDY NEEDED</b>
The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) serves women and children in the United States and provides Federal grants to States for supplemental foods, health care referrals and nutrition education for low income pregnant and nursing women and infants and children up to age five who are at nutritional risk. The majority of WIC recipients represent ethnic and minority populations.  In 2007, the supplemental food packages given to WIC recipients was expanded to include canned pulses in addition to dry pulses to increase variety, convenience, and general health benefits as well as it had become evident that many families did not know how to prepare dry pulses. This study will evaluate the knowledge, skills, and behaviors of WIC in using canned pulses in family recipes and menus.
<b>HYPOTHESIS</b>
No.1: The pulse component of the WIC supplemental food package is underused due to lack of knowledge regarding pulse and lack of meal planning and recipe

incorporating skills.

No. 2: Pulses are viewed as an affordable food item versus as a healthy tasty staple of the diet.

### STUDY DESIGN

A survey of the knowledge, skills, attitudes, and behaviors of WIC regarding preparation and consumption of dried and canned beans was carried out in Alachua County WIC program (Florida). The survey consisted of eight knowledge questions, four skill questions, eleven attitude questions and twelve behavior questions formatted as a rating scale between 1 (strongly disagree) and 5 (strongly agree). A total of 107 questionnaires were obtained.

### FINDINGS

WIC recipients showed a high general knowledge regarding the nutritional content of beans and that beans are an important part of a healthy diet.

Participant Demographics:

- Average age: 29.9±11.4 years
- Average number of people per household: 4±1.6
- Average number of children per household: 2.14
- English as preferred language: 98%
- Race: White (88%), African-American (9%), Other/mixed (3%)
- Ethnicity: Non-Hispanic (84%)

In general the survey showed WIC recipients:

- Had a high “liking” of beans
- Avoidance of beans due to perceived symptoms after consumption
- Confidence in recipe and meal preparation with beans with a positive ranking of willingness to “try new recipes”
- Beans are used as a vegetable or starchy food rather than as a meat replacement
- Inclusion of canned beans may have increased consumption of beans
- Indicated that low sodium canned beans are not often selected

### SIGNIFICANCE OF STUDY

Inclusion of canned beans in the WIC food supplements may have increased consumption of beans.

Survey showed there was an opportunity to increase use of beans as a meat substitute and to promote use of low sodium beans.

Researcher continues to promote pulses as an affordable nutritious food of the Extension program at the University of Florida.

**Project Achievements:**

1. Development of the survey questionnaire and completion of survey assessing the knowledge, skills, attitude,s and behaviors of WIC participants regarding pulses.
2. Poster presentation of survey results at Society for Nutrition Education (SNE) 2012
3. Abstract publication of survey results in the SNEB supplement.
4. Development of an online low cost – low skills pulse cookbook.
5. Development of a 10 pulse recipe cheque insert distributed to WIC participants
6. Development of a 4-H and middle school canned pulse cooking program
7. Publication “Shopping for Health: Bean, Peas and Lentils” EDIS.
8. Draft of EDIS “Beans and Health”

**PUBLICATIONS, PRESENTATIONS, EDUCATIONAL MATERIALS PRODUCED**

1. Dahl WJ, Radford A, Curtis S. WIC recipient’s knowledge, attitudes, behaviors, and skills regarding dry beans. *Journal of Nutrition Education and Behavior*, 43, S26.
2. Dahl WJ, Radford A, Curtis S. 2011. WIC recipients’ knowledge, attitudes, behaviors and skills regarding dry beans. SNE 2011. Kansas City, MO, 07/25/11.

**Educational Materials Developed:**

1. Thirty recipes with the following criteria were developed: canned pulses as the main ingredient; low cost; ease of preparation and less than five common ingredients.
2. Subsets of recipes formatted as child friendly and inserted into WIC monthly cheques to encourage use of canned beans in foods for younger children
3. Low literacy recipes, meal ideas, and low literacy nutrition education on beans (brochure form) were distributed to WIC participants, placed in waiting rooms and given to WIC nutritionists.
4. Recipes formatted into online extension EDIS publication for widespread distribution.
5. Drafted pulse educational module for use by Extension Faculty
6. Development of a pulse cooking program for 4-H youth was developed and pilot tested with 20 youth in Alachua County. Later adapted and offered as an after school program.

**VALUE TO PRODUCERS**

Indicates the need for continued public education of nutritional and health benefits of incorporating pulses into weekly diet

Increased consumer knowledge would translate into increased consumption.