



Meal Preparation Documentation

CH.4

Your students see a beautiful serving line with consistently appealing foods. They do not know that behind the scenes, recordkeeping is a critical part of your successful school nutrition operation. Documentation helps you plan from day to day, communicates your plans to staff, and ensures quality control and customer satisfaction. Records also provide a valuable written history for future reference. They help you spot trends, evaluate what works best with your customers, forecast demand, and decide what changes need to be made. Written procedures and daily monitoring logs make food safety second nature to staff. In addition, during an Administrative Review (AR), your records will be ready for review.

In this chapter, you will learn about:

- Production records:
 - Why they are a valuable tool to your school nutrition program
 - Role of production records in the AR
 - Required information on all production records
 - Two-step process for completing a production record
- Standardized recipes:
 - Why they are vital in school nutrition programs
 - Role of standardized recipes in the AR
 - Required information on all standardized recipes
 - Three phases to develop standardized recipes
- Hazard Analysis and Critical Control Point (HACCP) -based food safety program:
 - Food safety standard operating procedures (SOPs)
 - Staff training and Active Managerial Control (AMC)
 - Process Approach to HACCP.

INTRODUCTION

In Chapters 2 and 3, you learned steps to create nutritious meals. Your menus meet meal component and serving amount requirements, and dietary specifications for each grade group's meal pattern. Your next step is to develop written plans and document meal production and service. Maintaining production records and standardized recipes are critical to your school nutrition program's success. Written food safety SOPs give your staff guides to follow for daily work habits while preparing and serving foods. These SOPs include HACCP-based control points and critical limits to reduce the risk of foodborne illnesses.

Production records are a communication tool for everyone involved with school meals, from menu development to production and service. Federal guidelines require that all schools participating in the school nutrition programs keep food production records for the meals they produce. These records demonstrate how the meals provide the required meal components and dietary specifications and help you plan day to day.



Standardized recipes are companion tools to your production records. Recipes provide the production staff with everything they need to know to produce wholesome, delicious food for the school nutrition program. Because the recipes have been tested, the result is known and can be duplicated over and over. Standardized recipes ensure quality and nutritional consistency. They are also useful in procurement as well as inventory and labor management. Together, production records and standardized recipes confirm that menus meet the National School Lunch Program (NSLP) and School Breakfast Program (SBP) requirements for reimbursable meals.

Providing your staff with well-designed production records and standardized recipes strengthens your culture of food safety. Production records and standardized recipes are supported by food safety SOPs that direct how your team routinely prepares, holds, serves, and stores food. Your HACCP-based program guides all food production activities and reduces the risk of a foodborne illness.

In this chapter, you will see how production records are a communication tool and a historical record. Standardized recipes convey detailed production steps. HACCP-based written SOPs guide all steps of production and service; assuring safe food practices are followed. Upon completion of this chapter, you will understand the value of these tools.



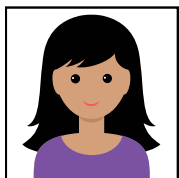
Production Records and Standardized Recipes During the Administrative Review

The State agency (SA) must evaluate production records to ensure the following:

- Records include all information necessary to support the claiming of reimbursable meals and any additional SA requirements (i.e., all menu items are listed and all required meal components are offered);
- Records are used for proper planning (e.g., evaluate for consumption and leftovers);
- Records document food prepared is creditable for the total number of reimbursable meals offered and served;
- Records document a la carte, adult, and/or other nonreimbursable meals, including number of portions for each of these food items;
- Records document that fluid milk, vegetable subgroup, and whole grain-rich requirements are met;
- Records document weekly quantity requirements for fluid milk, vegetables, fruits, grains, and meats/meat alternates; and
- Records align with standardized recipes (e.g., if chicken salad sandwich is on the menu but mayonnaise is not listed on the production records, the SA may examine standardized recipes for additional information).

Excerpted from U.S. Department of Agriculture, Food and Nutrition Service, Child Nutrition Programs, Administrative Review Manual.

