



## NUTRITION CONNECTION

# PLANT-BASED PROTEINS

## FOR NUTRITION & OPERATIONAL BENEFITS

BY KRISTIN KLINEFELTER, MS, RDN, LDN

**WHEN YOU HEAR THE TERM 'PLANT-BASED PROTEIN,'** what are your first thoughts? After questioning whether it tastes good, your thoughts might include: *My clients will never eat it. The staff will need training. This is a trend that will pass.*

You may already have plant-based proteins in your meal rotations, or it might be hard to wrap your mind around implementing them. Perhaps you eat plant-based meals at home, but feel like they would not go over well in your operation. Wherever you fall on the plant-based protein thought process and implementation, starting the process might benefit your clients' nutritional health and your operation in several ways.

Before reviewing statistics, nutrition facts, and fiduciary information, let's refresh our vocabulary:

- **Vegetarian:** One who does not consume meat, fish, seafood, pork, or poultry
- **Lacto-Ovo Vegetarian:** Consumes dairy milk and eggs, but not meat
- **Flexitarian:** Consumes a mostly vegetarian diet, but occasionally eats meat or fish
- **Pescatarian:** One whose diet includes fish, but no other meat
- **Lacto-Vegetarian:** Consumes milk, but no other animal products
- **Ovo-Vegetarian:** Consumes eggs, but no other animal products

- **Vegan:** Consumes all plant-based foods and no animal products

People choose to follow vegetarian or vegan lifestyles for various reasons. Animal rights and welfare, personal health concerns—especially with eating red meat—and care for the environment are reasons people cite for avoiding eating animal proteins.

According to Global Data, 6 percent of the U.S. population claimed to be vegan in 2017, compared to 1 percent in 2014. The Harris Poll found that 4 percent of the U.S. population claims to be vegetarian or vegan. What about the possibility of partially adapting a vegetarian/vegan lifestyle, or simply trying to eat less meat to improve our health? Is it for you personally? Can your clients and business operations benefit from an occasional menu substitution?

When considering modifications to your menu that include less animal and more plant-based proteins, it may be helpful to review the health and nutritional benefits that we get from animal proteins, in an effort to replace them with items of similar nutritional value. Here are some key nutrients we get when consuming animal proteins:

### Protein

There are typically 8 grams of protein per ounce of meat, fish, poultry, or eggs. Dairy milk has 8 grams of protein per 8 oz. Chickpeas come in at 20 grams per ½ cup,

THIS CE ARTICLE IS SPONSORED BY





while ½ cup of edamame provides 11 grams of protein. The reference from Today’s Dietitian is helpful for staff and clients to compare protein content of common foods. Protein is essential for our immune system, tissue building and repair, hormone production, and energy. The average person should consume .8-1.2 grams of protein per kilogram (kg) body weight. For example, a 220 pound person should consume about 100 grams of protein daily. It is possible for a person to consume adequate protein by eating plant-based proteins only. However, with protein, quality makes a difference. The protein digestibility-corrected amino acid score (PDCAAS) is a method of evaluating the quality of a protein based on the amino acid requirements of humans and their ability to digest it (Wikipedia). The PDCAAS scores protein quality of cow’s milk, eggs, and soy protein at the highest score of 1 and chickpeas come in with a score of .78.



**UNDERSTANDING THE IMPLICATIONS OF PLANT-BASED PROTEINS** might benefit your clients’ nutritional health and your operation in many ways.

### Vitamin B12

Vitamin B12 is only found in animal products (with the exception of nutritional yeast and fortified nut milks). B12 is essential for our brain and nervous systems, red blood cell development, energy, and metabolism. It is recommended that vegans take B12 supplements daily.

### Calcium

Dairy milk, cheese, and yogurt are the top sources of dietary calcium, which is essential for bone and heart health. One cup of milk provides 300 mg of calcium and is fortified with Vitamin D for optimal absorption. Most people need 800-1500 mg of calcium per day, depending on their age and sex.

### Iron

Iron carries oxygen to the blood and is found in many food sources, both animal and plant-based. However,

heme iron is found in red meat and is a high-iron source providing optimal benefit.

