

Chemigation

Achieving precision through
calibration

Requirements

- Individual valve control for each bed
- Mixing tank with drain valve connected to pump

Tools

- Stopwatch
- Blue marker dye
- Pencil and paper
- Product sheet
- Assistant

Product Sheet

- Contains information that is a result of years of field trials required for certification. For this exercise our example will be Diazinon 500E for controlling fruitworm in cranberries. The rate on the sheet is 7 litres of product per hectare in 3200 – 3500 litres of water per hectare.

Information

- Wash-in / wash-out times
- Bed area
- Sprinkler head flow rate
- Number of sprinkler heads in bed
- Sprinkler head rotation time

Formulas

- Volume of product needed = product rate x bed area in water volume x bed area
- $7\text{L/ha} \times 1.44 = 10\text{L}$
- Volume of water needed = sheet rate/ha x bed area
- $3200 - 3500\text{L} \times 1.44 = 4600 - 5040\text{L}$

Application time

- Sprinkler head flow rate 11.4L/min
- Sprinkler heads in bed 84
- Head rotation 45 sec
- Water volume/min = $84 \times 11.4 = 957.6\text{L}$

- Time = $4600/957.6$ to $5040/957.6$
 = 4.8min to 5.26min (5min)

Wash-in / Wash-out

Turn on pump to target bed.

Pour 50ml dye + 500ml water in mixing tank.

Open drain valve and start watch.

Take assistant, watch and pencil/paper and wait for dye to appear in first heads.

Record time (Wash-in)

Split up and go to the ends of the bed and record time when last head shows no more dye (Wash-out)

Matching drain time (5 min)

Find a volume for the mixing tank that will take 5 min to empty when pump is running to target bed and valve is open and mark. Dilute the product in enough water to make the mark and stir/agitate.

Every area of the bed will receive a uniform concentration of product for 5 minutes.

