



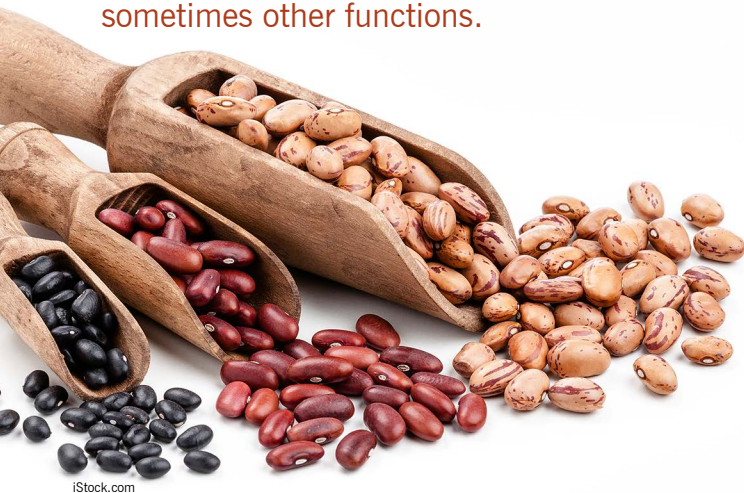
Pressure Cook Dry Beans to Save Money and Time

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Dry beans are an excellent source of plant-based protein, fiber and several other nutrients. Dry beans can be used in a variety of ways on your menu, and they are affordable at about 15 cents per serving. However, sometimes people shy away from using budget-friendly beans in their dry state because of the time required for soaking and cooking.

Pressure cookers can speed the preparation time for dry beans. While traditional soaking and cooking dry beans on a stove may require hours of preparation time, 1 pound of dry beans can be prepared in less than an hour in a pressure cooker.

Pressure cookers, or electric multicookers, have become very popular. These countertop appliances may include the following functions: sautéing/browning, pressure cooking, rice cooking, slow cooking, warming, yogurt-making, and sometimes other functions.



Cooking Beans in a Multicooker/Pressure Cooker

Review the manufacturer's instructions that accompanied your multicooker because brands vary in their functions.

- Sort 1 pound (2 cups) of dry beans to remove any split beans or small stones that may be in the bag. Rinse.
- Use one of the following soaking methods. Use filtered water if your water is hard to soften beans during soak. Consider adding some salt to the soaking water to form a brine solution.
 - **Hot soak:** For every 2 cups of dry beans, add 10 cups of hot water in a stockpot. Boil for two to three minutes and allow to soak for up to four hours.
 - **Quick soak:** For every 2 cups of dry beans, add 6 cups of water in a stockpot. Boil for two to three minutes and allow to soak for at least one hour.
 - **Traditional soak:** For each 2 cups of dry beans, add 10 cups of water and let soak overnight or for at least eight hours *in the refrigerator*.
- Drain beans and rinse thoroughly. Place beans in pressure cooker and cover with about 4 cups of fresh water. Water should be about 2 inches above the beans. Optionally, add 1 teaspoon or to taste of salt if you want extra flavor in your beans.
- Seal pressure cooker according to the manufacturer's instructions. Press manual and set to high pressure. Adjust times as needed. Cooking longer will yield softer beans.
- Approximate pressure cooking times:
 - Black beans: 20 to 30 minutes
 - Pinto beans: 15 to 20 minutes
 - Navy beans: 25 to 35 minutes
 - Kidney beans: 20 to 30 minutes
 - Garbanzo beans: 15 to 25 minutes
- Allow 20 minutes for natural pressure release after cooking. If beans are not quite tender, cook them again on high pressure for 10 minutes and then quick release the pressure. Drain immediately.

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Cooks' Notes

- The methods we used are detailed in the recipes provided in this handout. In some cases, the beans were soaked prior to cooking, and in other recipes, they were not. In our cook tests, we used 6-quart capacity pressure cookers from three different brands (Cuisinart, Fagor and Instant Pot). In most cases, we found that pre-soaking the beans was not necessary. The pre-soaked beans split and bubbled more. You may need to experiment to determine the optimum recipe and process with your pressure cooker model.
- For dry kidney beans, we added salt during the soaking process, followed by rinsing.
- When soaking beans for longer than four hours, place the container in the refrigerator for safety. Beans may contain bacteria that can grow to harmful levels or produce a toxin if they remain at room temperature too long.

Pressure Cooker Tips



While cooking dry beans in a pressure cooker is a fairly simple process, they do have a tendency to froth and foam during cooking. Therefore, using the following guidelines is necessary when pressure cooking dry beans:

- Never fill the pressure cooker more than the half full line. This includes beans, ingredients and water.
- Pressure cookers must contain a minimum amount of liquid to operate correctly. See manufacturer's directions.
- You may add 1 to 4 tablespoons of vegetable oil and up to 1 tablespoon of salt to 1 pound of beans during soaking or cooking. Tests have shown that when oil and salt are added, dry beans keep their shape and exterior skin intact, and froth and foam less during pressure cooking.