Menu Chat



Elena

STANDARDIZED RECIPES

Consistently producing high-quality food that satisfies your customers and meets requirements for reimbursable meals is not an easy task. To do so, you and your team must know the principles of developing and using standardized recipes. A standardized recipe is one that has been tested for use in your kitchen(s). It produces consistent good results and yields every time when using the same procedures, equipment, and quality and quantity of ingredients. You may have a set of standardized recipes at the district level that are further standardized to reflect individual school equipment and other factors.

Schools often use recipes with yields of 50 and 100 servings, or even more. Quantity recipes produce 25 or more servings. You have quantity recipes, but are they standardized? Your quantity recipes become standardized only after adapting them to your school nutrition program.

Advantages of Standardized Recipes

Standardized recipes in your school nutrition program provide many advantages:

1. Reliable Nutrition Content
 - Provide consistent meal component contributions
 - Provide consistent calories, saturated fat, and sodium
2. Food-Safe Practices
 - Provide food-safe preparation steps (avoid cross-contamination and cross-contact)
 - Provide CCPs for time and temperature
3. Product Quality and Quantity Management
 - Provide consistently high-quality food items
 - Yield the same quantity of product each time
 - Indicate multiple serving yields, based on different portion amounts (1/2-cup portions vs. 3/4-cup portions for different grade groups)
4. Reliable Production Forecasting
 - Predict the number of portions from each recipe accurately
 - Eliminate excessive amounts of leftovers or need for substitutions

5. Cost Control

- Specify exact amounts of ingredients to purchase
- Manage inventory and storage through predictable ingredient use

6. Positive Expectations

- Build staff confidence
- Encourage student participation
- Build program reputation within broader school community.

Information to Include on Standardized Recipes

Your standardized recipe format needs to include the following:

- Recipe name – descriptive of the recipe
- Recipe ID number – an identification number unique to each recipe
- Recipe category – classification (main dish, grains, vegetables, etc.)
- Recipe yield – amount produced when production is completed (weight and/or volume and number of servings)
- Ingredients – products used
- Ingredient amounts per yield – quantity of all ingredients in weight or volume for each yield (for example, 50 or 100 servings)

- Preparation instructions – directions for preparing the recipe
- Preparation equipment and utensils – pans, steamers, mixer, etc.
- CCPs – time and temperature critical limits for each step: preparing, holding, serving, and storing
- Cooking time and temperature – as required
- Serving size – single portion size weight and/or volume
- Serving utensils – scoops, ladles, spoodles, etc.
- Component contributions per portion amount – fruits, vegetables including subgroups, grains, meats/meat alternates, and fluid milk (always 1 cup unless credited in smoothie recipes).

A standardized recipe format is helpful; consider creating a template. You can model yours on the USDA recipe format or use one from another source.

USDA standardized recipes include two additional features. The first is nutrients per serving, including calories, saturated fat, and sodium. The second is a marketing guide, which provides purchase quantities for ingredients that have a prepreparation loss or gain prior to use in a recipe. More information on the marketing guide can be found in Chapter 5.

USDA Recipes

USDA standardized recipes are excellent additions to your recipe collection. Look for these resources. The *What's Cooking? USDA Mixing Bowl* website is an online recipe library and includes standardized recipes for school meals:

Recipes for Healthy Kids Cookbook for Schools (<https://www.fns.usda.gov/tn/recipes-healthy-kids-cookbook-schools>).

Searchable recipe database (https://whatscooking.fns.usda.gov/search/quantity/sm_field_usda_standardized_infor/Yes%2C%20this%20recipe%20has%20been%20standardized%20by%20USDA/im_field_audiences/school-foodservice-186).



