

Determining Ounce Equivalents of Grains in Recipes



This webinar will cover how to determine ounce equivalents of grains in recipes. Grain items prepared from scratch can be a wonderful addition to Child and Adult Care Food Program (CACFP) menus. These items may count toward the minimum amount of grains required at CACFP meals and snacks.

The image shows a website navigation menu on the left and a USDA Team Nutrition handout on the right. The navigation menu includes the following items: Farm to Early Care and Education (ECE), Guidance Memorandums (highlighted with a red box), Menu Planning & Nutrition Resources, Participating Sites, Reimbursement Rates, Training, and Translated Resources (highlighted with a red box). The URL <https://dpi.wi.gov/community-nutrition/cacfp> is displayed at the bottom left. The handout on the right is titled "Determining Ounce Equivalents of Grains in Child and Adult Care Food Program Recipes" and features an illustration of a person in a red cap and apron preparing food. The text on the handout explains that grain items prepared from scratch can be a wonderful addition to CACFP menus and provides instructions on how to determine the ounce equivalent of grains in a recipe.

We will be using the USDA Team Nutrition *Determining Ounce Equivalents of Grains in CACFP Recipes* handout. We recommend having this resource available to follow along throughout the webinar. The DPI has posted this handout on the Guidance Memorandum webpage under GM 12 in the ounce equivalents section. The Spanish version of the handout is on the Translated Resources webpage. You can access both webpages in the left navigation bar on the website shown on this slide.

Homemade Grains Worksheet

Homemade Grains Worksheet: _____

1 Grain Ingredient	2 Amount		3 Conversion Factor		4 Grams of Grains
		x		=	
		x		=	
		x		=	
		x		=	
5 Total Grams of Creditable Grains					

6 _____ grams of creditable grains ÷ _____ number of servings =
_____ grams of creditable grains per serving

7 _____ grams of creditable grains per serving ÷ 16 grams of grains per oz eq =
_____ oz eq of grains per serving

8 Round amount of oz eq down to nearest 0.25 oz eq =
_____ oz eq of grains per serving

Let's get started. To determine how many oz eq of grains are in one serving of a recipe we will complete the homemade grains worksheet, shown on this slide.

Using the Homemade Grains Worksheet

You can use the Homemade Grains Worksheet on page 6 to help determine how many oz eq of grains are in one serving of your recipe. Complete the worksheet by following the steps below:

- 1 Write the name of the recipe on the line after "Homemade Grains Worksheet." Then, list each creditable grain ingredient in the recipe. Creditable grains include whole grains, enriched grains, bran, and germ. See the Grains Conversion Chart on page 5 for a list of commonly used grain ingredients. If an ingredient in your recipe is not creditable, do not include it in the Homemade Grains Worksheet.

Pizza Crust

Yield: 25 servings

Ingredients

- 3 ½ cups enriched bread flour
- 3 ½ cups whole-wheat flour
- ½ cup milk
- ½ cup sugar
- 1 tablespoon active dry yeast



The creditable grain ingredients in this recipe are enriched bread flour and whole-wheat flour.

Homemade Grains Worksheet: Pizza Crust

1 Grain Ingredient	2 Amount	3 Multiply by: Conversion Factor	4 Equals	5 Grams of Grains
Enriched bread flour		x	=	
Whole-wheat flour		x	=	
5 Total Grams of Creditable Grains:				

The steps we are going to go through to complete the homemade grains worksheet start on page 2 of the *Determining Ounce Equivalents of Grains in CACFP Recipes* handout.

1

Pizza Crust

Yield: 25 servings

Ingredients

- 3 ¼ cups enriched bread flour
- 3 ½ cups whole-wheat flour
- ½ cup milk
- ½ cup sugar
- 1 tablespoon active dry yeast

The creditable grain ingredients in this recipe are enriched bread flour and whole-wheat flour.

