

Precision Agriculture Project

Beswick Holdings, "Depot Farm", Sisters Creek

Site details

- predominantly ferrosol (red/brown light clay loam over dark red/brown light clay, with patches of grey/brown sandy loam over light sandy clay)
- 21 ha paddock, linear-move irrigator
- 2015-16 crop – processing potatoes
- 2016-17 crop – processing carrots
- representative of north-west cropping enterprises with some variation in soil type within a broad red ferrosol landscape

Data layers

EM38 and soil pH were collected in the previous season.

In-season imagery

No flights were made for NDVI in the past season, and the satellite service (i-EKbase) proved to be too unreliable with cloud cover.

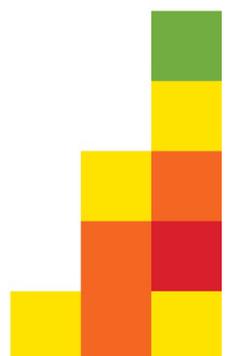
Yield variability

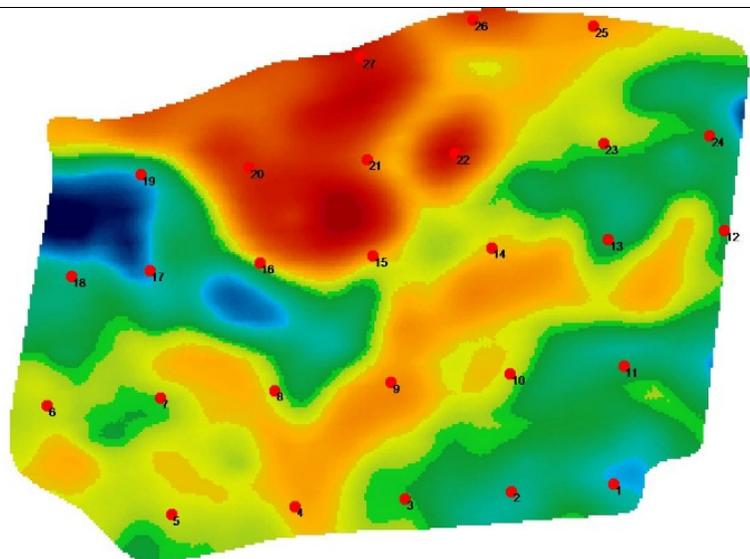
Yield samples were taken from 27 points in a regular grid across the paddock – see images on next page. This represents about one sample per hectare. Samples were taken from the range of soil conditions present. At each sample location, carrots were dug from 4 rows x 0.75 linear metres of bed length. Waste was rejected in the field and good carrots weighed. Details of the yield variability are shown in the table below and in the graphs on the last page.

Crop	Measure	Units	Average	Min	Max	Variation (max:min)
Processing potatoes	Total yield	t/ha	61.5	10.3	86.9	8.4
	Yield >250 g	t/ha	38.4	0	59.7	infinite
Processing carrots	Total yield	t/ha	94.8	11.8	124.8	10.6