Anatomy of a Standardized Recipe

1 Bok Choy Wrappers					
Meal Components: Meat-Dark Green Vegetable-Fruit-Grains			Sandwiches		F-11r
Ingredients	50 Servings		100 servings		Directions
	Weight	Measure	Weight	Measure	
Water		1 gal 2 qt		3 gal	1. Boil water.
Brown rice, long-grain, regular, dry	5 lb	3 qt ½ cup	10 lb	1 gal 2 ¼ qt	2. Place 2 lb 8 oz brown rice in each steam table pan (12" x 20" x 2 ½"). For 50 servings, use 2 pans. For 100 servings, use 4 pans. 3. Pour water (3 qt per steam table pan) over brown rice. Stir. Cover pans tightly.
					4. Bake: Conventional oven: 350 °F for 40 minutes Convection oven: 325 °F for 40 minutes 5. Remove from oven and let stand covered for 5 minutes.
*Fresh bok choy, sliced ¼"	3 lb 6 oz	1 gal	6 lb 12 oz	2 gal	6. Combine brown rice, bok choy, pineapple, chicken, sweet and sour sauce, and soy sauce. Pour into steam table pans (12" x 20" x 2 ½"). For 50 servings, use 2 pans. For 100 servings, use 4 pans.
Canned pineapple tidbits, in 100% juice	6 lb 10 oz	3 qt (1 No. 10 can)	13 lb 4 oz	1 gal 2 qt (2 No. 10 cans)	
Frozen, cooked chicken strips, thawed	6 lb 2 oz	1 gal 2 qt	12 lb 4 oz	3 gal	
Sweet and sour sauce		1 qt 2 cups		3 qt	
Low-sodium soy sauce		2 Tbsp		¼ cup	
					7. Bake: Conventional oven: 350 °F for 30 minutes Convection oven: 350 °F for 20 minutes Critical Control Point: Heat to 165 °F or higher for at least 15 seconds.
					8. Critical Control Point: Hold for hot service at 135 °F or higher.
*Fresh romaine lettuce, outer leaves, rinsed, dry	5 lb	100 leaves	10 lb	200 leaves	9. Top each romaine lettuce leaf with a 6 fl oz spoodle (¾ cup) of filling. Optional: garnish with diced red peppers. Fold sides of lettuce in toward center; roll up like burrito. Place seam side down. Serve immediately.
Two wraps provide 1 oz equivalent meat, ¾ cup dark green vegetable, ¼ cup fruit, and 1 ½ oz equivalent grains.					10. Serve 2 wraps.
One wrap provides ½ oz equivalent meat, ¾ cup dark green vegetable, and ¾ oz equivalent grains.					

- 1 Recipe Name
- 2 Food Components
- 3 Recipe Category
- 4 Recipe ID Number
- 5 Ingredients
- 6 Servings per Recipe
- 7 Weight and Measure
- 8 Preparation Instructions
- 9 Ingredient Amounts
- 10 Equipment Needed
- 11 Cooking Time and Temperature
- 12 CCP (Critical Control Point)
- 13 Portioning Utensil
- 14 Serving Information
- 15 Serving Size and Component Contributions



Additional recipe elements may be required by your State agency (SA). Check before finalizing your recipe format to verify any additional requirements. Your standardized recipes provide information to your SA during the administrative review (AR). The SA will compare recipe yields to production records servings during the AR.

Your school nutrition program relies on standardized recipes. They ensure that FBMP provides quality food portioned correctly for each grade group. Now let's look at how to standardize recipes.

Three Phases of Recipe Standardization

Measuring Success with Standardized Recipes (<http://www.theicn.org>) from the Institute of Child Nutrition (ICN) is an excellent resource. The following information is adapted from this publication.

Standardizing recipes involves three phases: recipe verification, product evaluation, and quantity adjustment. To achieve the final standardized recipe, your team may need to repeat one or more phases. Here is a brief look at each phase:

- Recipe verification – Review and prepare recipe, verify yield, and record changes.
- Product evaluation – Determine product acceptability.
- Quantity adjustment – If necessary, change recipe yield and ingredient quantities.

