

Vineyard Spraying – Maintenance Check List

Time spent on sprayer maintenance is time well spent. Faulty sprayers can be the cause of disease and lost crop.

Checks in bold need to be done very regularly (eg cleaning filters, checking oil, lubrication, flushing the pump). **Checks with an asterisk*** can make a big difference to the way your sprayer delivers spray to the vine canopy.

Check the manual that goes with your sprayer, because some maintenance needs to be done by licenced dealer or mechanic, or you may void your warranty.

Pre-run checks on a vineyard sprayer

PTO shaft	<ul style="list-style-type: none">▪ Universal joints, sliders and <u>all</u> the cross-bearings are greased. <input type="checkbox"/>▪ The safety guard/sleeve is in good condition. <input type="checkbox"/>
Hydraulic hoses	<ul style="list-style-type: none">▪ Check for any wear or damage to hydraulic hoses. <input type="checkbox"/>▪ Confirm that the hydraulic hoses are pressure-rated. <input type="checkbox"/>▪ Is there any risk of damage/pinching? <input type="checkbox"/>
Oil	<ul style="list-style-type: none">▪ Check for leaks all around the sprayer. <input type="checkbox"/>▪ Check all oil levels (pump, gear box, all oil reservoirs). Change oil if necessary <input type="checkbox"/>▪ Is the oil clear? If oil is milky or contaminated, the seals need replacing. <input type="checkbox"/>
Pressure gauge	<ul style="list-style-type: none">▪ Is the pressure gauge secure? <input type="checkbox"/>
Pump	<ul style="list-style-type: none">▪ Flush regularly to avoid corrosion. <input type="checkbox"/>▪ Pulsing in a diaphragm pump may indicate a split diaphragm. <input type="checkbox"/>▪ Clattering suggests valve springs are broken. <input type="checkbox"/>▪ Check condition of O-Rings on a centrifugal pump. <input type="checkbox"/>
Filters *	<ul style="list-style-type: none">▪ Basket filter in the tank is clean. <input type="checkbox"/>▪ Suction filter is clean. <input type="checkbox"/>▪ Pressure (line) filters are clean (often forgotten). <input type="checkbox"/>▪ Nozzle filters are clean. <input type="checkbox"/>
Nuts/bolts/washers	<ul style="list-style-type: none">▪ Everything tight? In good working order? Check bolts on wheels. <input type="checkbox"/>
Welds	<ul style="list-style-type: none">▪ Do any welds need repairing? <input type="checkbox"/>
Bearings	<ul style="list-style-type: none">▪ Check condition (have any seized?) and apply anti-seize lubricant. Also check wheel bearings. <input type="checkbox"/>
Belts	<ul style="list-style-type: none">▪ Check tension, alignment and wear. <input type="checkbox"/>
Wheels	<ul style="list-style-type: none">▪ Tyre pressure: Hard tyres drive faster - Soft tyres distribute weight better. <input type="checkbox"/>
Hoses	<ul style="list-style-type: none">▪ Do hose sizes match pump capacity? (suction hose diameter must be at least equal to diameter of the pump intake). <input type="checkbox"/>

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Fans *	<ul style="list-style-type: none"> ▪ Check condition of blades (nicks or cracks cause imbalance). <input type="checkbox"/> ▪ Bearings & moving parts: check for tightness and lubricate moving parts; check condition of brackets. <input type="checkbox"/> ▪ Blade pitch and fan gear can be adjusted easily. <input type="checkbox"/>
Ducts or deflectors	<ul style="list-style-type: none"> ▪ Clean, and can be easily adjusted. <input type="checkbox"/>
Grill/Leaf guard	<ul style="list-style-type: none"> ▪ Clean? Secure? Intact? <input type="checkbox"/>
Flow monitors *	<ul style="list-style-type: none"> ▪ Impellers must be clean or readings are incorrect. <input type="checkbox"/> ▪ Bearings wear out, so flush regularly with clean water. <input type="checkbox"/>
Drain plug	<ul style="list-style-type: none"> ▪ Easy to remove. <input type="checkbox"/>

Run-Test - Checks when the sprayer is running, with water in the tank

Pressure *	Check evenness of pressure across the rig (including around each fan manifold on a multi fan sprayer). <input type="checkbox"/>
Hoses	Check for any cracks or leaks when under pressure. <input type="checkbox"/>
Agitation	Check that the agitation system works. <input type="checkbox"/>
Nozzles *	<ul style="list-style-type: none"> Flow rates (L/min) should be accurate to $\pm 10\%$ of specification, at a given pressure. <input type="checkbox"/> Spray pattern: Distortion in the spray patterns indicate wear or blockages. <input type="checkbox"/> Check that the nozzle shut-off or flip bodies work smoothly. <input type="checkbox"/>
Pressure and shut-off valves *	Check that the ball valves or solenoids are working and in good condition. <input type="checkbox"/>

Keep maintenance records

Sprayer:	Vineyard:
Signature:	Date:

Acknowledgements

- *Interlink Pumps and Sprayers: Sprayer Check List.*
- *Southern Cross Ag Machinery - <https://www.sxm.com.au/news/the-basics-of-tractor-implement-maintenance/>*
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- *Sprayers 101 - <https://sprayers101.com/>*
- *Dept Environment and Primary Industries Calibration and preparation of boom sprayers.*