Homemade Grains Worksheet: Pizza Crust

1 Grain Ingredient	2 Amount	3 Multiply by	4 Conversion Factor	5 Equals	6 Grams of Grains
Enriched bread flour		x		=	
Whole-wheat flour		x		=	
5 Total Grams of Creditable Grains:					

- Write name of recipe
- List creditable grain ingredients

Step 1: Write the name of the recipe on the line after “Homemade Grains Worksheet.” Then, list each creditable grain ingredient in the recipe. Our recipe is Pizza Crust, and the creditable grains are enriched bread flour and whole wheat flour.

Grains Conversion Chart		
Any ingredient: 1 pound (lb) = 453.6 g, 1 ounce (oz) = 28.35 g		
Ingredient	Measurement Unit	Conversion Factor
All-Purpose Flour, Enriched, Bleached and Unbleached	1 Cup	125 g
Almond Flour (Not Creditable)	-	-
Bread Flour, Enriched	1 Cup	137 g
Bromated Flour (Not Creditable)	-	-
Chia Seeds (Not Creditable as a Grain)	-	-
Corn Fiber (Not Creditable)	-	-
Corn Masa, Enriched	1 Cup	114 g
Corrmeal, Degerminated (Not Creditable)	-	-
Corrmeal, Enriched, Degermed	1 Cup	138 g
Corrmeal, Whole Grain	1 Cup	122 g
Corn Flour, Yellow (Not Creditable)	-	-
Corn Flour, Whole Grain	1 Cup	117 g
Cracked Wheat	1 Cup	160 g
Flaxseed (Not Creditable as a Grain)	-	-
Lentil Flour (Not Creditable as a Grain)	-	-
Oat Bran	1 Cup	94 g
Oat Fiber (Not Creditable)	-	-
Oat Flour, Whole Grain	1 Cup	120 g
Oats, Quick-Cooking or Rolled	1 Cup	81 g
Rice Flour, Brown	1 Cup	158 g
Rice Flour, Enriched	1 Cup	160 g
Rice Flour, Unenriched (Not Creditable)	-	-
Self-Rising Flour, Enriched	1 Cup	125 g
Sorghum Flour (Not Creditable)	-	-
Tapioca Flour (Not Creditable)	-	-
USDA Foods White Whole Wheat/Enriched 60/40 Blend	1 Cup	120 g
Wheat Bran	1 Cup	58 g
Wheat Flour, Unenriched (Not Creditable)	-	-
Wheat Germ	1 Cup	115 g
White Flour, Enriched	1 Cup	125 g
White Flour, Unenriched (Not Creditable)	-	-
Whole-Wheat Flour	1 Cup	120 g

- **Creditable grains = bold**
- **Non-creditable grains = not bold and have (Not Creditable)**

Page 5

When determining oz equivalents of grains in recipes, remember that creditable grains include whole grains, enriched grains, bran, and germ.

There is a Grains Conversion Chart, on page 5 of the handout, that lists commonly used grain ingredients. The list includes creditable and non-creditable grains. Creditable grain ingredients are bold and non-creditable grain ingredients are not bold and have (Not Creditable) after the name of the ingredient. If an ingredient in your recipe is not creditable, do not include it in the Homemade Grains Worksheet.

2

List Amount of Grain Ingredients

Fractions and Decimals Chart

Fraction	Equals	Decimal
1/8	=	0.125
1/4	=	0.25
1/3	=	0.333
3/8	=	0.375
1/2	=	0.5
5/8	=	0.625
7/8	=	0.875

Pizza Crust
Yield: 25 servings

Ingredients

- 3 1/4 cups enriched bread flour
- 3 1/2 cups whole-wheat flour
- 1/2 cup milk
- 1/2 cup sugar
- 1 tablespoon active dry yeast

3 1/4 cups = 3.25 cups
3 1/2 cups = 3.5 cups

1 Grain Ingredient	2 Amount	3 Multiply by	Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour	3.25 cups	x		=	
Whole-wheat flour	3.5 cups	x		=	
5 Total Grams of Creditable Grains:					

Step 2: List the amount of each creditable grain ingredient in the recipe in column 2. If amounts are listed as fractions, change the amounts to decimals by using the Fractions and Decimals Chart provided in the handout.