Determine acceptance standards for each phase of the process. If the recipe meets the acceptance standard, move to the next phase. For recipes that fail to meet established standards, repeat the work before moving forward. Once the recipe meets your goals, the process is complete. No modifications will be required unless there are ingredient or equipment changes. Each of the three phases contributes to the success of a recipe.

Recipe Verification Phase

Verify the recipe by careful review and preparation:

- Note any elements missing from the recipe, such as ingredients, preparation steps, CCPs, etc.
- Check the preparation steps for equipment requirements and note possible substitutions.
- Prepare a small quantity of the recipe, usually 25 servings.
- Keep careful notes during preparation.
- Check ingredient amounts and serving yields.
- Record any changes required.
- Transfer the recipe to your standardized format.

Product Evaluation Phase

The product evaluation phase will assist you in determining the acceptability of the product by your school nutrition team. Evaluation is conducted both informally and formally. The first evaluation is informal and an important step in recipe development. Informal evaluation includes three decision choices:

- Product totally unacceptable
- Product acceptable, but requires modifications and goes back to the verification phase
- Product acceptable and ready to be produced for formal evaluation.

The formal evaluation includes students and other customers. The evaluation should be tailored to the audience – young students, older students, or a mix. As you develop the evaluation, address:

- Acceptable appearance
- Flavor
- Product qualities – hot or cold; moist or dry; hard to chew or bite.

Students may evaluate a product differently than your school nutrition team. The students must like the product for it to become a “winner” in their minds. Remember, the student is your customer, not you and your staff! You can find taste-testing forms and resources at (<https://www.fns.usda.gov/tn/team-nutrition>).

Prepare the recipe for evaluation:

- Establish an area where everyone may view, taste, and evaluate the recipe produced
- Summarize results
- Determine the next step:
 - Accept the recipe as is.
 - Modify the recipe until acceptable.
 - Reject the recipe.

Quantity Adjustment Phase

Once a recipe is accepted, you need to adjust it for quantity production. Adjusting recipes is both an art and a science. The factor method is often used in school nutrition programs during standardization.

Continued on page 151

The recipe for Bulgur and Brown Rice (see page 150) looks like a tested, standardized recipe. However, the notation below the nutrition per serving section indicates it has not been standardized. Be aware that few quantity recipes are marked this way, even if the recipe has never actually been tested in large quantity amounts. A printed recipe may have been adjusted from a smaller quantity, but never prepared and verified in the larger volume. As your team completes recipe standardization, you may find modifications necessary to create the quality and quantity required. Always test and standardize recipes before including them in your school nutrition program menus.

Here is an example of why standardizing a recipe such as Bulgur and Brown Rice is necessary. Imagine:

- Your school needs 150 ½-cup servings for grade group K-8 and 75 1-cup servings for grade group 9-12.
- The total yield required is 150 cups (volume of total yield is 9 ⅔ gallons).
- The Bulgur and Brown Rice recipe produces 100 ½-cup servings (volume of recipe yield is 3 ⅓ gallons).

Without standardization, your team might not produce the correct volume or quality of the Bulgur and Brown Rice recipe. The amount produced may be too little for lunch needs, creating a service line crisis. A standardized recipe that is adjusted to meet volume needs reduces the opportunity for error and improves product consistency. A recipe may have yields divided between two portion amounts: 150 ½-cup servings for K-8 and 75 1-cup servings for 9-12.

Through standardization you and your team will create a recipe that meets the needs of your school(s). How a serving portion of the recipe contributes to meal components is essential information. USDA standardized recipes provide component contributions. For recipes without component contributions, you will need to calculate and add those to the recipe information.

How To Calculate Meal Components per Serving

Once the process of increasing or decreasing a recipe is complete, your next step is to calculate meal components for each serving amount. The *Food Buying Guide for Child Nutrition Programs* (FBG) Recipe Analysis Workbook (RAW) is a tool to help you determine your recipe's meal pattern contributions. You can find a link to the RAW at (<https://www.fns.usda.gov/tn/food-buying-guide-for-child-nutrition-programs>). The RAW helps you calculate contributions of each ingredient for meal components.

