

Annual Pre-Season Sprayer Checklist

for air blast or air-assist orchard sprayers



A GUIDE TO HELP YOU CHECK AND CALIBRATE YOUR SPRAYER – Calibration assists you to accurately calculate and apply crop protection products for optimum efficacy, efficiency and safety. COSOP requires growers to “Use suitable spray equipment that has been calibrated at least annually under field conditions by a suitably qualified person.”

Farm Name and Address			
Operator Name			
Date		Supervisor (if applicable)	
Item Name & Model #			

CHECK

✓	Tick each item as you complete it or NA if Not Applicable to your machine	Actions Required
	Start Clean – Give the unit a full clean down using an air hose and/or high pressure cleaner. Ensure no residues are left from last use.	
	Check and clean filters, replace filters or O-rings if required	
	Check nozzles and clean/replace if required	
	Check tyres for wear and tear, check tyre pressure	
	Check wheel bearings, frame, draw bar and coupling points for wear	
	Check fans and guards for cracks or wear	
	Grease the machine where required	
	Check breaks, lights and in-cab operations	
	Check engine oil level	
	Check Radiator water level and check for leaks	
	Fill water tank with fresh water, check for leaks	
	Run the sprayer, check all hoses for leaks/cracks	
	Check Pressure gauges are operational	
	Complete any maintenance issues found in the above checks prior to calibration.	

CALIBRATE

<p>Calibrate the sprayer so that the application rate in L/Ha or L/tree is known.</p> <p>A. FILL - Half fill the sprayer with fresh water and park on a level surface</p> <p>B. NOZZLE OUTPUT The most accurate method is the Timed Output method. Set the sprayer at operating pressure and check the nozzles are outputting the expected amount of liquid/minute. This can be done using a flow meter or tubes attached to each of the nozzles. Total output of all nozzles combined = _____ L/minute</p> <p>C. SPEED CHECK Set the unit at operational revs, measure 100 m and record time taken to travel 100m at a constant speed = _____ seconds. Conversion factor is 360. Conversion factor divided by seconds recorded over 100m gives your speed. Travel speed = 360 ÷ _____ seconds = _____ km/hr</p> <p>D. CALCULATE THE APPLICATION RATE Application rate (L/ha) = $\frac{600 \times \text{total sprayer output (L/min)}}{\text{row width* (m)} \times \text{travel speed (km/h)}}$ = _____ L/Hectare</p> <p>*For double-sided sprayers use the full row width from tree to tree, for one sided sprayer, use half the row width. Optional – To calculate litres applied per tree, divide the L/Ha figure by your known number of trees/Ha = _____ L / tree</p> <p>Check Coverage – as your trees grow, regularly check your coverage by using water sensitive paper or a dye product. Record date and notes from coverage check here (if applicable) _____</p>
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If the calculated **application rate** is lower than required OR if **coverage is inadequate** you will need to do one or more of the following and then repeat the calibration. ✓ Adjust your speed ✓ Adjust airflow and pressure
 ✓ Improve output by upgrading nozzles, increase fan tower height etc **OR** ✓ UPGRADE YOUR SPRAYER

This template should be used as a guide only. Requirements will vary with different equipment, from state to state and depending on products used. It is the Chemical Users responsibility to ensure that all legal requirements of Chemical Use are adhered to including but not limited to safety, environmental, licencing, regulatory and record keeping requirements. **This document should be read in association with the following industry references** NSW DPI Macadamia plant protection guide - current version; Best practice guidelines for the application of chemicals in macadamia orchards, AMS 2015; Australian Macadamia Code of Sound Orchard Practices (COSOP); Sprayers 101 website <https://sprayers101.com/>; NSW DPI fact sheet – Spray Sense - Calibrating Airblast Sprayers https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0006/186378/airblast-sprayers.pdf