



CENTRAL COAST COUNTIES

GRAPE
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Table of ContentsCALCULATION:ACTIVE INGREDIENT VS. FORMULATION

Various calculations need to be made from time to time when figuring the amount of a formulated pesticide needed per 100 gallons or per acre. The following formulae should aid you to do this regardless, whether the material is a wettable powder or liquid.

HOW TO FIGURE AMOUNT OF FORMULATED (PACKAGED) PESTICIDE TO USE1. If recommendation says:

-Use 2 lbs. a.i. of a. 80% WP/100 or /acre

$$2 \text{ lbs.} \times \frac{100\%}{80\%} = 2 \times 1.25 = 2.5 \text{ lbs.}$$

∴ this means either 2.5 lbs./100 or /acre

2. If recommendation says:

-Use 2 lbs. a.i. of a. 4 lbs./gal. E.C./100 or /acre

$$1 \text{ gal.} + 4 \text{ (lbs.)} = 1 \text{ lb./qt.}$$

∴ 2 lbs. = 2 qts. or 1/2 gal./100 or /acre

NOTE: If the E.C. is listed as % a.i. then first figure amount (lbs.) necessary as per example No. 1 and then utilize example No. 2 to determine how many ounces, pints, quarts or gallons of the liquid formulation is required/100 or /acre.

(Continued)

3. If recommendation says:

-Use 4 oz. a.i. of a. 80% WP/100 or /acre

$$\begin{aligned} \text{lbs. to use} &= \frac{6.25}{80(\%WP)} \times 4 \text{ (oz.)} \\ &= .08 \times 4 \\ &= .32 \text{ lbs./100 or /acre} \end{aligned}$$

(NOTE: to correct to oz. = .32 X 16 oz. = 5 oz.)

4. If recommendation says:

-Use 4 oz. a.i. of a. 4 lb./gal E.C./100 or /acre

$$\begin{aligned} \text{pints to use} &= \frac{4 \text{ (oz.)}}{4 \text{ (lbs./gal.)} \times 2} \\ &= \frac{4}{8} \\ &= .5 \text{ pt.} \end{aligned}$$

(NOTE: to correct to oz. = .5 X 16 oz. = 8 oz.)

5. If recommendation says:

-Prepare a spray of a certain percent strength from a W.P. formulation

$$\text{W.P. (lbs.) needed} = \frac{\text{gals. of spray needed} \times \% \text{ strength} \times 8.3}{\% \text{ W.P.}}$$

$$\text{i.e.,} = \frac{100 \text{ (gal.)} \times 0.6 (\%) \times 8.3}{25 (\%)} = \frac{498}{25} = 20 \text{ lbs.}$$

∴ lbs. of W.P. to use = 20 lbs.

6. If recommendation says:

-Prepare a spray of a certain percent strength from a E.C. formulation

$$\text{E.C. (gals.) needed} = \frac{\text{gal. of spray needed} \times \% \text{ strength} \times 8.3}{\text{lbs. a.i./gal. E.C.} \times 100}$$

$$\text{i.e.,} = \frac{100 \text{ (gal.)} \times .05 (\%) \times 8.3}{2 \text{ (lbs. a.i./gal)} \times 100} = \frac{41.5}{200} = .2 \text{ gals.}$$

∴ gals. of E.C. to use = .2 gals. (or 1.6 pts.)

16 fluid oz/pint

16 dry oz/pound

2 pints/quart

4 quarts/gallon

∴ = therefore

a.i. = active ingredient

a.i.a. = active ingredient per acre

W.P. = Wettable powder

E.C. = Emulsifiable concentrate

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Adapted from "PEST AIDS" written by John E. Dibble, U.C. Ext. Entomologist.

Sincerely,

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