

## **BEEF PATTY WITH SOY PROTEIN CONCENTRATE**

### **MEAT/MEAT ALTERNATE COMPONENT**

Step 1. Determine which ingredient(s) used to produce the product will contribute towards the meat/meat alternate component i.e.; meat, poultry, cheese, alternate protein product, dried whole eggs, beans, etc.

This product is composed of ground beef (no more than 30% fat), alternate protein product (APP), and dried whole eggs. *(NOTE: The APP used in this example is soy protein concentrate – 64.8% protein by weight).*

Step 2. Calculate the ounces equivalent meat/meat alternate contributed by each category:

**NOTE: Do Not round up for any of the following calculations.**

### **Ground Beef**

1. Multiply the ounces raw serving size by the percent raw ground beef (not more than 30% fat) in the formula to obtain the ounces raw meat per serving:

$$\text{oz raw serving size} \times \% \text{ raw ground beef} = \text{oz raw meat /serving}$$

$$2.65 \text{ oz} \times \frac{81.5}{100} = 2.159 \text{ oz raw meat/serving}$$

2. Multiply the ounces of raw meat/serving by the cooking yield as stated in the *Food Buying Guide for Child Nutrition Programs*. [Ground Beef (no more than 30% fat) = 70% yield]:

$$\text{oz raw meat/serving} \times 0.70 = \text{oz equivalent meat/serving}$$

$$2.159 \text{ oz} \times 0.70 = 1.511 \text{ oz equivalent meat/serving}$$

### **Alternate Protein Product (APP)**

1. Check to make sure that the APP documentation attached with your application shows that the APP you are using meets ALL of the following criteria:

- a) A statement that the APP meets the requirements found in Appendix A of 7 CFR Parts 210, 220, 225, and 226.
- b) Show that the product has been processed so that some portion of the non-protein constituents has been removed.
- c) Provide the Protein Digestibility Corrected Amino Acid Score (PDCAAS). The PDCAAS is required to be greater than 80% of casein. Please show how the PDCAAS was determined.
- d) Show that the protein level is at least 18% by weight when fully hydrated or formulated.
- e) Provide the protein level of the APP on an “as-is” basis for the as-purchased product. Protein is often provided on a moisture free basis “mfb” which is not the information FNS requires.

2. Multiply the ounces of the raw serving size by the percent dry alternate protein product (APP) in the formula to obtain the ounces of dry APP per serving:

$$\text{oz raw serving size} \times \% \text{ dry APP} = \text{oz dry APP/serving}$$

$$2.65 \text{ oz} \times \frac{4.30}{100} = 0.113 \text{ oz dry APP/serving}$$

3. Determine the hydration ratio of dry APP to liquid (allowed for full hydration) by using the following formula:

$$\frac{\% \text{ protein}^1 \text{ in alternate protein product}}{18\% \text{ minimum protein}^2} = \text{total parts hydrated product}$$

$$\frac{.648 \text{ protein}}{.18} = 3.6 \text{ total parts hydrated product (hydration ratio)}$$

4. Determine the ounces of hydrated APP per serving by multiplying the percentage of dry APP in the formula by the hydration ratio:

$$\% \text{ dry APP} \times \text{hydration ratio} = \text{oz fully hydrated APP/serving}$$

$$0.113 \times 3.6 = 0.406 \text{ oz fully hydrated APP/serving (oz equivalent meat alternate/serving)}$$

<sup>1</sup> As-is/as-purchased; including added flavors, colors, or other added substances.

<sup>2</sup> The regulations provided for appropriate hydration of alternate protein products by setting quantity requirements for a product when hydrated at 18 percent weight.

NOTE: You can determine the ratio of APP to liquid (allowed for full hydration) by using the following formula:

a. 
$$\frac{\% \text{ protein}^3 \text{ in alternate protein product}}{18\% \text{ minimum protein}^4} = \text{total parts hydrated product}$$

$$\frac{.648 \text{ protein}}{.18} = 3.6 \text{ total parts hydrated product}$$

b. total parts hydrated product *MINUS* 1 part APP = parts liquid allowed for full hydration

$$3.6 - 1 = 2.6 \text{ parts liquid allowed for full hydration}$$

Therefore, you will need 1 part dry APP to 2.6 parts water to obtain 3.6 parts fully hydrated APP at an 18 percent protein level.

c. To obtain the percent of water allowed for full hydration, multiply the percent dry APP in the formula by the parts liquid allowed for full hydration:

$$\% \text{ dry APP} \times \text{parts liquid for full hydration} = x^5 \text{ (total percentage of liquid allowed for full hydration)}$$

$$4.3 \times 2.6 = 11.18 \text{ percent liquid allowed for full hydration}$$

Therefore, you may add 11.18 percent water to the 4.30 percent dry APP (having an as-is protein concentration of 64.8 percent) to fully hydrate the APP to an 18 percent protein concentration.

