

PMA 4570/6228 Field Techniques in Integrated Pest Management

Laboratory 5: Insecticide Labels and Calibration

DUE: Thurs. July 30 at 9:30am

Insecticides and other pesticides can be valuable tools in an IPM strategy if they are used wisely. The label that comes with each pesticide provides much of the information necessary to apply it properly. All labels carry the statement, “It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.” It is the applicators responsibility to find out if there are supplementary labels or state laws that apply to the pesticide being used.

Before applying a pesticide, calculations must be done so that the proper amount is applied. The spray equipment must be calibrated before each application, especially if there are multiple users.

In this lab, you will become familiar with finding various important pieces of information on pesticide labels and what various label terms mean. You will learn how to calibrate two different sprayers, a backpack sprayer and a CO₂ sprayer and perform all the necessary calculations as if you were going to apply a pesticide with them.

1. What are the signal words for Vendex[®] 50WP, Malathion 5 EC, and SpinTor[®] 2SC?
What toxicity category do these pesticides fall into? Why?
2. What PPE is required when applying Malathion 5 EC?
3. What is the active ingredient in Vendex[®]? What percentage of this active ingredient is contained in each water soluble pack?
4. What are the Restricted Entry Intervals (REIs) for Vendex[®] 50WP, Malathion 5 EC, and SpinTor[®] 2SC?
5. What insects is SpinTor[®] 2SC registered to control on corn? What is the pre-harvest interval?
6. You have 10 rows of cucumbers that are 20 ft long and 2.5 ft wide. They are infested with aphids. You are going to apply malathion 5 EC to bring the aphids under control.
 - a) What is the label rate (use the lowest rate)?
 - b) How much malathion 5 EC do you need to apply?

c) The backpack sprayer can hold 3 gallons of water. Determine the sprayer output by spraying water into a container for 30 sec while keeping the pressure as even as possible (pump consistently). Measure the amount of water using the graduated cylinder. Repeat three times and average. Assume that your velocity is 2 ft / sec. Multiply this by the spray width (1 ft). How much water will you need to carry the malathion in with using this sprayer? Will it be necessary to refill the tank? If so, show how much malathion and water will be used each time.

d) The CO₂ sprayer is fitted to use 2 L bottles. Determine the sprayer output by spraying into four containers for 30 sec. The pressure is kept constant by the CO₂ tank, which I set so that the gauge on the spray arm reads 30 psi. Make sure all four nozzles are spraying evenly by measuring the amount of water in each container using the graduated cylinder. They should be within ± 0.5 mL of each other. Total the four nozzles to get the sprayer output. Repeat once for accuracy. Assume that your velocity is 2 ft / sec. The spray width of this sprayer is 4 ft. How much water will you need to carry the malathion in using this sprayer? How many 2 L bottles will you need and how will the malathion and water be distributed in them?