

Culinary Math & Tomato Conversions

Welcome to the lesson on Seasonality and Store-Bought Conversions in our online course, '**All Things Tomato Canning**'. Understanding the seasonality of tomatoes and how to convert store-bought varieties for canning is essential for any aspiring canner.

In this downloadable PDF, I will provide tips on how to convert store-bought canned tomatoes to fresh equivalents in canning recipes.



When it comes to canning tomatoes, using fresh seasonal varieties is ideal because they are at their peak in terms of flavor, texture, and nutritional value. They are also more affordable and readily available. However, if cannot find fresh seasonal tomatoes, or the product in the stores are off-season and costly, you may use store-bought commercially canned varieties.

In addition to the interactive PDF within this lesson, which walks you through the culinary math and measurement equivalents, below are quick and easy equations and store-bought conversions based on standard ounces sold in the United States. Not to worry, the interactive PDF gives metric and imperial conversions using culinary math equations so you may secure the answers no matter where you live.

How To Calculate What To Buy?

Example A: The canning recipe lists the tomatoes in cups, or ounces, and you must convert it to pounds.

Convert: 1 ½ gallons of cored and diced Roma tomatoes to pounds

$$\frac{G}{1} \times \frac{C}{G} \times \frac{oz}{C} \times \frac{\#}{oz} = \#$$

To convert 1.5 gallons into pounds using the edible portion, which is one cup of cored and diced Roma tomatoes, we use the cup weigh from The Book of Yields. This amount is 5.7 ounces (EP). This equation also includes standard equivalents which are 16 cups is in one gallon and 16 ounces is in 1 pound:

$$\frac{1.5}{1} \times \frac{16 C}{1 G} \times \frac{5.7 oz}{1 C} \times \frac{1 \#}{16 oz} = 8.55 \#$$

Using the yield percentage, meaning after a Roma is cored and diced, we retain 93.8% of its original state for the canning recipe:

$$8.55 \# (EP) \div 0.938 = 9.11 \# (AP)$$

Explanation: We require 8 ½ pounds for the recipe so we need to purchase just over 9 pounds whole Roma tomatoes.

Example B: The canning recipe gives a quantity of tomatoes but no measurements.

Convert: 20 medium fresh Roma tomatoes into a weight in pounds using the average weight of a medium Roma, which is 3 ounces.

$$\frac{quantity}{1} \times \frac{weight}{tomato} \times \frac{1 \#}{16 oz} = \#$$

To convert 20 medium Roma tomatoes into pounds using the average tomato weight, we use the overall quantity, times the tomato weight in ounces and convert it to pounds.

$$\frac{20 Romas}{1} \times \frac{3 oz}{1 Roma} \times \frac{1 \#}{16 oz} = 3.75 \#$$

It is determined that purchasing 20 Roma tomatoes is about 3.75 pounds.

Convert Fresh Tomatoes to Canned

To help you convert fresh ingredients to commercially canned equivalents in ounces for recipe creation, use the following formula:

$$\text{Commercially Canned Tomatoes (in ounces)} = \frac{\text{Weight of Fresh Ingredient}}{\text{Yield Percentage after Prep}}$$

Let's say the recipe calls for 30 pounds of fresh DICED tomatoes, and you want to convert it to the commercially canned equivalent based on a 62% yield after draining. The formula would be:

$$\frac{30 \text{ pounds}}{0.62 \text{ yield}} \times \frac{16 \text{ oz}}{1} = 774.19 \text{ oz}$$

You would then purchase one of the following diced tomatoes in aluminum cans:

- 53 cans at 14.5 ounces each
- 28 cans at 28 ounces each
- 8 cans at 102 ounces (No. 10) each

Each can would need to be drained and the diced tomatoes used in the canning recipe.

If you wish to use the entire can and not drain the tomatoes, the yield is 100% so the formula would be:

$$\frac{30 \text{ pounds}}{1.0 \text{ yield}} \times \frac{16 \text{ oz}}{1} = 480 \text{ oz}$$

You would then purchase one of the following diced, crushed or whole tomatoes in juice, and not drain them prior to adding to the canning recipe:

- 33 cans at 14.5 ounces each
- 17 cans at 28 ounces each
- 5 cans purchased at 102-105 ounces (No. 10 can) each; only 4 ½ cans will be used