

## **Nutrition Notes: The Sensational Seven Complete Proteins from Whole Grains and Seeds**

### Are You New to Whole Grains and Seeds?

Organic, non GMO, whole grains, seeds and legumes are all excellent sources of protein that can help you with decreasing animal products (meat, fish, poultry, eggs and cow dairy) in your diet. This is especially important if you are trying to eat a more alkaline, anti-inflammatory diet. Protein is required for nitrogen and amino acids (AA). Some amino acids are called essential because the body cannot make them. AAs are the building blocks of muscle, skin, connective tissue and almost every other cell in the body. The whole grains and seeds also contain good amounts of fibre, vitamins, minerals, omega-3 and omega-6 essential fatty acids.

Food sources of complete proteins (the sensational seven) containing all 9 essential amino acids (EAAs) are organic: quinoa, millet, chia seeds, shelled hemp hearts, buckwheat, brown rice and wild rice.

Complimentary grains and legumes, are foods that when they are eaten within the same 24 hour period, give you all 9 essential amino acids (EAA) where each food contributes some of the EAAs. The 9 EAAs are phenylalanine, valine, threonine, tryptophan, methionine, leucine, isoleucine, lysine and histidine. There are also 6 conditionally essential amino acids arginine, cysteine, glycine, glutamine, proline and tyrosine.

Some researchers are proposing that there are actually 11 EAAs. Some examples of complimentary protein foods are combining brown rice and beans, black beans and corn, chickpeas and couscous, or adding nuts and seeds to grains. Research has now shown that these EAAs do not have to be eaten all at the same meal, just within a 24 hour period. Check the publication date when using older vegetarian cookbooks that may insist the complimentary proteins must all be eaten at the same meal.

Just because the body can make other amino acids, does not mean that it does. If there are nutritional deficiencies or absorption problems, the body may not have the minimum building blocks to make these other amino acids. It is good to eat a wide variety of proteins to avoid deficiencies.

If you are trying to go gluten free, you can substitute cooked quinoa or millet for cooked couscous in recipes and get a similar texture and quantity of the finished recipe. This article focuses on foods that do contain all 9 EAAs. They are all complete proteins. The sensational seven!

### Preparation (for 2 servings)

Allow 2 servings per person since most people consume that amount in a meal. Multiply the recipe for the number of people being served. These foods count as both protein and carbohydrate. Keep the carbohydrate property of vegetables and fruits in mind when planning which other foods to prepare for the same meal. With buckwheat you may only desire 1 serving.

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### Recipes

Quinoa (KEEN-wah) is the seed of *Chenopodium quinoa* wild.

½ cup or 125 ml red, black or white quinoa  
1 cup or 250 ml water

Bring to a boil, reduce heat and simmer for 10-12 minutes. Remove from heat. Let stand for 10 minutes. Fluff with a fork. This will make 1 cup or 250 ml of cooked quinoa. Adding more water or cooking it longer tends to make it mushy and it loses the texture of individual grains. Alternatively you can soak quinoa in water overnight. This is very handy when camping or during power outages.

Millet *Pennisetum glaucum* (pearl), *Eleusine coracana* (red or finger), *Setaria italic* (foxtail) or *Penicum miliaceum* (white proso).

1/2 cup or 125 ml millet  
1-1/2 cups or 375 ml water  
pinch of sea salt

Bring to a boil, reduce heat and simmer for 12-15 minutes. Remove from heat. Let stand for 5 minutes. Fluff with a fork. This will make 1-3/4 cups or 440 ml cooked millet. Adding more water or cooking it longer tends to make it mushy and it loses the texture of individual grains.

Wild Rice *Zizania aquatic* and *Zizania palustris* (northern wild rice) is actually the seed of a native North American wetland grass, not a type of rice.

1/2 cup or 125 ml wild rice  
1 cup or 250 ml water  
1/8 teaspoon or 2 ml sea salt

Bring to a boil, reduce heat and simmer for 45 minutes until most of the wild rice has split and is tender. Remove from heat. Let stand 5 minutes. This will make a bit more than 1-1/2 cup or 375 ml cooked wild rice.

Many people prefer to add wild rice to other grains to enjoy the chewy texture without being overwhelmed by it. Other people prefer wild rice mixed into other grains or vegetables and herbs instead of by itself.

Uncooked wild rice can be popped like popcorn in a pan.

