UNIVERSITY OF WYOMING

Cooperative Extension Service Department of Plant Sciences College of Agriculture

Pesticide Education Program Fact Sheet

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Prepared by M.A. Ferrell, UW Cooperative Extension Pesticide Coordinator

1/128 Method of Calibration Calibrating Hand Sprayers and High Pressure Hand Guns

Because a gallon = 128 ounces and the test area to be sprayed is 1/128th of an acre, ounces collected = gallons per acre.

STEP 1.

Measure out an area equal to 1/128th of an acre. Approximately 340 ft² or an area 18.5 feet by 18.5 feet.

STEP 2.

Measure the time it takes to spray the measured area, with water only. Repeat several times and take the average time.

STEP 3.

Spray into a container for the same amount of time it took to spray the measured area. Measure the water collected in ounces. The amount collected in ounces equals gallons per acre.

EXAMPLE: Hand sprayer

STEP 1. Measure area. 18.5 by 18.5 feet = 340 ft²

STEP 2.

Time to spray area = 51 seconds

STEP 3.

Amount collected = 40 ounces; therefore, 40 ounces = **40 gallons per acre**

Determining how much pesticide to add to the spray mixture

The recommendation is to apply 1 quart of 2,4-D per acre.

The sprayer is applying 40 gallons per acre; therefore, you will need to add 1 quart of 2,4-D to each 40 gallons of water.

Your sprayer only holds 1 gallon of spray mixture. So how much pesticide will you need to add to the gallon of water?

1 quart (32 ounces) divided by 40 gallons = 0.8 ounces.

1 fluid ounce = 2 tablespoons; therefore, you will need approximately 2 tablespoons of 2,4-D per gallon of water.

1 fluid ounce also = 29.57 milliliters (ml); therefore, if measuring in ml, you would need 0.8 ounces times 29.57 ml per ounce = 24 ml per gallon of water.

How much area will 1 gallon spray? There are 43,560 ft² per acre. If 40 gallons will spray one acre then one gallon will spray an area 1/40 that size or 43,560 ft² divided by 40 = **1089 ft**².

Pesticide Education Program, Prepared by M.A. Ferrell, UW Cooperative Extension Pesticide Coordinator Department of Plant Sciences , P.O. Box 3354, Laramie, Wyoming 82071-3354, ph (307) 766-5381

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