Information you will need to complete the RAW includes:

- Ingredients that contribute to the meal pattern components
- Correct weight and volume of each ingredient
- Serving size (½ cup, 1 slice, 1 sandwich, etc.)
- Servings per recipe.

Review the included user guide and training videos for instructions on using the RAW. This information is located in the *Food Buying Guide for Child Nutrition Programs* (FBG) (<https://www.fns.usda.gov/tn/food-buying-guide-for-child-nutrition-programs>). You will want to save a copy of the RAW for each recipe you calculate.

A standardized recipe also includes food safety information. Your staff members need to know CCPs and critical limits for safe food production, specific to each recipe or menu item. In the next section, you will learn about HACCP-based food safety procedures.

Sample Nonstandardized Recipe

1 Bulgur and Brown Rice Pilaf 4			
2 Servings: 100 - ½ cup servings		Meal Pattern Contribution: 1/2 cup provides 1 oz eq grains.	
Ingredients	Weight	Measure	Directions
Vermicelli, fine, enriched, broken in half-inch lengths	2 lb 8 oz		1. Sauté vermicelli, onion, and garlic in margarine or butter until lightly browned in a skillet over medium-high heat. 6
Onion, diced	3 lb 12 oz	2 qt 2 5/8 cups	2. Add rice and bulgur and sauté. 7
Garlic, finely chopped	2 1/8 oz	20 cloves	3. In a large stock pot combine sautéed vermicelli, onion, garlic, rice, and bulgur. Add chicken stock or broth and marjoram. Stir to mix well. 8
Margarine or butter	1 lb 8 oz	3 cups	4. Bring to boil, cover and simmer over low heat for approximately 30-35 minutes or until liquid is absorbed. CCP: Heat to 135 °F or higher for at least 15 seconds. 9 CCP: Hold for hot service at 135 °F or higher
Brown rice	2 lb	5 cups	
Whole grain bulgur (cracked wheat)	4 lb 10 oz	15 cups	
Chicken stock or broth	21 lb 3 oz	2 ½ gal	
Marjoram	¼ oz	3 Tbsp 1 tsp	
			5. Portion with a No. 8 (½ cup) scoop. 10

Source: Whole Grains Council/Sunnyland Mills 11

Nutrition Facts per Serving 12 Calories: 204 Total Fat: 6.15 g Vitamin A: 466.4 IU Calcium: 80.24 mg Protein: 3.94 g Saturated Fat: 1.06 mg Vitamin C: 1.50 mg Sodium: 623 mg Carbohydrates: 34.66 g Cholesterol: 0 mg Iron: 4.45 mg Dietary Fiber: 4.93 g				Whole Grains <i>in Child Nutrition Programs</i>
These recipes have been provided by schools, but have not been tested or standardized by USDA. Schools should standardize the recipes for their own operation.				

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- 1 Recipe name
- 9 CCP (Critical Control Point)
- 2 Yield and portion size
- 10 Serving utensil
- 3 Weight and measure
- 11 Source
- 4 Food components
- 12 Nutrients per serving
- 5 Ingredients
- 13 Not all recipes are marked as tested/not tested! Always test and standardize recipes to your kitchens.
- 6 Preparation steps and cooking method
- 7 Equipment needed
- 8 Cooking method



Steps To Adjust Recipe Yield

Using the factor method, you can adjust the yield of a standardized recipe for your school nutrition program. Three steps in the process include:

- **Determine the factor to be used:** $\text{desired yield} \div \text{current yield} = \text{factor}$.
- **Multiply each ingredient by the factor:** $\text{current measure} \times \text{factor} = \text{new measure}$.
- **Change amounts into more common measurements:** a new measure may not convert to a useful measure.

