MULTIPLE NOZZLES OVER THE ROW
DIRECTED SPRAYING APPLICATION - GPA FORMULAS

Do not confuse directed spraying applications with banding or directed banding applications. Multiple nozzle directed spraying is calculated much like broadcast, however the applicator is directing the spray into the crop from various angles to achieve better coverage.

FORMULA (1): To determine the value for W.

$$W = \frac{S}{N}$$

Where: S = Crop Row Spacing
N = Number of Nozzles

FORMULA (2): To determine the gallons per minute (GPM) capacity required for each spray tip in a multiple nozzle directed spray application.

$$\text{GPM (Per Nozzle)} = \frac{GPA \times MPH \times W}{5940}$$

Where: GPA = Gallons Per Acre (Application) Rate
MPH = Actual field speed in Miles Per Hour
W = Crop row spacing divided by number of nozzles

EXAMPLES

If a farmer wants to find the correct capacity spray tip to use in a "multiple nozzle broadcast" pesticide application, he should know the chemical manufacturer's suggested application rate (GPA), actual field speed, the crop row spacing, and the quantity of nozzles per row. For example:

The farmer decides to use a recommended rate of 20 GPA, travel at 4 MPH, and spray over the 30 inch crop row using 3 ConeJet® spray tips. First, the correct value for "W" would be:

FORMULA (1): $W = \frac{\text{30" Crop Spacing}}{\text{3 Nozzles}} = 10$

The correct spray tip to use would be:

FORMULA (2): $\text{GPM (Per Nozzle)} = \frac{20 \times 4 \times 10}{5940} = 0.135 \text{ GPM (Per Nozzle)}$

Using the TXVS–8 ConeJet Spray Tip at 40 PSI, we calibrate the equipment and note the capacity is 0.135 GPM.

It can be seen that applying agrichemicals in a multiple nozzle directed broadcast application can maximize the effectiveness of the chemical being applied, by directing it to the target.

DESCRIPTION:

CALCULATING GALLONS PER ACRE IN DIRECTED SPRAYING APPLICATIONS USING MULTIPLE NOZZLES OVER THE ROW

Spraying Systems Co.®
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