**NUTRITIONAL BENEFITS OF REDUCING INTAKE OF ANIMAL PROTEINS**

**Less Saturated Fat**

Animal fat is mostly saturated, the type of fat that promotes atherosclerosis (clogging of arteries). It is recommended that most people limit saturated fat intake to less than 10 percent of their daily calories, or about 22 grams of saturated fat.

**Less Dietary Cholesterol**

Recent evidence has not linked intake of dietary cholesterol with increased risk for cardiovascular diseases (Soliman). In fact, the Dietary Guidelines for Americans has removed the cholesterol limitation from their recommendations. Because many foods that contain high amounts of dietary cholesterol are also high in saturated fat, we might still want to reduce our intake of these foods. Dietary cholesterol is only found in animal products.

**More Fiber**

In many cases, plant-based proteins are also high in fiber, which is helpful for gastrointestinal health, reduced risk of cardiovascular disease, and obesity. It is recommended that men eat 30-38 grams of fiber, and women eat 21-25 grams of fiber each day.

**BENEFITS OF A PLANT-BASED MENU TO YOUR OPERATION**

**Reduced Food Cost**

Let’s compare a 3-oz ground beef burger with a 3-oz black bean burger, both made from scratch, in-house.

The average 80/20 ground beef price (as of Feb 2022) is \$5.17 per pound. Considering a 25 percent shrinkage, that is 12 oz for \$5.17 or \$1.29 for the 3 oz homemade beef patty.

Using the recipe below, the cost of a homemade black bean burger is about \$.50 per serving. The buns, condiments, and toppings are not included in this cost comparison. If you serve 150 people, this is a meal cost savings of \$118.50. Swapping out a traditional animal protein for a plant-based protein just once per week could save your operation \$474 per month.

You may also find a cost savings if you purchase premade beef or black-bean burgers from your foodservice vendor, but the savings are not as significant.

**Reduced Risk of Food Safety Hazards**

As your food safety brain knows, fresh or frozen meat is a potentially

hazardous or TCS food, and we need to follow our HACCP plans to prevent foodborne illness. Many plant-based proteins are shelf stable and low risk.

**Lower Cold Storage and Utility Costs**

All animal proteins must be properly held in coolers or freezers and be monitored for safe temperatures at all times.

Many plant-based proteins can be stored in dry storage, which reduces utility costs of refrigeration/freezing.

**Availability**

Keeping a stock of dried or canned beans and other plant-based proteins can be part of your emergency plan. These products can be available at all times in case of emergency or delivery delays.

**MANY PLANT-BASED PROTEINS ARE HIGH IN FIBER.**

It is recommended that men eat 30-38 grams of fiber, and women eat 21-25 grams of fiber each day.

	<b>3-oz Beef Burger Patty (80/20) Made from scratch</b>	<b>3-oz Black Bean Burger Made from scratch</b>	<b>Commercial Beef Burger Frozen</b>	<b>Commercial Black Bean Burger Frozen</b>
<b>Cost (Per 24 grams of protein)</b>	\$1.29	\$.50	\$1.78	\$1.69
<b>Saturated Fat</b>	6.5 grams	0 grams	6 grams	.5 grams
<b>Fiber</b>	0 grams	4.5 grams	.5 grams	4 grams

## BLACK BEAN RICE BURGERS—INGREDIENTS

8 Servings	64 Servings
1 cup Cooked rice (whole grain or wild)	8 cups Cooked rice (whole grain or wild)
15 oz. Canned black beans (drained)	8 cups or 1, #10 can Canned black beans (drained)
1/2 cup Panko	4 cups Panko
1/4 cup Chopped yellow onion	1 cup Chopped yellow onion
1/4 cup Chopped yellow pepper	1 cup Chopped yellow pepper
1 Tbsp. Minced garlic	1/2 cup Minced garlic
1 tsp. Cumin	1.5 Tbsp. Cumin
1 tsp. Thyme	1 Tbsp. Thyme
1/2 tsp. Paprika	1.5 Tbsp. Paprika
1/2 tsp. Salt	1.5 Tbsp. Salt
1 Egg	8 Eggs

