September 2026

# Technology Update

Issue 003

# Sprayer Productivity: quantifying operational gains

## Key points

- **Spray timing is the priority:** a timely, average application is usually more valuable than an excellent application made after the ideal window has passed.
- **Measure the full spray operation:** time each stage of the spray day to find where minutes are being lost, then target the habits, logistics, or equipment changes that will remove those delays.
- **Focus on the support system:** tender setup, quick-change nozzles, tank monitoring, hose reels, and regular system checks can all reduce downtime and increase productive spraying time.

## Workshop context

During FAR's Sprayer 101 workshops in early August, Tom Wolf and Jason Deveau introduced the Productivity Calculator to grower groups. The tool generated strong interest because it lets growers model different sprayer setups and see how each change affects overall work rate.

The most useful approach is to enter your current practice first, then change one variable at a time. This makes it easier to identify which adjustment is likely to deliver the biggest practical gain.

## Why productive spraying time matters

Every hour a sprayer spends spraying - rather than turning, filling, travelling, or waiting - improves the chance that products are applied inside the ideal timing window. That matters because spray timing often determines whether an otherwise sound application delivers the intended result.

For self-propelled sprayers, productive hours may also affect resale value. If machine value is influenced by total engine hours, then increasing the proportion of those hours spent spraying can improve both operating efficiency and the value recovered at sale.

## Using the Productivity Calculator

The Productivity Calculator is available here:

- Estimate hectares per hour for a specific sprayer configuration.
- Identify time lost to turning, refilling, travelling, and other non-spraying activities.
- Compare practical changes, such as larger tanks or wider booms, without assuming that faster travel speed is the best solution.
- Highlight where workflow, logistics, and equipment setup can improve performance across the whole spray operation.

# Spray Day Time Accounting Checklist

Use this Sprayers 101 checklist to estimate and record the time spent on key sprayer tasks. Recording estimated and actual time helps identify the largest productivity losses and where changes may deliver the greatest improvement.

| Task | Estimated time | Frequency per day | Total est. time | Actual time | Rank |
|---|---|---|---|---|---|
| Fuel, lube | | | | | |
| Clean cab, wash sprayer | | | | | |
| Load jugs and totes | | | | | |
| Check label rates and rainfastness | | | | | |
| Fill tender tanks | | | | | |
| Load sprayer in yard | | | | | |
| Transport to field | | | | | |
| Unfold boom | | | | | |
| Enter field data into monitor | | | | | |
| Check and record weather | | | | | |
| Check pest pressure and crop stage | | | | | |
| Prime boom | | | | | |
| Change nozzles | | | | | |
| Spray one load | | | | | |
| Unplug or replace nozzles | | | | | |
| Repair component | | | | | |
| Make headland turn | | | | | |
| Fill sprayer in field | | | | | |
| Monitor boot-up after shutoff | | | | | |
| Get sprayer unstuck | | | | | |
| Drive to tender truck | | | | | |

| Task | Estimated time | Frequency per day | Total est. time | Actual time | Rank |
|---|---|---|---|---|---|
| Wait for tender truck | | | | | |
| Spray out tank remainder | | | | | |
| Clean tanks | | | | | |
| Clean filters | | | | | |
| Flush boom and boom ends | | | | | |
| Drive back to driveway | | | | | |
| Fold boom | | | | | |
| Load sprayer onto trailer | | | | | |
| Cool-off idle | | | | | |
| Total non-spraying time A | | | | | |
| Spraying time B | | | | | |
| Percent downtime A divided by A plus B | | | | | |

## Follow-up planning prompts

- What are the three biggest productivity losses?
- What options could minimise those losses?
- What goals should be set for winter 2027?

This content is courtesy of Sprayer 101. For more information, go to: www.sprayers101.com

Link to Sprayers 101 article about scenarios in NZ: Sprayer productivity for smaller scales.





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