

Whole Wheat Breadstick

Bread/Grain

Iowa Gold Star Recipe

Recipe Source: USDA B16 Modified by KSDE April 2008

Ingredients	100 Servings		____ Servings		Directions
	Weight	Measure	Weight	Measure	
White whole wheat flour	3 lbs 12 oz				<ol style="list-style-type: none"> Place flour, dry milk, sugar, yeast and salt in mixer bowl. Blend with dough hook for approximately 2 minutes on low speed. Add oil and blend for approximately 2 minutes on low speed. Add first amount of water to the dry ingredients. If dough appears too stiff, add up to 1 cup extra water per 100 servings. More or less water can be added as needed. Knead dough on medium speed for 8-10 minutes until dough is properly developed. Use the gluten stretch test. (At 8 minutes, stretch the dough like a rope. If it breaks, continue to mix 2 additional minutes). Form dough into 2 pound balls and spray with non-stick cooking spray or cover with plastic wrap. Once all dough balls have been formed, begin shaping. Form rolls from dough by pinching off 2 oz pieces and shaping into sticks 5-6 inches in length. Place
All-purpose flour, enriched	3 lbs. 8 oz				
Dry milk, instant non-fat	7 oz	1 ¾ cup			
Sugar, granulated	11 ½ oz	1 ¼ cup 3 Tbsp			
Yeast, instant, dry	3 oz	½ cup			
Salt	1 ¾ oz	2 Tbsp 2 tsp			
Vegetable oil	13 oz	1 2/3 cup (+ up to 1 cup if dough is stiff)			
Water* (calculate water temperature by subtracting the temperature of the dry ingredients from 145°F)		2 qt ½ cup			
Non-stick cooking spray		As needed			

					<p>sticks in rows of 6 across and 8 down on sheet pans (18" x 26" x 1/2") which have been lightly coated with non-stick cooking spray.</p> <p>8. Place in a warm area (about 90°F) until double in size, approximately 45-60 minutes.</p> <p>9. Bake until lightly browned: Conventional oven: 400°F for 18-20 minutes Convection oven: 350°F for 12-14 minutes Turn rolls half-way through baking time to promote even baking. Recommended internal temperature for baked whole wheat rolls is 196-198°F.</p> <p>10. Rolls will have a better appearance if lightly sprayed with non-stick cooking spray when they come out of the oven.</p> <p>Notes:</p> <ul style="list-style-type: none"> Dough made with whole flour will absorb more water and requires increased rising/proofing time. Mixing time is less because the bran from the whole grain cuts through developing gluten strands with increased mixing resulting in a product with low volume. Even an additional one minute mixing time with whole grains can make a difference in quality. Figuring water temperature so that the final dough temperature is ~80°F is essential for quality bread products.
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Serving Size	1 Serving Provides	Yield
2 oz roll	2 servings of grain/bread.	100 rolls (12.5 lbs dough)

Nutrients Per Serving

Calories	170	Vitamin A	2 IU	Iron	1.43 mg
Protein	5 g	Vitamin C	0.11 mg	Calcium	33.6 mg
Carbohydrate	29 g	Fiber	2.7 g	Cholesterol	0 mg
Fat	4 g	% Fat	22.17%	Sodium	200 mg
Saturated Fat	0.65 g	% Saturated Fat	3.29%		

***IMPORTANT!**

If applying for the HUSSC Gold or Gold of Distinction Award, replace instant nonfat dry milk and 2 cups of water with 2 cups of 1% fluid milk, in order to qualify for a "Group A" whole grain.