Our recipe calls for 3 1/4 cups of enriched bread flour. Using the Fractions and Decimals chart, you see that 1/4 cup is .25, so we need 3.25 cups of bread flour. Our recipe also calls for 3 1/2 cups of whole wheat flour. Using the Fractions and Decimals chart, you see that 1/2 cup is .5, so we need 3.5 cups of whole-wheat flour. Write these amounts in column 2 of the worksheet.

3

Record Conversion Factor

Ingredient	Measurement Unit	Conversion Factor
Bread Flour, Enriched	1 Cup	137 g
Whole-Wheat Flour	1 Cup	120 g

1 Grain Ingredient	2 Amount	Multiply by	3 Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour	3.25 cups	x	137 g	=	
Whole-wheat flour	3.5 cups	x	120 g	=	

Step 3: Record the conversion factor for each grain ingredient. To do this step, use the Grains Conversion Chart on page 5 to find the conversion factor and write that in column 3.

For our recipe, we found enriched bread flour and whole wheat flour in the chart and recorded the conversion factor in column 3.

Note: If the recipe has a creditable grain ingredient that is not listed in the chart, you will need to weigh your ingredient in grams and record the amount in column 4.

4

Multiply to Determine Grams of Grains

1 Grain Ingredient	2 Amount	Multiply by	3 Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour	3.25 cups	x	137 g	=	445.25 g
Whole-wheat flour	3.5 cups	x	120 g	=	420 g
					5 Total Grams of Creditable Grains

Step 4: Determine grams of grains of each ingredient. To do this, multiply the amount of the grain ingredient in the recipe (in column 2) by the conversion factor (in column 3). Record this number in column 4.

For our recipe, for the enriched bread flour we multiply 3.25 cups times 137 grams to get 445.25 grams, shown in the red box.

For the whole wheat flour, we multiply 3.5 cups times 120 grams to get 420 grams, shown in the blue box.

If you have weighed the ingredient, enter the weight under the “Grams of Grains” column.

5

Total Grams in Recipe

① Grain Ingredient	② Amount	Multiply by	③ Conversion Factor	Equals	④ Grams of Grains
Enriched bread flour	3.25 cups	x	137 g	=	445.25 g
Whole-wheat flour	3.5 cups	x	120 g	=	420 g
⑤ Total Grams of Creditable Grains					865.25 g

Step 5: Add the amounts in column 4 to determine the total grams of grains in the recipe. Record this in row 5.

For our recipe, we add 445.25 plus 420 to get 865.25 grams.

6

Grains per Serving

5

Total Grams of Creditable Grains 865.25 g

6

_____ grams of creditable grains ÷ _____ number of servings =
_____ grams of creditable grains per serving

Pizza Crust

Yield: 25 servings

Ingredients

3 ¼ cups enriched bread flour

3 ½ cups whole-wheat flour

½ cup milk

½ cup sugar

1 tablespoon active dry yeast

865.25 grams of creditable grains ÷ 25 servings =
34.61 grams of creditable grains per serving

Step 6: Determine the amount of grains per serving. To do so, divide the total grams of creditable grains in the recipe (from step 5) by the number of servings (yield) in the recipe. Our recipe yields 25 servings, so we divide 865.25 grams by 25 servings to get 34.61 grams per serving.

7

Oz Eq Grains in Each Serving

7 _____ grams of creditable grains per serving ÷ 16 grams of grains per oz eq =
_____ oz eq of grains per serving

34.61 grams of creditable grains per serving ÷ 16 grams =
2.16 oz eq of grains per serving

Step 7: Determine how many ounce equivalents of grains are in each serving. To do so, divide the grams of grains per serving (from Step 6) by 16 grams. For our recipe, we divide 34.61 grams per serving by 16 grams to get 2.16 ounce equivalent grains per serving.

8

Round Amount

8

Round amount of oz eq down to nearest 0.25 oz eq =
_____ oz eq of grains per serving

2.16 rounds down to 2.

One serving of this pizza crust provides 2 oz eq of grains.

Step 8: If the answer in Step 7 ends in a decimal, round the number down to the nearest 0.25 oz eq of grains.

For our recipe, we round 2.16 down to 2. One serving of pizza crust provides 2 oz equivalent grains.

