

Research: Flatulence Issue May Be Over-Blown

By Joanne Slavin, PhD, RD

The relationship of beans and gut function is renowned. Just watch the campfire scene from the Mel Brooks movie, “Blazing Saddles,” or recall the children’s rhyme, “Beans, beans, the musical fruit.” How good is the science beyond the legend of beans and gut function?



An article in the *New England Journal of Medicine* in 1980 was entitled “Intestinal gas production—recent advances in flatology.”

Dr. Michael Levitt at the Minneapolis VA Hospital wrote “Production of gas in the intestinal tract is an aspect of human physiology that has received far more attention in the scatologic than the scientific literature. In recent years, however, a few reports have threatened to deflate some of the mythology surrounding this topic and pump some data into a field that has been filled largely with hot air.”¹

RDN Takeaway #1:

Dietary fiber and its fermentation products offer health benefits, including changes in the gut microbiota.

Dr. Levitt reviewed that carbohydrate maldigestion was thought to be the cause of the intestinal gas seen with consumption of beans.¹ The oligosaccharides in beans, raffinose and stachyose for example, are not removed with hot water, and function similar to dietary fiber in that they escape digestion and absorption in the upper gastrointestinal tract and can be fermented in the large intestine. The potential negative effect of this fermentation is intestinal gas, but we now appreciate that there are health benefits of dietary fiber and its fermentation products, including

changes in the gut microbiota. Although it is often stated that the gut can adapt to consumption of beans, controlled studies find limited adaptation to bean consumption over time.² In fact many studies find that there are large individual differences in intestinal gas production and these must be considered when recommending a large intake of dietary fibers and oligosaccharides.

RDN Takeaway #2:

Concerns about flatulence with bean consumption are exaggerated, researchers say.

What new findings have emerged in the field of digestive health and consumption of dry beans and peas? **Winham & Hutchins**³ examined perceptions of flatulence from bean consumption among adults in three feeding studies. Less than 50 percent of subjects reported increased flatulence from eating pinto or baked beans during the first week of each trial, but only 10 percent had a flatulence increase with black-eyed peas. A small percentage (3–11 percent) reported increased flatulence across the three studies even on control diets without flatulence-producing components. The authors conclude that concerns about flatulence with bean consumption are exaggerated and that practitioners should address the

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See article on page 4.





Dr. Slavin speaks at our bean seminar.

potential for gastrointestinal discomfort when increasing fiber from all sources, including dry beans, and recognize that there is large individual variation in response to different bean types.

Dahl et al.⁴ measured gastrointestinal tolerance to daily canned

garbanzo bean intake in adults (n=12). Subjects received non-flatulence inducing control foods, control foods with 5 grams raffinose, and control foods with 200 grams of canned garbanzo beans (11 grams of fiber). Each diet was consumed for three weeks. Gastrointestinal symptoms (rating 0 = none to 3 = severe), compliance, and stool frequency were recorded.

No change in stool frequency was found among the diets. Reported flatulence was higher on the garbanzo bean treatment and raffinose treatment, as compared to the control treatment. Bloating was infrequent, but ratings were higher on the garbanzo bean and control treatments. No differences were found in diarrhea or abdominal pain.

RDN Takeaway #3:

Canned beans may be a feasible way to increase pulse intake and improve diet quality.

Symptoms with garbanzo beans and raffinose were mild in the study. The authors conclude that canned garbanzo beans may be a feasible way of increasing pulse intake and improving diet quality. The 200 grams of garbanzo beans did provide 162 additional calories and were pureed and added to soups and desserts in the study.

My colleagues and I compared satiety response between a black bean patty and beef patty.⁵ No differences were found in satiety between the diets, but the bean patty resulted in higher reports of flatulence. Although similar to the above mentioned study, the effect on intestinal gas was mild.

Dry beans and peas are an important protein source and are under-consumed in most countries. The association of beans with intestinal gas may be a deterrent for increased consumption. Increasing interest in the role of the microbiota and positive health outcomes will provide scientific support that fermentation of oligosaccharides and fiber in the colon has positive health benefits. More research on the positive effects of pulses on gut health is needed to move this area forward. 🌱

References

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About the Author

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DBQUICK BITE

Study Shows Positive Effect Of Beans on Weight Loss

The *Journal of Clinical Nutrition* reported that the inclusion of dietary pulses (including dry beans) in a diet may be a beneficial weight-loss strategy because it leads to a modest weight-loss effect even when diets are not intended to be calorically restricted. Future studies are needed to determine the effects of dietary pulses on long-term weight-loss sustainability. This protocol was registered at www.clinicaltrials.gov as NCT01594567.

Dry Bean Quarterly is published four times a year by the Northarvest Bean Growers Association. An electronic version of this newsletter, with complete references, can be found at www.BeanInstitute.com.