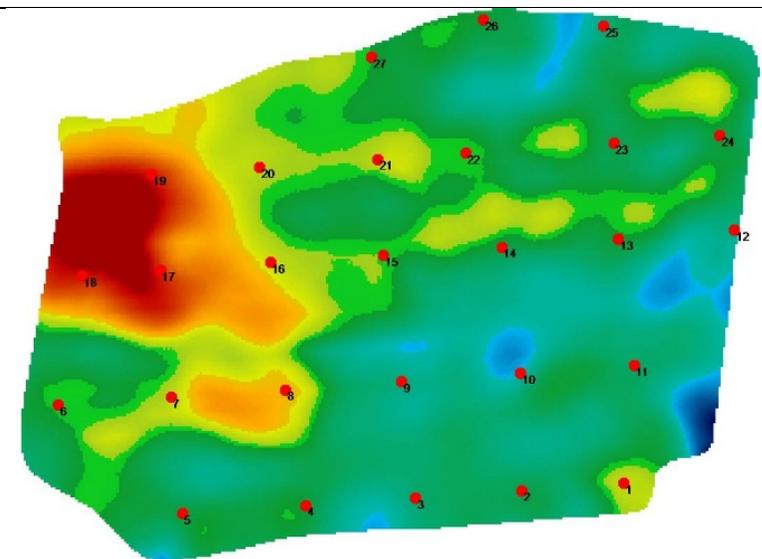


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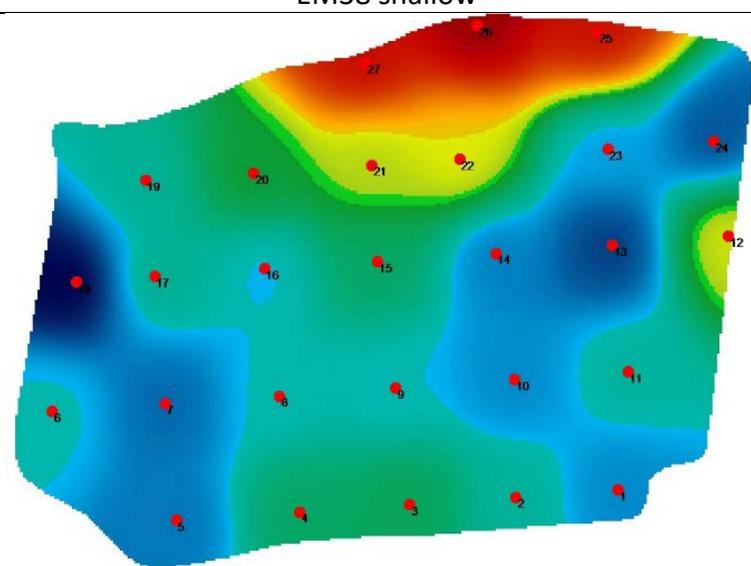