Yield: 1 pound (2 cups) of dry beans makes about 6 cups of cooked beans. One 15-ounce can of beans is about 1¾ cups of beans drained.

Beans, Beans ... Gas-reducing Tips

Some people may be hesitant to increase beans in their diet due to the fear of intestinal gas and stomach discomfort, including increased flatulence. Certain nondigestible carbohydrates, termed oligosaccharides, are responsible.

Try these tips to reduce the occurrence of intestinal gas when eating beans:

- Increase beans in your diet slowly. For example, you may start by eating 2 to 4 tablespoons of beans per day, and gradually increase each day.
- Drink more water each day as you eat more beans (or other fiber-containing foods).
- Use the hot soak method when preparing dry beans. The longer beans soak, the more you will reduce the amounts of the gas-producing compounds.
- Change the water several times when soaking dry beans, and discard this water when soaking is completed. Many of the gas-causing carbohydrates are released into this soaking water.
- Rinse canned beans without sauce (such as kidney, navy, Great Northern) before eating or using in recipes.
- Consider using a gas-reducing enzyme tablet. These tablets are available over the counter in many pharmacies.

On the Menu: Beans!

How do you start eating more beans and reaping the many health benefits? Adding more beans to your daily diet can be as easy as adding them to the foods you already enjoy. Beans have a neutral flavor. Here are a few ideas for adding beans to your diet:

- **Main dishes:** Add beans to chili, burgers and rice for a satisfying entrée. Or try replacing the meat in recipes with beans, such as a bean enchilada or black bean and cheese quesadilla.
- **Side dishes:** Baked beans or a bean salad would make a great addition to any meal.
- **Salads:** Add beans to salads for added nutrition, color and texture.
- **Pasta:** Adding beans to pasta dishes will provide another dimension of flavor and boost the appearance of the dish.
- **Soup:** Pureed beans can be used to replace cream or higher-fat ingredients.
- **Dips and spreads:** Bean dips and spreads make a great snack or appetizer.
- **Baked goods:** Replace all or part of the fat ingredients with mashed or pureed beans in foods such as brownies and cookies. Beans will give the baked items additional protein and fiber and reduce fat, cholesterol and calories.

Recipes

Key to abbreviations

qt. = quart
lb. = pound
c. = cup

oz. = ounce
Tbsp. = tablespoon
tsp. = teaspoon

g = gram
mg = milligram

These recipes were tested using electric multicookers.



Classic Chili

- 1 c. pinto beans, dry
- ½ c. kidney beans, dry
- 4 qt. water plus 3 Tbsp. salt (for soaking beans)
- 2 Tbsp. olive oil
- 1 lb. ground beef, lean
- 2 c. fresh onion, chopped
- 1 red bell pepper, chopped
- 2 tsp. garlic, minced
- 2 Tbsp. chili powder
- 1 Tbsp. oregano, dry, crushed
- 1 Tbsp. cumin
- ½ tsp. salt or to taste
- ½ tsp. black pepper
- ⅛ tsp. cayenne pepper
- 4 c. beef broth, reduced-sodium
- 1 can (14-oz.) diced fire roasted tomatoes
- 1 can (6-oz.) tomato paste
- Optional toppings: sour cream, shredded cheddar cheese, chopped red onions, corn, diced avocado or tortilla chips

Two hours prior to cooking, place beans in 4 quarts of water with 3 tablespoons of salt and allow the beans to soak for at least two hours. After two hours, drain and rinse beans. On the sauté setting, heat oil in the bottom of the pot; brown ground beef. Rinse then prepare vegetables as shown. Stir in onion, bell pepper and garlic; sauté until onion is soft, about two minutes. Add chili powder, oregano, cumin, salt, black pepper and cayenne pepper, and stir until fragrant, about one minute. Stir in broth, diced tomatoes, tomato paste and beans. Pressure cook for about 20 minutes and then allow a natural pressure release for 20 minutes. Release any remaining pressure and remove lid. Cook chili on sauté setting until it thickens, stirring frequently, about five minutes. Serve with your choice of toppings.

Makes 12 (1-cup) servings. Each serving has 200 calories, 5 g fat, 24 g carbohydrate, 7 g fiber and 420 milligrams sodium.



