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

## MEAT/MEAT ALTERNATE COMPONENT

<u>Step 1.</u> 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).

<u>Step 2.</u> 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 <u>raw serving size</u> by the <u>percent raw ground beef (not more</u> <u>than 30% fat)</u> in the formula to obtain the ounces raw meat per serving:

oz raw serving size X % raw ground beef = oz raw meat /serving

2.65 oz X  $\underline{81.5}_{100}$  = 2.159 oz raw meat/serving

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

oz raw meat/serving X 0.70 = oz equivalent meat/serving 2.159 oz X 0.70 = 1.511 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 nonprotein 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 <u>ounces of the raw serving size</u> by the <u>percent dry alternate protein</u> <u>product</u> (APP) in the formula to obtain the ounces of dry APP per serving:

oz raw serving size X % dry APP = oz dry APP/serving 2.65 oz X  $\frac{4.30}{100}$  = 0.113 oz dry APP/serving

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

<u>% protein<sup>1</sup> in alternate protein product</u> = total parts hydrated product 18% minimum protein<sup>2</sup>

<u>.648 protein</u> = 3.6 total parts hydrated product (hydration ratio) .18

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

% dry APP X hydration ratio = oz fully hydrated APP/serving

0.113 X 3.6 = 0.406 oz fully hydrated APP/serving (oz equivalent meat alternate/serving)

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

<sup>&</sup>lt;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 <u>ratio of APP to liquid</u> (allowed for full hydration) by using the following formula:

a. <u>% protein<sup>3</sup> in alternate protein product</u> = total parts hydrated product 18% minimum protein<sup>4</sup>

<u>.648 protein</u> = 3.6 total parts hydrated product .18

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

3.6 - 1 = 2.6 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 <u>percent of water</u> allowed for full hydration, multiply the percent dry APP in the formula by the parts liquid allowed for full hydration:

% dry APP X parts liquid for full hydration = x<sup>5</sup> (total percentage of liquid allowed for full hydration)

4.3 X 2.6 = 11.18 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.

#### **Dried Whole Eggs**

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

oz raw serving X % dried whole eggs = oz dried whole eggs/serving 2.65 oz X  $\frac{1.5}{100}$  = 0.0397 oz dried whole eggs/serving

 $<sup>^{\</sup>rm 3}$  As-is/as-purchased; including added flavors, colors, or other added substances.

<sup>&</sup>lt;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>&</sup>lt;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):

oz dried whole eggs/serving  $\div$  16 oz = lb. dried whole eggs/serving 0.0397  $\div$  16 = 0.00248 lb. dried whole eggs/serving

 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]

lb. dried whole eggs/serving X 64 = oz equivalent meat alternate/ serving

0.00248 X 64 = 0.158 oz equivalent meat alternate/serving

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

1.511 oz equivalent meat
0.406 oz equivalent meat alternate
+ 0.158 oz equivalent meat alternate
2.075 oz

<u>Step 4</u>. 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:

	000000 <sup>6</sup>	
CN	Each 2.31 oz fully cooked Beef Patty with Soy Protein Concentrate provides 2.00 oz equivalent meat/meat alternate for the Child Nutrition	CN
	Meal Pattern Requirements. (Use of this logo and statement authorized by the Food and Nutrition Service, USDA MONTH/YEAR <sup>7</sup> )	
	<u>ON</u>	

- CN -

 $<sup>^{\</sup>rm 6}$  The 6-digit CN identification number is assigned by FNS.

<sup>&</sup>lt;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"

U.S DEPARTMENT OF AGRICULTURE Food Safety and Inspection Service 1. 2.   APPLICATION FOR APPROVAL OF LABELS, MARKING OR DEVICE 1. THIS IS TO AS AN B   FSIS has determined that information pro- vided in items 8, 9, and 10 is exempt from mandatory disclosure under the Freedom of Information Act 5 U.S.C 552 (b)(4). 1. 2.		PLE	3.	Concentrate	of ENTRY DUCT i <b>th Soy Protein</b> (soy protein
APLLICANT. See cover for instructions.				concentrate is	s used as an APP)
6. ACTION REQUESTED BY USDA FOR APPROVAL □ SKETCH □ TEMH ■ FINAL Was label previously approved as a sketch? □ YES If sketch, date of sketch	Number of	] _ oval number _ labels on hand days requeste		ON	7. AREA OF PRINCIPAL DISPLAY PANEL SQ. IN.
8. PRODUCT FORMULA	CT U WEIGH	IT 9. PROCES	SING PROCEDURES		
Ground Beef (No more than 30% fat)* Water Soy Protein Concentrate (64.8% protein as-is basis)* (see attached label documentation for use as an Dried Whole Eggs* Seasonings * Note: Ingredients that credit towards meal pattern requirements a description in <i>Food Buying Guide for</i> <i>Nutrition Programs</i> or meet program requirements.	uirements	81 50 11 20 4 30 1 50 1 50	weight of 2.31 5. Freeze patties <u>% Soy Protein Co</u>	nd beef, hydrate end. patties, <u>each w</u> a broiler to an at least 150°F <u>ounces each</u> . and pack 100 p	ed soy, and <u>eighing 2.65</u> internal and <u>a cooked</u> portions per case.
(Percent must to	TOTAL	100 00			
10. NAME AND ADDRESS OF FIRM (Below and between dots) O W. J.'s Patty House, Inc. 321 Brick-Oven Lane Little Town, Anywhere	0	12. SIGNA 13. CON	ATURE OF APPLICANT OR AGEN ATURE OF INSPECTOR DITIONS APPLYING TO USE OF L ling can be used, the firm must have	ABELS OR DEVICE	DATE September 1,1996 DATE am on file.