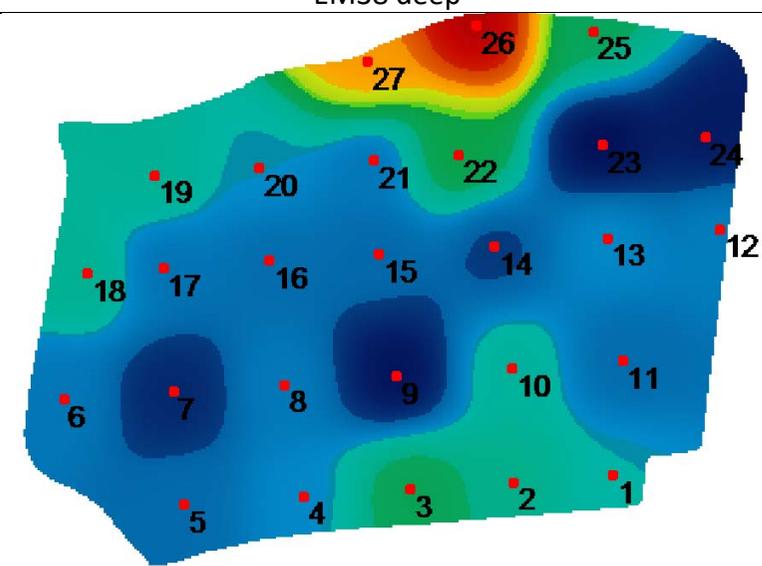
EM38 shallow



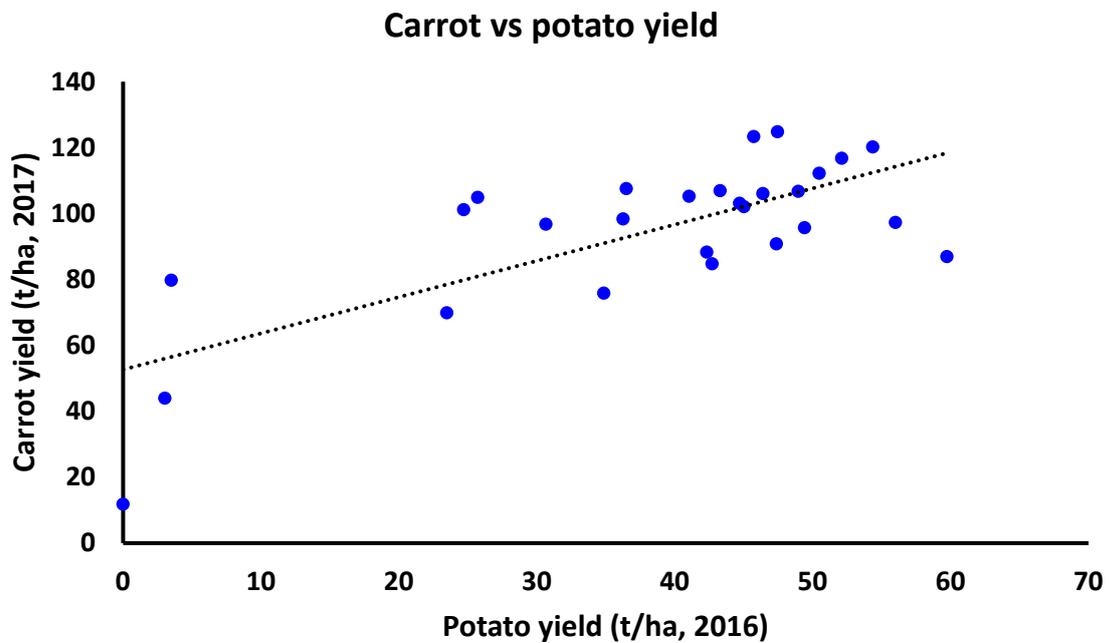
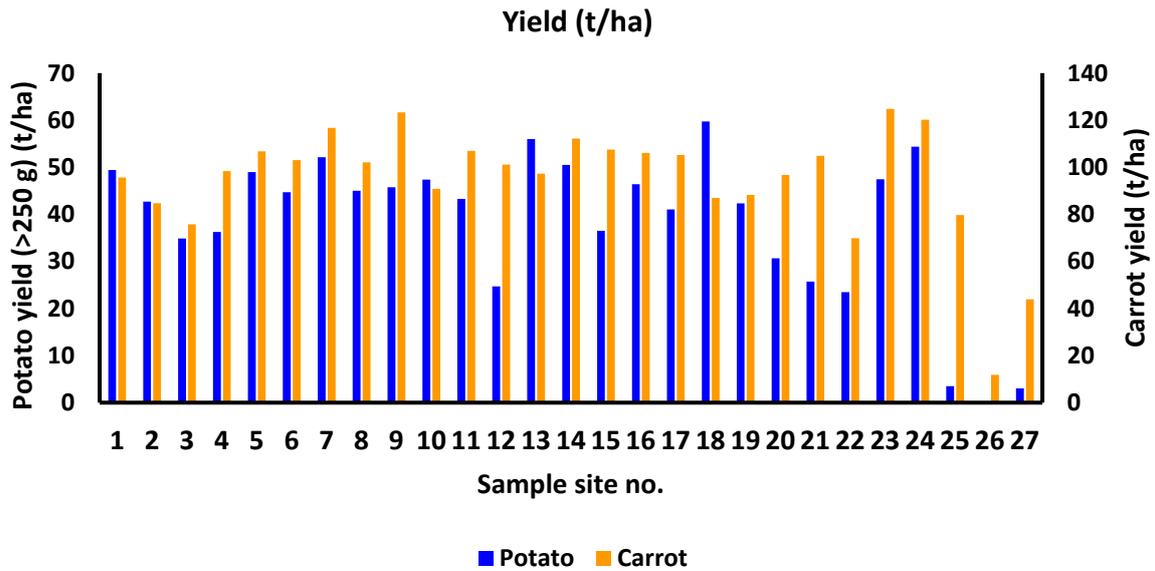
EM38 deep



Potato yield >250 g (2016)



Carrot yield (2017)



Comments

It seems that carrots fared better than the potatoes in the lighter soil at the top of the hill (points 21, 22, 25, 26 and 27). Part of the reason for this could be because if a carrot wasn't classed as waste due to disease or similar, it counted as yield, regardless of size, whereas the potatoes had to meet size grade to count as yield. There are a few sample points where the carrots yielded reasonably well but potatoes did poorly. For example, point 12 was low for potatoes (headland sample), but it yielded above average for carrots.

Phil has fitted yield monitoring equipment to one potato harvester but it was too late for this paddock in 2016. The next crop planned for this paddock is linseed or hemp.