

Spray calibration

Patternator

Calibrating the spray boom regularly ensures chemicals are applied evenly and at the right rate, reducing the cost and preventing crop and environmental damage.

The spray patternator is designed to allow inspection and calibration of a spray boom by mechanically measuring the distribution of liquid under the boom.

It is a simple device that when placed under a spray boom, collects the liquid sprayed out of the nozzles, and shows, through a pattern of floating-coloured balls, the volume of liquid along the length of the boom. This provides a visual representation of the spray distribution created by the sprayer boom.

This procedure is necessary to:

- ensure that the sprayer is delivering chemical in an effective and efficient manner
- assess the spray distribution changes with different nozzle types and spacing, operating conditions and spray distances
- prevent or reduce spray drift
- measure the optimum working height of the sprayer.

Patternators come in different forms and can be horizontal to measure horizontal booms, or vertical for vertical boom calibration.

Have a go:

A patternator is a large plastic 'table' with plastic gutters lined up along the surface. Each gutter is connected to a measuring gauge at the end of it, which contains a plastic ball. Once the liquid is collected from the spray boom the ball floats and the pattern of the water distribution can be determined. The patternator is designed with wheels on one end to allow it to be rolled under the spray boom with ease.

KEY POINTS:

- Use prior to the start of the spraying season to calibrate your spray boom
- Mechanically measures the distribution of the liquid under the boom through observing the pattern of balls floating on the water delivered.
- Assess the spray distribution changes with different nozzle types, spacings and spray distances
- Takes 10 minutes per section of boom

Before you start

Prior to calibration with the patternator, the spray boom must be cleaned and filled with water.

Once on stable ground, the spray boom, in a stationary position is placed at standard spraying height, with the height from the ground measured and recorded.

Using the patternator

Once the sprayer is turned on, the patternator is rolled underneath with the collection tubes placed below the nozzles where the water will flow through the gutters. The height between the boom and patternator must also be measured and recorded.

After an allocated time, as measured by a timer, the patternator can be rolled back and

gently lifted, to allow the water to flow through to the gauges at the end.

Each gauge contains a coloured ball, which floats on the top of the water surface once it has been collected. The pattern created by the balls in the gauges can then be observed.

Check your results

A straight horizontal line of balls floating within each gauge demonstrates an even distribution of spray (*Figure 1*). If the balls are uneven (*Figure 2*), the spray boom is providing an uneven distribution of spray, and the nozzles or height of the boom need to be adjusted and rechecked.

Once the pattern of balls demonstrates an even distribution, the patternator can be moved along the boom to measure the subsequent sections.

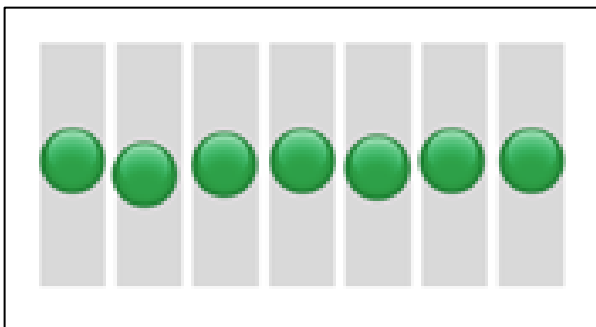


Figure 1. Even distribution pattern for spray boom demonstrated on the patternator

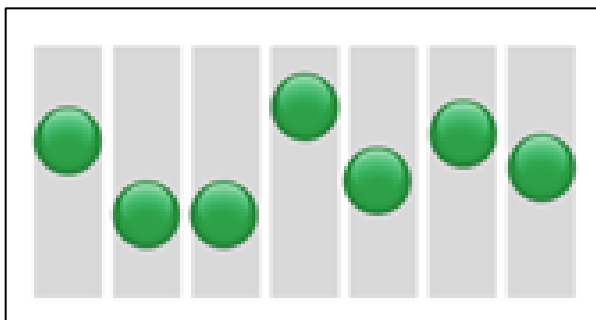


Figure 2. Uneven distribution pattern for spray boom demonstrated on the patternator. The nozzles of height of the boom needs to be adjusted and rechecked.

More information

Spray calibration fact sheets

- Flow meter
- Pressure tester

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