

MEASUREMENTS FOR PESTICIDE APPLICATION

The following is a compilation of equivalent, conversion and other data that will help in the mixing and application of pesticides in small amounts. Always follow the label directions and precautions of the material being used.

TABLE 1 – EQUIVALENTS

1 teaspoon	1/3 tablespoon
3 teaspoons	1 tablespoon
1 tablespoon	3 teaspoons
2 tablespoons	1 fluid ounce
4 tablespoons	1/4 cup or 2 fluid ounces
6 tablespoons	1 dry ounce
8 tablespoons	1/2 cup or 4 fluid ounces
16 tablespoons	1 cup or 8 fluid ounces
96 tablespoons	1 dry pound or 16 dry ounces
1/4 cup	4 tablespoons
1 cup	1/2 pint or 8 fluid ounces
2 cups	1 pint or 16 fluid ounces
1 pint, liquid	16 fluid ounces
1 quart, liquid	2 pints or 4 cups
1 gallon, liquid	4 quarts

TABLE II – When recommendations are made on a per volume basis:

LIQUID PESTICIDES		WETTABLE POWDERS	
<u>Rate Per 100</u> <u>Gals. Water</u>	<u>Per Gal.</u>	<u>Rate Per 100</u> <u>Gals. Water</u>	<u>Per Gal.</u>
1 pint	1 teaspoon	1 pound	1 tablespoon
1 quart	2 teaspoons	2 pounds	2 tablespoons
1 gallon	1 1/2 fluid ounces or 8 teaspoons	3 pounds	3 tablespoons
10 gallons	12 1/2 fluid ounces or 4/5 pint	4 pounds	4 tablespoons

TABLE III – When recommendations are made on a per area basis:

LIQUID PESTICIDES		WETTABLE POWDERS	
<u>Rate Per Acre</u>	<u>Per 1000 sq.ft</u>	<u>Rate Per Acre</u>	<u>Per 1000 sq. ft.</u>
1 pint	3/4 tablespoon	1 pound	5 teaspoons
1 quart	1 1/2 tablespoons	2 pounds	3 tablespoons
2 quarts	3 tablespoons	3 pounds	5 tablespoons
1 gallon	6 tablespoons	10 pounds	1 cup

OTHER

Dry Measure:	Wettable powders	1 ounce =	6 level tablespoons
	Complete fertilizer, pelletized limestone	1 ounce =	2.25 tablespoons
	Limestone	1 cup =	approximately 1 lb.

It's important to calibrate your spray equipment and determine how many gallons per area you apply. Example: If your rate of application is 1 gallon per 1000 sq. ft and the recommended rate of pesticide per acre is 2 pounds, then the mixture rate per gallon is 3 tablespoons (see Table III).

Most herbicide recommendations are given on a per area (acre, per 1000 ft., etc.) basis and are reasonably easy to calculate if you know your rate of application. When insecticide or fungicide recommendations are given on a per acre basis you have to determine your (either hydraulic or mist blower) spray application rate in order to apply the recommended amount of pesticide.

Calibration: Put one gallon of plain water in the sprayer and apply as recommended (to drip, mist, etc.). Tally the number of trees treated by the gallon and then compute the gallons per acre according to the trees/acres spacing of your plantation using the following:

<u>Spacing</u>	<u>Trees/acre</u>	
5 x 5 feet	1,742 trees	
5 x 6	1,452	(other spacing data readily available)
6 x 6	1,210	

Example 1: How much pesticide is mixed per gallon if the recommended rate is one quart per acre. In your calibration you found that one gallon of water was enough to treat 40 trees. Since your trees are planted on a 6 x 6 spacing you would need 30 gallons of mixture to treat one acre of trees.

$$\text{gallons/acre} = \frac{\text{trees/acre spacing}}{\text{trees treated/gallon}} = \frac{1210}{40} = 30.25 \text{ gallons per acre application rate}$$

To figure amount of pesticide:

$$\text{amount/gallon} = \frac{\text{recommended rate/acre}}{\text{gallons/acre application rate}}$$

$$\text{amount/gallon} = \frac{1 \text{ quart/acre}}{30 \text{ gallons/acre}} = \frac{32 \text{ ounces}}{30 \text{ gallons}} = 1.1 \text{ ounces/gallon}$$

Since 1 fluid ounce = 2 tablespoons (see table 1)
Then 1.1 ounces = 2.2 tablespoons

$$\text{amount/gallon} = 2.2 \text{ tablespoons/gallon}$$

Answer: mix 2.2 tablespoons of pesticide per gallon of water (for 3 gallon sprayer mix 6.6 tablespoons or approximately ¾ cup/3 gallon tank (see table 1).

Example 2: How much pesticide is mixed per gallon if the recommended rate is 1 quart per acre and it takes 100 gallons to treat an acre?

$$\frac{1 \text{ quart/acre}}{100 \text{ gallon/acre}} = \frac{32 \text{ ounces}}{100 \text{ gallons}} = .32 \text{ ounces/gallon}$$