Try It Out! Use the Homemade Grains Worksheet to determine how many oz eq of grains are in one serving of the recipe.

Multigrain Muffins
Yield: 15 servings

1 cup whole-wheat flour 1 cup oat bran
 ½ cup enriched all-purpose flour ½ cup flaxseeds

Homemade Grains Worksheet: Multigrain Muffins

1 Grain Ingredient	2 Amount		3 Conversion Factor		4 Grams of Grains
Whole wheat flour	1 cup	x	120 g	=	120 g
Enriched All Purpose flour	0.5 cup	x	125 g	=	62.5 g
Oat Bran	1 cup	x	94 g	=	94 g
		x		=	
5 Total Grams of Creditable Grains					276.5 g

6 $276.5 \text{ grams of creditable grains} \div 15 \text{ number of servings} = 18.43 \text{ grams of creditable grains per serving}$

7 $18.43 \text{ grams of creditable grains per serving} \div 16 \text{ grams of grains per oz eq} = 1.15 \text{ oz eq of grains per serving}$

8 Round amount of oz eq down to nearest 0.25 oz eq = 1 oz eq of grains per serving

1 Muffin = 1 oz. equivalent grains

Let's do one more example using a recipe for Multigrain Muffins.

Step 1: Write the name of the recipe on the line then, then list each creditable grain ingredient in the recipe.

- Our recipe is Multi-grain muffins. Whole wheat flour, enriched all purpose flour, and oat bran are the grain ingredients listed in the recipe. Flaxseeds is also listed; however, we see on the Grains Conversion Chart, on page 5 of the handout, that flaxseeds are not creditable as a grain, so we do not list them in the worksheet.

Step 2: List the amount of each grain ingredient in the recipe in column 2. Convert fractions to decimals.

- In column 2, we have 1 cup whole wheat flour, 0.5 cups enriched all purpose flour, and 1 cup oat bran.

Step 3: Record the conversion factor using the Grains Conversion Chart, on page 5. The conversion factors from the chart are recorded on the worksheet.

Step 4: Determine grams of grains of the ingredient. To do this, multiply the amount of the creditable grain ingredient (in column 2) by the conversion factor (in column 3) and record in column 4.

Step 5: Add the amounts in column 4 to determine the total grams of creditable grains in the recipe. For this recipe, the total is 276.5 grams, which is recorded in row 5.

Step 6: Determine the amount of grains per serving. To do so, divide the total grams of creditable grains in the recipe from row 5, which is 276.5 grams, by the number of servings (yield) in the recipe, which is 15 servings. This equals 18.43 grams.

Step 7: Determine how many ounce equivalents of grains are in each serving. To do so, divide the grams of grains per serving from step 6, which is 18.43, by 16 grams. This equals 1.15.

Step 8: Because the answer ends in a decimal, we round the number down to the nearest 0.25 oz eq of grains. 1.15 rounds down to 1.

One multigrain muffin provides 1 oz equivalent grains.

Your Recipes

Homemade Grains Worksheet: _____

1 Grain Ingredient	2 Amount		3 Conversion Factor		4 Grams of Grains
		x		=	
		x		=	
		x		=	
		x		=	
5 Total Grams of Creditable Grains					

6 _____ grams of creditable grains ÷ _____ number of servings =
_____ grams of creditable grains per serving

7 _____ grams of creditable grains per serving ÷ 16 grams of grains per oz eq =
_____ oz eq of grains per serving

8 Round amount of oz eq down to nearest 0.25 oz eq =
_____ oz eq of grains per serving

For your own recipes, print and use the blank Homemade Grains Worksheet on page 6 of the *Determining Ounce Equivalents of Grains in CACFP Recipes* handout.

Questions?

Consultants by
County

Click on your county to find your agency's consultant.



<https://dpi.wi.gov/community-nutrition/cacfp/map>

If you have questions about determining ounce equivalents of grains in recipes, or the CACFP in general, please reach out to your assigned consultant. You can find your agency's consultant on the website at the link shown on this slide.

Daycare home providers please contact your sponsor with any questions.

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Thank you for watching the webinar on determining ounce equivalents of grains in recipes.