Reduction in soil borne disease

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Center West Exports (CWE) based in Woodridge covers an area of 1000 acres of fixed and pivot irrigation for carrot production.

The founder of the company and now Managing Director, Frank Tedesco, has been in the vegetable industry all his life and has gained a reputation as a quality grower and combined with his passion for perfection, has made Center West Exports, the export side of the company, into a major exporting force.

The company has, since its inception, been synonymous with a quality product. Growing bigger is not the company's focus; instead, providing a cost competitive, quality product for export to a range of world markets is the company driver. At present the company exports to Asia, Japan, Hong Kong, Taiwan, the Middle East and the Maldives as well as supplying local and Eastern State markets.

WA's horticulture production value **$702m**

The Soil Wealth & Integrated Crop Protection team have been working with the Tedesco's to demonstrate the benefit of compost and other soil amendments in improving soil health and enhancing crop protection from diseases.

The partners at this demonstration site were C-Wise who are developing a custom compost product to suit the production system.

A large scale compost trial was conducted with Center West Exports and C-Wise in the Gingin area of WA from June 2016 to February 2017. Center West Exports provided a 10ha trial area under solid set irrigation.

The focus was on disease suppression, mainly cavity spot, and maintaining organic carbon and structure in intensively cropped, sandy soils. Fresh organic matter such as manure cannot be used in the Gingin area due to stable fly issues; food safety requirements also mean that fresh manure should not be used prior to a carrot crop. Any organic amendments had to be well composted; they also needed to be of a quality than can be repeatedly produced.

▶ A large scale compost trial was conducted with Center West Exports and the Soil Wealth and Integrated Crop Protection projects in the Gingin area of WA.

A

B

C

- **A:** Humicarb @ 50m³/ha (19/09/2016).
- **B:** Control (19/09/2016).
- **C:** Inspecting for root damage in early growth stage.

C-Wise provided two types of compost — 'Humicarb Compost' and 'Premium Compost'. These were both used at 30t/ha and 50t/ha in two replicates of 0.5ha each. Untreated control areas did not receive compost.

Data collection included:

- Soil analyses before and after planting (nutrients, pathogen DNA by SARDI)
- Pre-harvest assessment of roots against CWE grading criteria
- Carrot root analysis (nutrients)
- Commercial grading by CWE
- Field observations and photos.

The results can be summarised as follows:

- Compost reduced Pythium and Rhizoctonia levels in the soil
- Compost increased phosphorus availability in the soil
- Compost had no effect on soil pH
- Nitrogen (N) levels in carrot roots were lower in composted areas while levels of available N in the soil were higher
- In composted areas, carrots had higher potassium levels, up to double that of the control.

The total concentration of nutrients in the carrot roots increase with increasing compost rates and compost quality. The nutritional differences may have resulted in taste and shelf life differences. This is something which still needs to be investigated.

Compost should have longer term benefits and we will look at these in the coming seasons.

MORE INFORMATION ▶

You can follow the progress of the demonstration site on the **Facebook** page, or find out more information **www.soilwealth.com.au**

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