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### **Dried Whole Eggs**

1. Multiply the ounces of the raw serving size by the percent of dried whole eggs in the formula to obtain the ounces of dried whole eggs per serving.

$$\text{oz raw serving} \times \% \text{ dried whole eggs} = \text{oz dried whole eggs/serving}$$

$$2.65 \text{ oz} \times \frac{1.5}{100} = 0.0397 \text{ oz dried whole eggs/serving}$$

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<sup>3</sup> As-is/as-purchased; including added flavors, colors, or other added substances.

<sup>4</sup> The regulations provide for appropriate hydration of alternate protein products by setting the protein quantity requirements for a product when fully hydrated at 18% by weight.

<sup>5</sup> The percentage of liquid in the formula in excess of "x" will not be given credit toward the meal pattern requirements.

2. Convert ounces dried whole eggs/serving to pounds dried whole eggs/serving by dividing by 16 ounces (the equivalent of one pound):

$$\text{oz dried whole eggs/serving} \div 16 \text{ oz} = \text{lb. dried whole eggs/serving}$$

$$0.0397 \div 16 = 0.00248 \text{ lb. dried whole eggs/serving}$$

3. Multiply the pounds dried whole eggs/serving by the number of servings of prepared egg per pound of whole dried eggs as found in the *Food Buying Guide* to obtain the ounces of equivalent meat alternate per serving: [1 lb. dried whole eggs = 32 large eggs or 64 oz equivalent meat alternate]

$$\text{lb. dried whole eggs/serving} \times 64 = \text{oz equivalent meat alternate/serving}$$

$$0.00248 \times 64 = 0.158 \text{ oz equivalent meat alternate/serving}$$

Step 3. Total the ounces equivalent meat/meat alternate/serving calculated under each category.

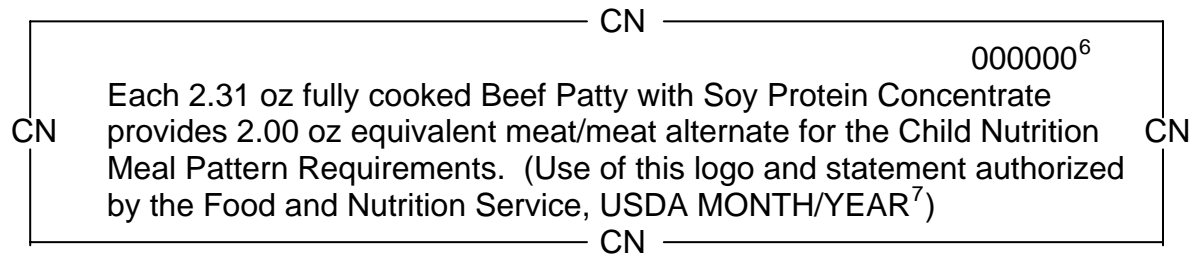
Ground Beef	1.511 oz equivalent meat
Hydrated APP	0.406 oz equivalent meat alternate
Dried Whole Eggs	<u>+ 0.158 oz equivalent meat alternate</u>
	2.075 oz

Step 4. Round down to the nearest 0.25 ounce.

This beef patty provides 2.00 oz equivalent meat/meat alternate.

NOTE: A product serving or portion, as stated in the CN statement, must provide a minimum of 0.50 oz equivalent meat/meat alternate to be eligible for a CN label approval. Ounce equivalents should be expressed as a decimal in increments of 0.25 oz (i.e.; 0.50, 0.75, etc.,) equivalent meat/meat alternate. The resulting credit may never be greater than the finished weight of the portion served. This patty provides 2.00 oz equivalent meat/meat alternate per serving.

**SAMPLE CN LOGO and STATEMENT:**



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<sup>6</sup> The 6-digit CN identification number is assigned by FNS.

<sup>7</sup> Insert the correct date using numbers to represent the month and year that the label will be submitted for final FNS approval. i.e., if label is submitted for final approval in March 2001, the date in the CN statement should read "03-01" or "03-2001"