Here is an example for increasing a recipe for the first two steps:

- **Determine the factor to be used:** $\text{desired yield} \div \text{current yield} = \text{factor}$
Example: 250 (desired serving yield) $\div 100$ (current serving yield) = 2.5 (factor).
- **Multiply each ingredient by the factor:** $\text{current measure} \times \text{factor} = \text{new measure}$
Example: 5 pounds (current measure for 100 servings) $\times 2.5$ (factor) = 12.5 pounds (measure for 250 servings).

Here is an example for decreasing a recipe for the first two steps:

- **Determine the factor to be used:** $\text{desired yield} \div \text{current yield} = \text{factor}$
Example: 125 (desired serving yield) $\div 250$ (current serving yield) = 0.5 (factor).
- **Multiply each ingredient by the factor:** $\text{current measure} \times \text{factor} = \text{new measure}$
Example: 5 pounds (current measure for 250 servings) $\times 0.5$ (factor) = 2.5 pounds (measure for 125 servings).

Note: The factor to decrease a recipe is always less than 1; the factor to increase a recipe is always greater than 1.

Then, if necessary, use the third step:

- **Change amounts into more common measurements:** a new measure may not convert to a useful measure.

Examples:

A recipe for 50 servings calls for $\frac{2}{3}$ cup (0.66 cup) shredded carrots, the amount for 300 servings is 3.96 cups of shredded carrots – convert to 1 quart.

A recipe for 100 servings calls for 2 cups of diced onions, the amount for 60 servings is 1.2 cups – convert to $\frac{1}{4}$ cups of diced onions.

Some ingredients require special attention during recipe standardization. These ingredients do not increase or decrease proportionately:

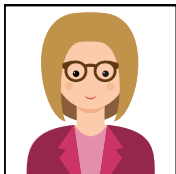
- Herbs and spices
- Leavening agents – baking powder, soda, and yeast
- Thickening agents – flour, cornstarch, and eggs
- Liquids – water and juice.

The best method to determine the quantities of these specific ingredients is to prepare the recipe.

Menu Chat

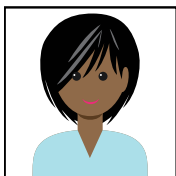


Hello!



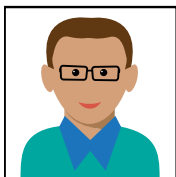
Megan

I am preparing a training session on standardized recipes for my staff. Do you have any tips? I am looking for nuggets of wisdom I can include.



Sandra

I learned through experience that I need to double check the crediting of components for all recipes, no matter the source. The calculations might be wrong or there could be a typo in the recipe. I have a second staff member check my work because of these same issues.



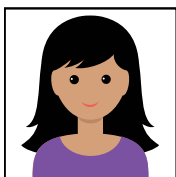
Dylan

I know that even when I cook for my family at home that many recipes I find on websites may not have been tested. I often find ingredients, amounts of ingredients, or preparation steps are missing. I figure that this can happen with a quantity recipe too. We always review the recipes carefully before we do our first preparation. It saves us time and money in the long run.



Lin

Our equipment varies by kitchen, so we have to standardize the recipe to each site. My workers that float between sites know how important it is to follow the recipe that is standardized for each kitchen's equipment. Differences in equipment affect recipe volume and other preparation factors. The standardized recipes help ensure a consistent product from all sites.



Elena

We have a recipe for everything on the menu, even single items such as our orange wedges and chicken nuggets. The recipe provides instructions for portion information, washing produce, critical control points, and other preparation steps. Because each product we purchase is assigned an identification number and we use that on the recipes and production records, it helps us catch that rare time when the wrong product is delivered to a school. For example, we stock two different bake and serve whole grain-rich breadsticks, 1 oz eq for grades K-8 and 2 oz eq for grades 9-12. The smaller product does not meet the daily minimum serving amount for grains at 9-12, so comparing product ID numbers is important because the product packaging and names are similar. My staff finds this very helpful because we cross train our employees to work in different preparation areas.