## BEAN BURGER FORMULA



Start With	Pick 2-4	Pick 1	Pick 1	Pick 1-2	Pick 2-4	Pick 1
Staples +	Veggies (chopped) +	Beans +	Grain +	Emulsifier +	Spice +	Dry Base
<ul style="list-style-type: none"> <li>• Yellow onion, chopped</li> <li>• Garlic, chopped</li> <li>• Salt</li> <li>• Cooking oil</li> </ul>	<ul style="list-style-type: none"> <li>• Artichokes</li> <li>• Beets</li> <li>• Bell peppers</li> <li>• Broccoli</li> <li>• Carrots</li> <li>• Cauliflower</li> <li>• Corn</li> <li>• Yellow onion</li> <li>• Sweet potatoes</li> <li>• Mushrooms</li> <li>• Squash</li> <li>• Spinach</li> <li>• Zucchini</li> </ul>	<ul style="list-style-type: none"> <li>• Black beans</li> <li>• Black-eyed peas</li> <li>• Cannellini beans</li> <li>• Chickpeas</li> <li>• Kidney beans</li> <li>• Lentils</li> <li>• Soybeans</li> </ul>	<ul style="list-style-type: none"> <li>• Buckwheat</li> <li>• Bulgur</li> <li>• Millet</li> <li>• Quinoa</li> <li>• Rice</li> <li>• Spelt</li> <li>• Wild rice</li> </ul>	<ul style="list-style-type: none"> <li>• Avocado, mashed</li> <li>• Chia seeds</li> <li>• Egg (1)</li> <li>• Flax seeds</li> <li>• Herbs, chopped (cilantro, chives, dill, parsley, thyme)</li> <li>• Nut butter</li> <li>• Nuts, chopped</li> <li>• Tahini</li> </ul>	<ul style="list-style-type: none"> <li>• Black pepper</li> <li>• Cayenne powder</li> <li>• Chili powder</li> <li>• Cinnamon</li> <li>• Curry powder</li> <li>• Fennel</li> <li>• Italian blend</li> </ul>	<ul style="list-style-type: none"> <li>• Almond meal</li> <li>• Bread crumbs</li> <li>• Cornmeal</li> <li>• Oatmeal, ground</li> <li>• Panko</li> </ul>
8 Servings	1 cup (Pick 2-4*)	1-1/2 cups or 1 can Beans or Legumes (Pick 1)	1 cup (Pick 1) (Cook grain according to instructions)	1/2 cup (Pick 1-2*)	1 Tbsp. (Pick 1-3*)	1/2 cup
64 Servings	8 cups (Pick 2-4*)	12 cups or #10 can	8 cups	4 cups (Pick 1-2*)	1/2 cup (Pick 1-3*)	4 cups

\* Combine to total amount

## BLACK BEAN RICE BURGERS—INSTRUCTIONS

1. Heat oil in skillet.
2. Sauté onion and garlic.
3. Lightly salt onion and garlic to taste.
4. Add yellow pepper to the skillet with onion and garlic. Sauté until tender (7-12 minutes).
5. Transfer onion, garlic, and yellow pepper to food processor.
6. Drain beans and reserve liquid.
7. Add cooked rice, canned beans, panko, cumin, thyme, paprika, and egg to food processor with veggies.
8. Pulse mixture about 8-10 times. (Do not overmix. You want to see the individual ingredients in the patties, yet have uniform patties.)
9. Form patties with 1/3 cup of the mixture. (If the patties crumble, add reserved bean liquid, 1 Tbsp. at a time to the bowl and mix slightly. If they are too wet, add more panko. The patties should be sticky, but not too dry or wet.)
10. Place patties in the cooler/refrigerator for 30-45 minutes before cooking.
11. Cook (on flat top grill, on stovetop over medium heat on oiled pan) for 5-8 minutes each side.
12. Garnish with lettuce, tomato, and sauces of your choice.

### IMPLEMENTING PLANT-BASED ITEMS IN YOUR OPERATION

Perhaps what you have read so far has piqued your interest. How can you go about implementing plant-based options in your operation? As always, it can be a good thing to engage your clients. Offering taste testing or product comparisons is a logical start. Challenging the beef burger with the black bean burger in a taste test might be fun. You can ask participants to rank the flavors and compare the nutritional value for their health.