Chia Seeds a member of the mint family, *salvia hispanica* L. (mottled brown, gray, black and white), also *salvia columbariae* (golden chia). 1 ounce (2 tablespoons) of chia seeds have 4 g of protein and 11 g of fibre. Yes these are the same seeds as chia pets.

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Add 1 tablespoon of chia seeds to a smoothie, sprinkle over salad, cereal, yogurt, vegetables or grains. Bake into energy bars or granola. Use as a thickening agent for sauces.

Chia seeds sprout very quickly and can be enjoyed as you would any other fresh, green sprout.

For an egg substitute, mix 2 teaspoons or 10 ml chia with 2 tablespoons or 30 ml of water.

Hemp Hearts or Shelled Hemp Seeds Cannabis sativa L. (not the hallucinogenic kind of cannabis). 30 g hemp hearts have 10g of protein.

Shelled hemp seeds are ready to eat out of the package.

Add 1 tablespoon to a smoothie, sprinkle over salad, vegetables or grains.

Brown Rice can be long grain, short grain, medium grain, or basmati. 1 cup of cooked brown rice has 5 g of protein.

1/2 cup or 125 ml brown rice  
1 cup or 250 ml water  
Pinch sea salt

Bring to a boil, reduce heat and simmer for 30-40 minutes until most of the rice is tender. Remove from heat. Let stand 5 minutes. This will make a bit more than 1-1/2 cups or 375 ml of cooked rice.

Buckwheat fagopyrum esculentum. It's amino acid profile is similar to quinoa. It is used raw, or toasted when it is called kasha.

1/2 cup or 125 ml buckwheat  
1-1/2 cup or 250 ml water  
Pinch sea salt

Bring water to a boil first, then add buckwheat or kasha, bring it back to a boil, reduce heat and simmer: kasha for 15-20 minutes, raw buckwheat for 20-30 minutes. Remove from heat. Let stand covered 10-20 minutes. Fluff with a fork. This will make 1-1/3 cups or 330 ml cooked buckwheat. You may want only 1 serving as it is very filling.

### Serving Sizes

- 1/2 cup or 125 ml cooked grain
- 1/2 cup or 125 ml cooked 100% whole grain pasta
- 1/2 cup or 125 ml cooked hot cereal such as steel cut oatmeal
- 1 slice 100% whole grain bread

**Enjoy the SENSATIONAL SEVEN!**

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### Web Sites

You can find a qualified holistic nutritionist at  
<http://www.cahnpro.org/feastofflavour/findanutritionist.html>

Whole Grains Council  
<http://wholegrainscouncil.org/whole-grains-101/what-counts-as-a-serving>

Manitoba Harvest (hemp)  
<http://manitobaharvest.com/>

Canadian Wild Rice  
<http://www.canadianwildrice.com/>

Health Canada Food and Nutrition, Whole Grains  
<http://www.hc-sc.gc.ca/fn-an/nutrition/whole-grain-entiers-eng.php>

Superfoods for Health – Millet  
<https://ontariofresh.ca/news-resources/resources/research-innovation/3197-superfoods-health-millet>

### Suggested Reading

Joy of Cooking, All About Vegetarian Cooking by Irma Rombauer, Marion Rombauer and Ethan Becker, ISBN 0-7432-0209-0

Cooking With Whole Grains edited by Gerald Knox, ISBN 0-696-01317-7

Cooking The Whole Foods Way by Christina Pirello, ISBN 978-1557885173

The Vegetarian's Complete Quinoa Cookbook: From the Ontario Home Economics Association by Marilyn Smith Editor, ISBN 978-1770500976

Quinoa 365: The Everyday Superfood by Patricia Green and Carol Hemming, ISBN 978-1552859940

Millet: The Ultimate Recipe Guide by Jonathan Doue MD, ISBN 978-1495361401

Cooking With Chia by Nicky Arthur, ISBN 978-1742574769

Buckwheat The Ultimate Recipe Guide by Jonathan Doue MD, ISBN 978-1492885788

Ultimate Raw Vegan Hemp Recipes by Kristen Suzanne, ISBN 978-0981755694

Super Seeds: The Complete Guide to Cooking with Power-Packed Chia, Quinoa, Flax, Hemp & Amaranth by Kim Lutz and Stephanie Pedersen, ISBN 978-1454912781