

Calibration Practice Problem Set

1. The turf manager at Tiger Stadium has a tractor-mounted sprayer that has 5 nozzles and covers a 10-ft swath. The sprayer is operated at 3 mph and the manager wishes to apply 20 gallons of spray solution per acre.

A. How many mL should each nozzle emit per minute?

B. What size nozzles should be used?

C. If the manager uses Weedone 3.8L at a rate of 0.5 lb ai/acre, how many milliliters should be added for each 100 gallons of spray solution.

D. If the field dimensions are 300 ft x 150 ft, how many more acres could the manager spray with what is remaining in the tank?

2. A farmer has a spray rig that has 10 nozzles and covers a 15-ft swath. The spray rig is operated at a speed of 3 mph and emits an average of 900 ml per nozzle per minute traveled.

A. How many gallons are being applied per acre?

B. If 70 acres of the crop are to be treated with clomazone (Command 4EC) at 1.0 lb ai/acre, how many ounces of product are needed?

3. A consultant tells a farmer to spray Bidrin 4EC at 1 gallon: 10 acres for stink bugs. The boom covers 18 feet and has 12 nozzles. The average output is 1200 mL per minute and the spray speed is 4 mph.

A. What rate, given in lbs ai/acres is the farmer spraying?

B. How many gallons per acre is the sprayer applying?

C. If the farmer has a 200 gallon tank on his sprayer, how many gallons of Bidrin should be added to each tank?

4. A farmer has an 8 row spray rig with rows spaced 40 inches. The sprayer has 16 nozzles and the travel speed is 3 mph. Glyphosate will be sprayed on RoundUp Ready soybean at 1qt/acre using Honcho 4L.

A. How many ml should each nozzle emit per minute if he wishes to apply 20 gallons per acre?

B. How many gallons of Honcho and a non-ionic surfact (0.25% v/v) should be added to a 750 gallon spray tank?

C. How many lbs ai/acre of glyphosate are being applied?

5. A farmer has a 100 acre field of corn which he wishes to treat with Atrazine 4L. The farmer wishes to treat a 12-inch band of a 36-in row. Each nozzles emits 1000 mL per minute and the tractor speed is 4 mph.

A. How many gallons of carrier will be needed to treat the field?

B. Atrazine is applied at a rate of 1.5 lb ai/acre on a broadcast basis. How many gallons of product should the farmer add to a 250 tank?