Not sure where to find ideas that your clients will love? Looking at restaurant menus for vegetarian items can be helpful. Simply browsing Pinterest or cooking blogs can spark inspiration, followed by putting your foodservice hat on to expand the recipe. If you want to get serious about your plant-

based cooking, there is an online class for that! Rouxbe online culinary school offers a 60-day course that will bring your chef skills to a new level.

#### Simple Meal Implementation Ideas

- Add grain bowls to salad bars.
- Use nuts and beans in salads vs. eggs, cheese, and bacon.
- Serve sweet potato chili in winter months.
- Make smoothies with almond milk.
- Put “Meatless Mondays” on your dinner menu.
- Add edamame to salads or grain bowls.
- Use spiced black beans in tacos.
- Serve hummus on pita bread with a Greek salad.

- Offer peanut butter sandwiches, which can be a hit with all age groups.

#### SUMMING IT UP

An individual or operation does not need to completely adopt a vegan or vegetarian lifestyle to occasionally enjoy the flavors and benefits of plant-based meals. Whether you want to embark on the quest for the perfect vegan burger or simply sneak in some plant-based proteins from time-to-time, enjoy the journey! 🍎



#### REFERENCES

Scan QR code to view the list of resources for this article.



KRISTIN KLINEFELTER, MS, RDN | ✉ [eatsmart@paulbunyan.net](mailto:eatsmart@paulbunyan.net)

Kristin Klinefelter orders plant-based burgers in every restaurant that she can, making attempts to recreate them at home. She has been working in the nutrition and dietetics field since 1998 in various capacities. If you ever visit Northern Minnesota, she has suggestions for amazing Wild Rice Burgers in many restaurants.

# ANFP Fall Regional Meeting

September 15-16

Learn more at [www.ANFPonline.org/2022Spokane](http://www.ANFPonline.org/2022Spokane)



Take advantage of this in-person learning opportunity! Join us in Spokane to discover new techniques to tackle foodservice challenges, strengthen your leadership skills, & network with fellow industry professionals!



## MAKE YOUR CE HOURS AUDIT PROOF

**ATTENTION CDM, CFPPs!** Purchase your online CE products in the ANFP Marketplace and your completed CE hours will be automatically reported in your continuing education record. This includes all ANFP online courses, archived webinars, and online CE articles.

## CE QUESTIONS | NUTRITION CONNECTION



This **Level II** article assumes that the reader has a thorough knowledge of the topic. The desired outcome is to facilitate application of knowledge into practice by drawing connections among ideas and using information in new situations.

**CBDM** ●●●●  
continuing competence  
where education advances performance

Reading *Plant-Based Proteins for Nutrition & Operational Benefits* and successfully completing these questions online in the ANFP Marketplace has been approved for 1 hour of continuing education for CDM, CFPPs. To earn 1 CE hour, visit [www.ANFPonline.org/market](http://www.ANFPonline.org/market) and select **Edge CE Articles** within the Publications section. Purchase the article and complete the quiz.

1. What is the term for a person who mostly follows a vegetarian lifestyle, but eats meat and eggs occasionally?
  - A. Vegan
  - B. Flexitarian
  - C. Vegetarian
2. According to Global Data, what percentage of people said they were vegan in 2017?
  - A. 6 percent
  - B. 10 percent
  - C. 12 percent
3. It is possible for a vegan to get enough protein.
  - A. True
  - B. False
4. Operational benefits of implementing plant-based proteins occasionally include:
  - A. Reduced utility costs
  - B. Reduced food costs
  - C. Both A and B
5. Nutritional benefits of implementing plant-based proteins occasionally include:
  - A. Increased fiber intake
  - B. Reduced saturated fat intake
  - C. Both A and B
6. Which plant-based food has a perfect score on the PDCAAS?
  - A. Chickpeas
  - B. Peanuts
  - C. Soy
7. Which nutrient should a vegan supplement daily?
  - A. Iron
  - B. Calcium
  - C. Vitamin B12



### SAVE 20% ON THIS CE ARTICLE



Welch's is generously sponsoring this article so ANFP members can earn 1 GEN CE hour at **20% off** through **May 10, 2023**. You must log into the ANFP Marketplace and access the online CE quiz there for this members-only offer. Follow the directions on the quiz above to access your discounted CE hour for reading **Plant-Based Proteins for Nutrition & Operational Benefits**.