



# Grains of truth about **WHITE WHEAT**

## Definition

There are two types of white wheat - hard white and soft white. Soft White Wheat (SWW) is grown in the Pacific Northwest as well as California, Idaho and Montana. Hard White Wheat was added as a U.S. market class in 1990. White wheat contains the same healthy levels of whole grain fiber that red wheat does but does not have as strong a flavor and dark color. White wheat is actually golden in color, tastes sweeter and is lighter than its hard red wheat cousins.

The differences between the two are found mainly in the end products for which they are used. Soft white has a lower protein level than hard white.

## History



Hard White wheat is relatively new on the agricultural scene. In the late 1960s, researchers at Kansas State University discovered that Kansas had a favorable growing environment for white wheat when compared with other countries around the world. Differences between white and red wheat were found to be negligible with the only exception that early white wheat releases were susceptible to pre-harvest sprouting. It took breeding programs several years to overcome sprouting problems.

Since 1985, KSU breeding programs have worked steadily to develop white wheat selections containing all the necessary traits with the required characteristics.

## Agronomics

White wheat is planted like red wheat, grows like red wheat, yields like red wheat and has the same intrinsic quality factors as red wheat but the difference between red and white wheat is the color of the seed coat.

Hard-white-producing states include: Kansas, Colorado, Nebraska, Oklahoma, Texas, North Dakota, South Dakota, Washington, Idaho, Montana, Wyoming, Utah, Oregon, and California.

Because of dedicated efforts from public and private wheat breeders, new hard white wheat varieties promise strong disease resistance and sprout tolerance with higher yield and improved agronomic packages. Many of these new varieties, which have excellent end-use functionalities, yield as good as or better than hard red wheat (HRW) varieties.

## Availability

Whole-kernel white wheat, whole white wheat flour, bran, bulgur and other products are available. These products may be found in the supermarkets, bulk bin commodity stores, health food stores, elevators, mills and via mail-order or the internet. In the store, it may be found in the produce section, the dry foods section or the specialty food aisle.

There is a strong demand for white wheat from major bakers since the 2005 Dietary Guidelines and new MyPyramid Food Guidance System was released. The new guidelines call for half of all grain servings to be whole grains. Demand for more whole wheat varieties has now soared.

## Uses of White Wheat

Hard White wheat can be used for the same products as hard red wheat. Bakers like it because HWs are excellent for use in the bread-making industry. Because it has a naturally sweeter flavor, bakers can use less sweeteners. International customers prefer it for at least two reasons: 1) higher extraction of white wheat flour while maintaining its bright white color; 2) most white wheat gives better color stability in Asian wet noodles. Hard white wheat is a superior ingredient for all yeast breads, Artisan breads, Asian noodles, tortillas, pizza crusts, breadsticks, flatbreads, quick breads and more.

Soft white wheat is used mainly for bakery products other than bread. Examples include pastries, cakes, and cookies. It is also used for cereals, flat breads and crackers. Both white wheat classes make quality 100% whole wheat products.



## Demand

The goal is to produce what the domestic and export markets want. Users of white whole wheat flour include: large-scale bakers, artisan, “mom-and-pop” bakeries and home bakers.

Domestic bakeries are beginning to develop new white-wheat-based products to meet new MyPyramid guidelines. People who don't eat whole wheat products (from traditional red wheat) usually accept whole white wheat. Higher percentages of whole grain in blended products and/or more frequent servings are often consumed.

The export demand is strong, but wheat farmers must produce more bushels, provide a consistent quality that meets end-user needs, and at an internationally competitive price.

Domestic and international millers receive greater yield of flour per bushel milled. (Hard white wheat yields 1 to 3 percent more flour than red wheat and produces lighter colored products.) That means more of the wheat kernel can be milled to white flour, meeting the same color standard.

## Nutritional value

White wheat and red wheat are nutritionally equivalent. Levels of protein and other nutrients in all wheats vary because of genetic varieties and growing conditions. The differences between red wheat and white wheat are no greater than those between various red wheats today.

## Preparation

- ◆ Rinse whole-wheat kernels before cooking, but do not wash before grinding or milling.
- ◆ Presoaking wheat kernels overnight in the water it is to be cooked in will cut cooking time in half. Proportions should be 3 cups hot water to every 1 cup of kernels. Salt may be used if desired, ¼ to ½ teaspoon salt per each cup of wheat.
- ◆ Cook kernels 20 minutes if presoaked; 45 minutes if not. One cup of wheat kernels yields 2 ½ cups cooked, plump kernels.
- ◆ A slow cooker or crock-pot will work well to cook whole-wheat kernels. Just set on low and cook overnight (about 8 hours), stirring once during the first hour of cooking. Use 2 cups of wheat per 4 cups of water.
- ◆ Cook a large amount of wheat and freeze the kernels in small portions to save time and energy. After cooking, just drain the cooked kernels well and place ½- to 1-cup portions in freezer containers. Thaw kernels by running hot tap water over them in a colander.

## Recipe

### Whole Wheat Muffins

- ½ cup margarine or butter
- ½ cup granulated sugar
- ½ cup light brown sugar
- 1 teaspoon baking soda
- 1 egg
- ¼ teaspoon vanilla
- 1 cup milk, 2% or fat-free
- 2 cups white whole wheat flour



Preheat oven to 400°F. Have ingredients at room temperature. Line a muffin tin using paper baking cups or use cooking spray to coat the bottom of the muffin tin. With electric mixer, cream margarine, granulated sugar, brown sugar and baking soda together; scraping bowl with spatula.

In a small bowl, using a fork, beat together the egg and vanilla; add to creamed mixture. Beat until light and fluffy. Add the milk to the creamed mixture. Gradually add the whole wheat flour and lightly stir the ingredients together so dry ingredients are barely moistened. Over mixing will make the muffins tough and form tunnels.

Fill muffin tins 2/3 full and bake 15 to 17 minutes or until browned and done. Remove from muffin tin and cool on wire rack.

**Servings:** 12 muffins    **Calories/Serving:** 231  
**Nutrition:** One muffin provides approximately: 231 calories; 5 g protein; 34 g carbohydrates; 9 g fat (1 saturated); 19 mg cholesterol; 3 g fiber; 14 mcg folate; 1 mg iron; 120 mg sodium.

**Source:** Kansas Wheat and Farmers Direct Foods

To learn more about white wheat, please visit these websites: [www.kswheat.com](http://www.kswheat.com); [www.k-state.edu](http://www.k-state.edu); [www.uswheat.org](http://www.uswheat.org).

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