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2016 DBQ Readership Survey

To take the survey on-line, please visit www.BeanInstitute.com/survey

- On a scale of 1 to 10, with 10 being highest or best, how would you rank dry beans in terms of the nutritional value they offer your clients and patients?
(lowest) 1 2 3 4 5 6 7 8 9 10 (highest)
- Do you recommend dry beans to your clients or patients? If so, why? If not, why not?
 Yes No Comment _____
- Dietitians often tell us, "We love beans!" What is it, specifically, about beans that makes them an obvious choice for your clients and patients? Please rank your top three reasons among the options below or rank your own specific reasons under "Other." (1 equals your top reason)

___ Nutritional value	___ Taste	___ Cost	___ Health benefits
___ Non-GMO	___ Protein source	___ Gluten-free	___ Fat-free
___ Iron-rich	___ Sodium-free	___ Dietary fiber	___ Vitamins
___ Minerals	___ Disease prevention	___ Nutrients	___ None of the above
___ Other _____			
- Do you read the *Dry Bean Quarterly* newsletter?
 Yes No Comment _____
- After reading *Dry Bean Quarterly*, are you more likely or less likely to recommend beans to your patients and clients?
 More likely Less likely Neither Comment _____
- In regard to dry bean recipes, would you prefer to see recipes for main course entrees for breakfast, lunch, and dinner, like casseroles, soups, wraps, and chili; or for side dishes and snacks, like hummus, bean burgers, brownies, and smoothies? (Please mark one answer.)
 Main course entrees Side dishes and snacks Neither Both
- How many patients and clients do you counsel on average every month? _____
- What would you like to see in future issues of *Dry Bean Quarterly*? _____
- How would you describe your work as a registered dietitian?

<input type="checkbox"/> Hospital/Clinic	<input type="checkbox"/> School nutrition
<input type="checkbox"/> Food industry	<input type="checkbox"/> Private practice
<input type="checkbox"/> Community/Public health	<input type="checkbox"/> Other
- How many years have you worked in the dietetic field?

<input type="checkbox"/> 1-5 years	<input type="checkbox"/> 6-15 years
<input type="checkbox"/> 16-30 years	<input type="checkbox"/> 31 or more years
- Your age: 18-25 26-40
 41-65 66 and better
- Your gender: Male Female Prefer not to answer
- Your state: _____

Your Options:

- Take survey on-line > www.BeanInstitute.com/survey
 Scan and email to > eds@communiquinc.com
 Fax to > 573-635-3810
 Mail to > Dry Bean Quarterly, P.O. Box 237,
 Jefferson City, MO 65102

Smart Choice Recipe

Marinated Black Bean Salad

Ingredients

- 1 (15.5-ounce) can black beans
- 1½ cups cooked brown rice (½ c. dry)
- 2 Tablespoons onion, chopped
- 1½ cups broccoli, chopped

Dressing

- 2 Tablespoons canola or olive oil
- 2 Tablespoons red wine vinegar
- ¾ teaspoon dry thyme
- ¼ teaspoon garlic powder
- 1½ teaspoons dried parsley flakes
- ¼ teaspoon black pepper



PREPARATION

- Drain and rinse black beans. Add brown rice, onion, and broccoli. Gently mix.
- In a small bowl, mix remaining ingredients for dressing.
- Add dressing to bean mixture. Mix gently.
- Refrigerate to allow flavor to develop. Serve chilled.

YIELD: 10 servings

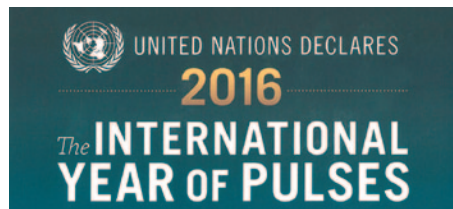
SERVING SIZE: One half cup

NUTRIENT INFORMATION PER SERVING:

Calories: 96; Fat: 3g (5% DV); Carbohydrates: 14g (5% DV); Protein: 3g; Cholesterol: 0g; Fiber: 3g (12%), Sodium: 135mg (6%)



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Check out our new website at www.BeanInstitute.com!

Strong Finish Planned for International Year of Pulses

By Ed Stroesser, DBQ Managing Editor

During the first half of the International Year of Pulses (IYP) 2016, we saw events take place around the world—from England to South Africa and from Zambia to Jordan. Organizers plan a strong conclusion to the year-long celebration of dry beans and other pulses.

We have included websites and an event calendar below, so that you can catch some of the excitement of the IYP. We invite you to let us know of any events you have participated in this year to celebrate dry beans and the International Year of Pulses. 

The General Assembly of the United Nations in New York proclaimed the **International Year of Pulses 2016** in hopes of raising the profile of pulses within the Food and Agriculture Organization (FAO). An “International Year” designation provides an unprecedented opportunity to raise awareness of pulses and to celebrate the role of dry beans, lentils, and other pulses in feeding the world.

International Year of Pulses 2016 Upcoming Events

July 1–2

Carnival of Pulses
Hyderabad, India

Sept. 12–14

Australian Pulse Conference
Tamworth, Australia

Oct. 13

Japan Beans Day Festival
Tokyo

Oct. 25

Canadian Pulse Research Workshop
Winnipeg, Manitoba

Nov. 1

International Conference on Legume
Genetics and Genomics
Jining, China

Dec. 1

FAO IYP Closing Event
Rome, Italy

Websites of Interest

www.IYP2016.org—International Year of Pulses 2016

www.FAO.org—UN Food and Agriculture Organization (FAO)

www.crops.org

www.BeanInstitute.com

Pulses vs. Dry Beans— What’s the Difference?

Pulses are a sub group of the legume family. The term “legume” refers to plants whose fruit is enclosed in a pod, but the word “pulse” refers only to the dry seed. Dry beans, lentils, and peas are the most commonly known and consumed pulses.

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