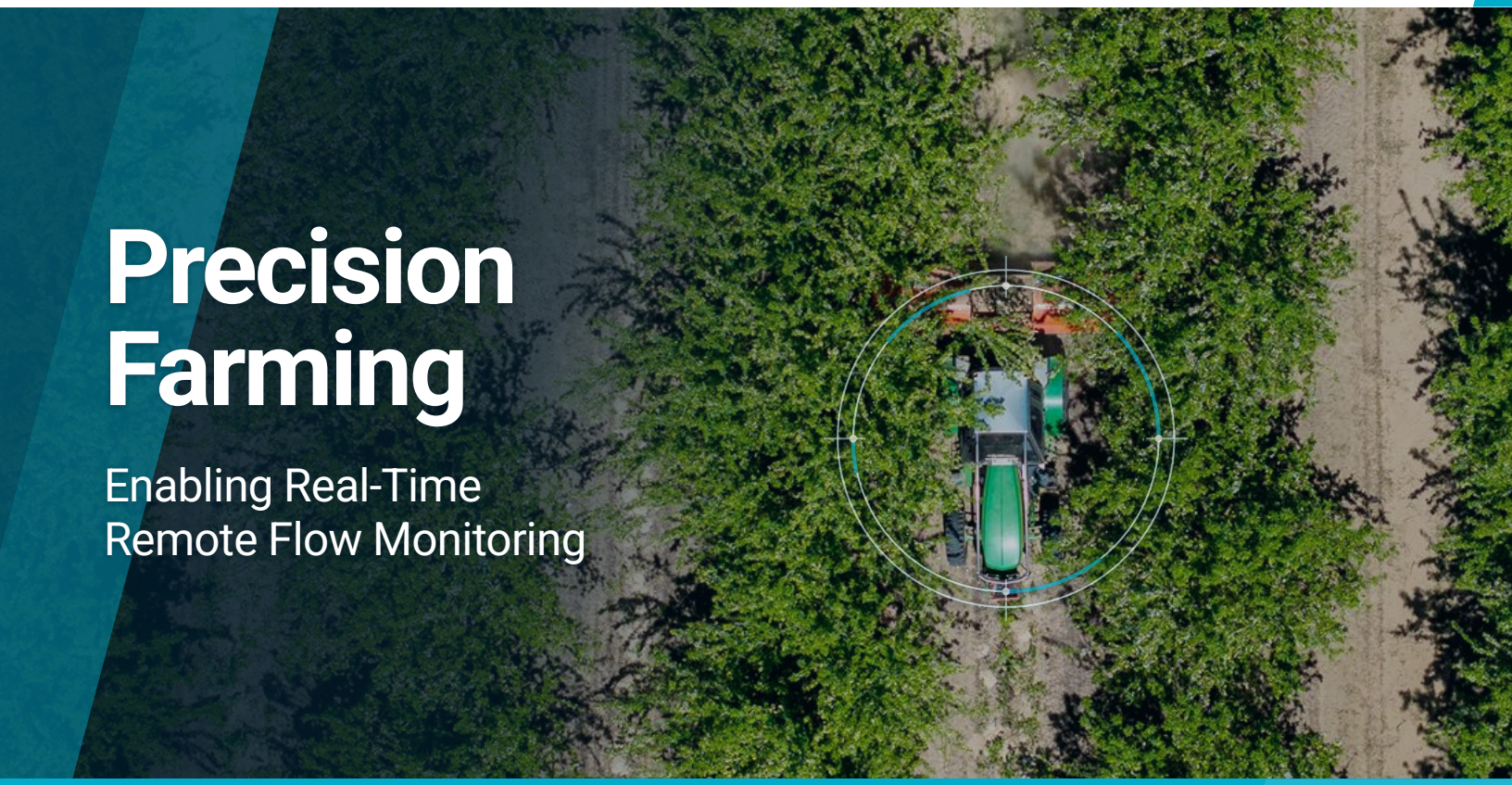
Precision Farming

Enabling Real-Time Remote Flow Monitoring



CHALLENGE

Equipment operators lacked a reliable way to verify that fungicide was being applied consistently across almond orchard rows. Variations in flow, speed, and route execution could result in missed or double-treated areas, creating crop risk, wasting expensive chemicals, and making it difficult to prove application quality.

KEY TELEMATICS ENABLEMENT OBJECTIVES

01

Monitor flow accurately

Implement remote monitoring of flow sensor, calculate and ensure fungicide is dispensing within set thresholds

02

Track precise route coverage

Track the sprayer's route and headland turns to ensure even treatment across rows, avoiding any missed or overlap areas

03

Monitor speed for optimal application

Compare recorded speed against the recommended range to identify passes that need review.

