

# How Much Water Can Your 100' Garden Hose Hold?

If you live drought-stricken areas, you know full well it's important to conserve your water. The water that stays in the hose when you turn off the tap shouldn't be wasted and should be put to good use instead of letting it drain out. So that is why it's useful to know how much water your 100' garden hose can hold, whether you have a 1/2", 5/8", or 3/4" garden hose. First, you need to measure the hose's thickness, which will indicate the inside diameter of the hose. Thickness will differ with hose material – rubber hoses are usually thicker than vinyl hoses, for example.

## Measuring the Inside Diameter or Using an Approximation

Since hoses are basically like a long cylinder, you can calculate the volume by first calculating the cross-section area of the cylinder, then multiplying it by its length. If you want the most accurate calculation, you should measure the inside diameter of the hose, but you can also use a default hose thickness of 1/4" to make approximations. By using the approximation method, the inside diameter of a 3/4" hose is 1/2", the inside diameter of a 5/8" hose is 3/8", and the inside diameter of a 1/2" hose is 1/4".

## Calculating the Inside Area

The inside area of a cylinder is circular. The area of a cylinder is the square of the radius – half the diameter – multiplied by pi (3.14). The mathematical formula is  $(3.14) \cdot d \cdot d / 4$ , with "d" being the inside diameter. By using this formula, the inside area of a **3/4" garden hose**, with a wall thickness of 1/4", is approximately **0.1962 square inches**. The values for a **5/8" and 1/2" garden hose** are **0.1104 and 0.0491 square inches**, respectively.

## Converting to Gallons

If you need to calculate the hose's volume in cubic feet – which can be converted into gallons – you must first convert the inside area from square inches to square feet, with **1 square inch being equal to 0.0069 square feet**. Then multiply the result by 100' to get the total volume of water inside the 100' hose in cubic feet. To convert to gallons, multiply that number by [7.48](#).

## Results of Calculations

With these mathematical calculations, you can calculate the volume of water inside a **3/4" hose** to be **1.01 gallons**, for a **5/8" hose** the volume is **0.57 gallons**, and for a **1/2" hose** the volume is **0.25 gallons** of water.