7-Bean Vegetarian Soup

- ½ c. navy beans, dry
- ½ c. black beans, dry
- ¼ c. pinto beans, dry
- ¼ c. kidney beans, dry
- ¼ c. black-eyed peas, dry
- ¼ c. red lentils, dry
- ¼ c. green lentils, dry
- 1 Tbsp. olive oil
- 4 carrots, chopped
- 4 celery stalks, chopped
- 1 large onion, chopped (about 1½ c., chopped)
- 1 Tbsp. garlic, minced
- 8 c. low-sodium vegetable broth
- 1 tsp. salt
- ½ tsp. black pepper
- ½ Tbsp. thyme, dry
- ½ tsp. sage, dry
- 1 (14-oz.) can diced tomatoes
- 2 bay leaves
- 1 c. kale, chopped

Turn the pressure cooker to sauté function. Add oil and heat until the oil shimmers. Rinse then prepare vegetables as directed. Sauté carrots, celery, onion and garlic until softened and translucent. Add remaining ingredients except kale and cover with the lid seal to lock. Press the manual pressure cook button and set the timer to 20 minutes. Let the pressure release naturally for 10 to 15 minutes. Release any remaining pressure and remove cover. Add kale and cook for five more minutes. Then remove the bay leaves and serve.

Makes 11 (1-cup) servings. Each serving has 170 calories, 2 g fat, 9 g protein, 30 g carbohydrate, 7 g fiber and 360 mg sodium.



Boston Baked Beans

- 1 lb. Great Northern beans, dry
- 8 c. water
- 1/3 c. molasses
- 1/3 c. brown sugar
- 3 Tbsp. Dijon mustard
- 8 oz. bacon, cut into half-inch pieces
- 1 medium onion, diced

Combine the beans and water in an electric pressure cooker. Secure the lid and set on manual; cook for 20 minutes. Allow a natural pressure release, about 15 minutes, then release any remaining pressure. Beans should be mostly cooked through but still firm. Save 1 1/2 cups of liquid and set it aside. Lift the hot inner pot out of the pressure cooker and drain the beans into a colander in the sink carefully to avoid burning yourself. Wash the pot and return it to the pressure cooker. In a small bowl, whisk together the molasses, sugar, mustard and reserved bean cooking liquid. Set aside. Turn the pressure cooker to sauté and add the bacon. Sauté until some fat is in the bottom of the pot, about five minutes. Then add onion and sauté until it is translucent, about five more minutes. Stir the beans and the seasoning liquid into the pot with the bacon and onions. Secure the lid on the pressure cooker and set manually for 15 minutes. After cooking is complete, allow pressure to release naturally. Serve.

Makes 15 (1/2-cup) servings. Each serving has 210 calories, 6 g fat, 9 g protein, 29 g carbohydrate, 6 g fiber and 150 mg sodium.



Red Beans and Sausage

- 1 lb. kidney beans, dry
- 4 qt. water plus 3 Tbsp. salt
(for soaking beans)
- 1 Tbsp. olive oil
- 1 lb. andouille sausage, thinly sliced
- 1 large onion, chopped (about 1 1/2 cups)
- 1 green pepper, diced
- 2 celery stalks, diced
- 3 cloves garlic, minced
- 2 tsp. kosher salt
- 1 1/2 tsp. fresh sage, chopped
- 1/2 tsp. ground black pepper
- 1/4 tsp. cayenne pepper
- 3 bay leaves
- 6 c. water

Two hours prior to cooking, place dry kidney beans into 4 quarts of water with 3 tablespoons of salt. After soaking, drain and rinse the beans. Press the sauté button on an electric pressure cooker and add 1 tablespoon oil to pot. Add sliced sausage and sauté for about five minutes or until browned. Add onion, green pepper, celery stalks, garlic, salt, sage, pepper and cayenne pepper until onions turn soft and clear. Turn off sauté mode and add remaining ingredients to pot and stir. Select manual and set to 40 minutes at high pressure. After cooking, allow pressure to release naturally about 20 minutes. Release any remaining pressure and remove lid. Remove bay leaves. Serve over brown rice.

Makes 12 (1-cup) servings. Each serving has 240 calories, 9 g fat, 16 g protein, 26 g carbohydrate, 10 g fiber and 680 mg sodium.



Refried Beans

- 16 oz. pinto beans, dry
- 1 1/2 c. onion, diced
- 7 c. low-sodium vegetable broth
- 6 oz. can green chilies, undrained
- 1 1/2 tsp. seasoned salt
- 2 Tbsp. apple cider vinegar
- 1 tsp. Tabasco sauce

Place all ingredients in a pressure cooker and stir until combined. Close the lid and set to high pressure for 60 minutes. Allow pressure to naturally release for 15 minutes, then release the remaining pressure. Remove lid and turn off cooker. Stir mixture and then drain, reserving some liquid for blending. Blend beans, adding liquid as needed to reach desired consistency. Serve immediately.

Makes 16 (1/2-cup) servings. Each serving has 220 calories, 0 g fat, 12 g protein, 40 g carbohydrate, 5 g fiber and 860 mg sodium.



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See NDSU Extension's Field to Fork website at www.ag.ndsu.edu/fieldtofork and click on "Dry Beans" to learn more. See the NDSU Extension publication "All About Beans" for more information and research summaries about beans.

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