

# Turning Orange Into Green

AUSTRALIAN CARROT OPERATION UTILIZES HIGH-SPEED PIVOTS



Imagine 25,000 acres (10,117 ha) of carrots, onions and potatoes wilting in scorching 113-degree (45C) heat. Mark Pye, managing director, Parilla Premium Potatoes, doesn't take that risk at his operation in Mallee, Australia.

He's found that Zimmatic's high-speed motor is the best way to irrigate his carrot crop because the first six weeks of germination is critical. A seven-tower pivot with a 43 RPM motor can complete a circle in under 13 hours, compared to more than 16 hours for a competitive system with a 34 RPM motor, which equals a 27 percent savings.

Pye is using an 86 RPM motor running at 50 hertz which gives the motor a 71 RPM speed for even greater savings.

The high rate of speed helps resist the effects of sizzling temperatures and wind drift. "Center pivot

irrigation offers a better distribution reliability, a clear harvesting path and is not affected by wind. Quality and yield are excellent compared to other irrigation methods," Pye said.

Because of the sandy soil in his area, Pye uses barley as a cover crop to protect the carrots from wind drift. The barley seed is planted on the carrot beds before the carrots are planted. After the carrots are up and the barley is 2-3 inches (51-76 mm) high, the cover crop is sprayed out.

It typically takes four hours per half pivot with a VFD (variable frequency drive) pump over 65 acres (26 ha). One hundred and twenty acres (49 ha) are covered in 16 hours on a 95-degree (35 C) day.

VFDs are important in the extreme weather conditions in midsummer, and take the wear and tear out of the driveline by ramping up and down and allowing higher hertz to be used.

## BENEFITS OF IRRIGATING CARROTS WITH PIVOTS

- Uniform germination and emergence
- Requires less water
- Reduced labor costs
- Lower operating costs
- Precision application of fertilizer, herbicides, fungicides and insecticides
- Reduced wind drift
- Excellent quality and yield



Anthony Plum (left), carrot farm manager, and Mark Pye (right), managing director, Parilla Premium Potatoes.

**"I haven't lost any crops due to pivot downtime, and I'd tell other growers thinking about irrigating carrots with pivots to give it a go."**

*– Mark Pye*

FAST FACTS – PARILLA PREMIUM POTATOES PTY LTD

- South Australian horticultural farm established in 1990
- Produces 60,627 tons (55,000 MT) of fresh produce a year
- Raises potatoes, onions, Nance and Red Hot carrots and cereal crops
- Cool storage facility holds 3,306 tons (3,000 MT) of produce
- Supplies the fresh potato market 365 days a year
- Ships to large food retailers and other supermarket chains



Mark Pye uses high-speed Zimmatic pivots to irrigate carrots in the scorching heat of Mallee, Australia. Photo top right: carrots being harvested at the farm. Bottom right: VFD (variable frequency drive) control panel which Pye uses as part of his irrigated carrot operation.

The soil type in this area is sand over clay and limestone, with an average annual rainfall of 12 inches (30.5 cm). Temperatures can reach up to 113 degrees (45 C) in summer with low humidity.

Evapotranspiration rates can get as high as .55-.62 inches (14-16 mm) per day.

Pye moved from New Zealand in 1990 to grow potatoes for processing. While in New Zealand, he worked on his “market gardening technique” during holidays from school, and at age 18 he leased 30 acres (12 ha) of land from his family to grow Japanese pumpkins for export to Japan. This gave him the

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capital to buy into dairy cattle, which he sold to fund Parilla Premium Potatoes.

Pye utilizes Online Control, easy-to-use computer software from Zimmatic, to manage 62 pivots that reduce labor costs and vehicle breakdowns, and help identify system failures to lessen the risk of crop damage in extreme weather conditions.

“It only takes one person to look after 400 acres (162 ha).”

“I haven’t lost any crops due to pivot downtime, and I’d tell other growers thinking about irrigating carrots with pivots to give it a go.”

**For more information about Zimmatic and Lindsay irrigation solutions, visit [www.zimmatic.com](http://www.zimmatic.com) or talk to your Lindsay dealer.**

SOURCE: Mark Pye and Lindsay.

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