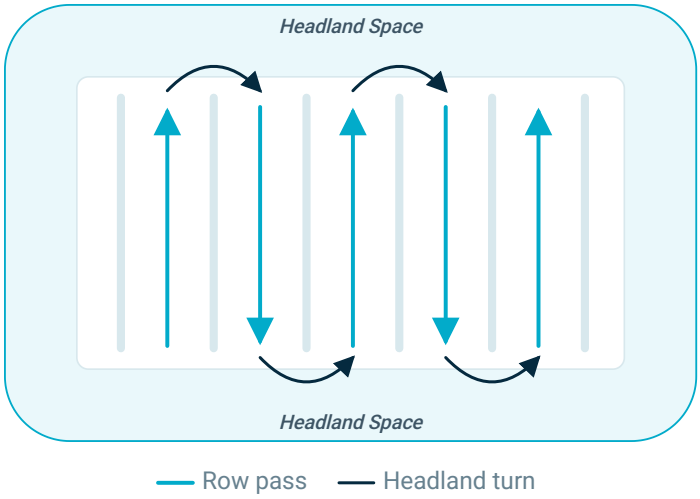
SOLUTION

Real-Time Flow Monitoring

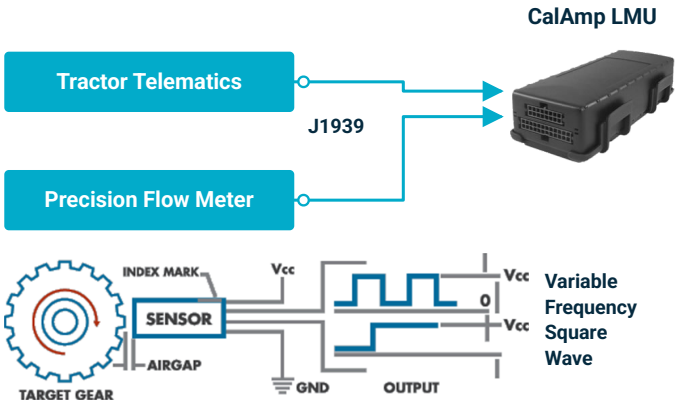
CalAmp integrates precise GPS tracking and real-time sensor reading to ensure accurate fungicide distribution, effective resource management, and optimized operational efficiency across almond orchards.

Implementation: Sensor Flow Monitoring

ROUTE & COVERAGE



SIGNAL CHAIN



Solution Overview

1 **LMU is wired to tractor, supporting J1939 protocol for vehicle data**

2 **LMU is wired to Precision Flow Meter**

- Check that liquid flow is within optimal thresholds (e.g. **80–110 gallons per acre**)
- Frequency counter inputs to monitor wheel's rotation speed, accurately calculating the amount of fungicide dispensed

3 **Driver Monitoring**

- Monitors speed, to ensure vehicle is not moving too fast or slow (**2.75–3 MPH**)
- Tracks turning maneuvers to improve accuracy and reduce potential for missing or double-treating rows

THRESHOLD PARAMETERS

80–110 gallons per acre
Target liquid flow range

2.75–3 miles per hour
Optimal ground speed

Full Row Coverage
Tracks headland turns and overlap

Better Business Outcomes

The solution optimizes farming operations by precisely tracking fungicide distribution, enhancing driving performance and optimizing resource allocation, maximizing crop yield and profitability.

Maximize Yield-to-Input

Optimizes fungicide application that maximizes yield-to-input ratios, saving $$

Lower Crop Disease Risk

Lowers the risk of crop disease through precise tracking and fungicide application

Reduce Waste, Boost ROI

Improves driving techniques to reduce waste and boost ROI

WHY PRECISION PAYS



UNDER-APPLIED	IN BAND	OVER-APPLIED
Disease gets through. Yield and quality loss.	**80–110 gal per acre 2.75–3 MPH**	Wasted product, plus label and residue exposure.

Across 1,000 acres: cutting fungicide use by 10% saves $23,400. Losing just 1% of the crop costs $44,800. The flow meter keeps you off both edges.

* Fungicide $234 per acre across six applications, so a 10% reduction saves $23 per acre. Yield 2,800 lb per acre at $1.60 per meat pound, so 1% is $45 per acre. Figures above are those per-acre amounts across 1,000 acres. UC Davis / UCCE, *2024 Sample Costs to Produce Almonds, San Joaquin Valley South* (published August 2025). Thresholds as specified for this deployment.

Ready to bring precision monitoring to your connected platform?

CalAmp can help you turn sensor data into operating thresholds your customers can act on. Extend your existing telematics program or build something new.

With 10M+ connected assets, decades of telematics expertise, and 220 approved and pending patents, CalAmp helps OEMs build differentiated connected solutions, get to market faster, and scale with confidence.

Talk to an Expert →

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