

# RBOrganic Farm

Joe Rolfe



- 100% Organic vegetable growing business formed in 2004
- Based at Houghton Hall (Norfolk)
- Long term land agreement with available water (key resource)
- Additional tenancies in Norfolk with water
- Certified by Soil Association Certification









# What do we grow?



- Carrots 6000t, Potatoes 2500t (1500t Whites, 1000t Salads) , Onions 1000t, JV on Leeks
- 99% sold in retail/export
- New varieties – trials & commercial
- Hand weeding (100+ seasonal staff)
- 5 full-time staff and contractors for specific tasks



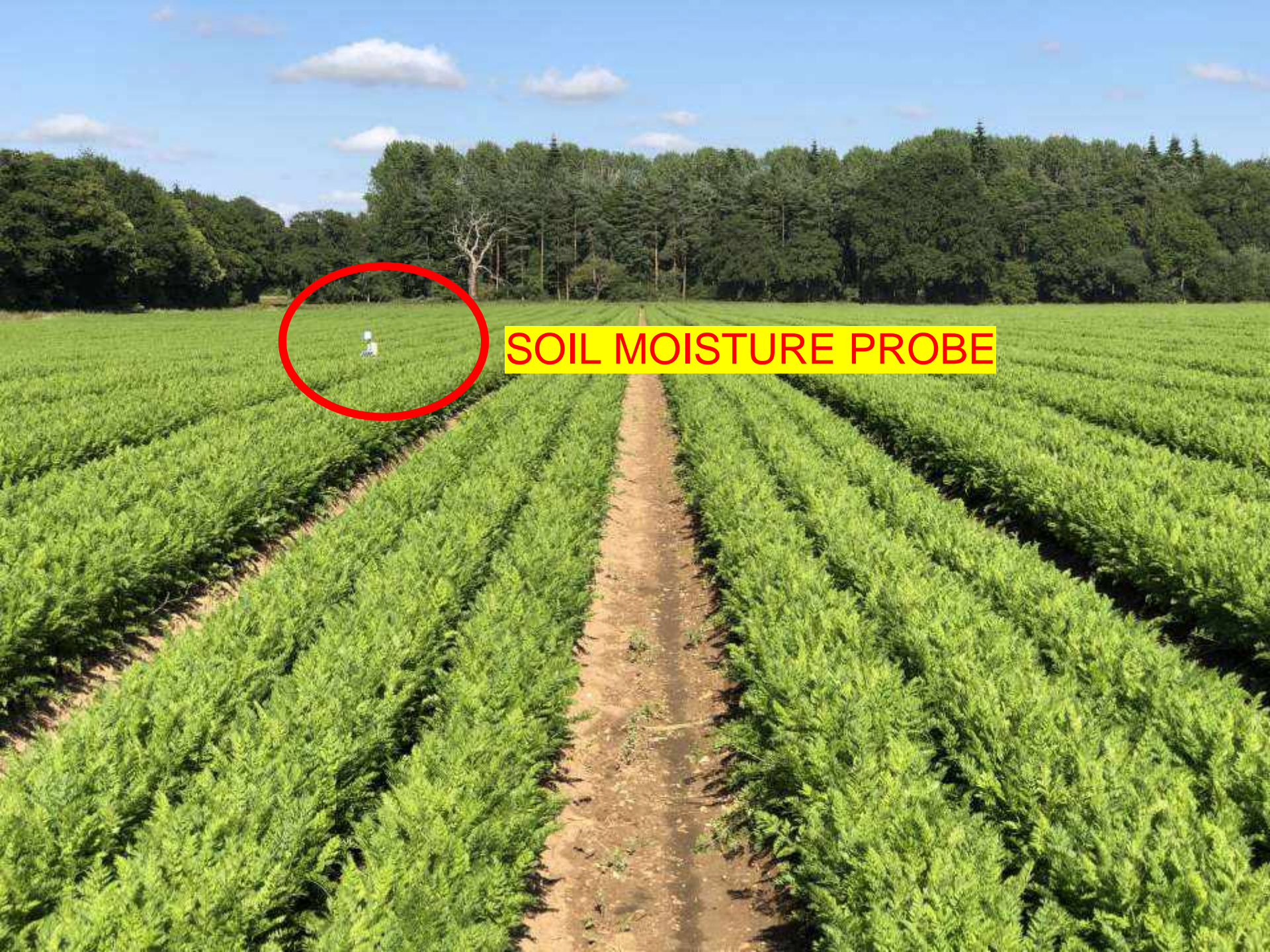




# Soil Management

- *Why is soil management important?* Resilience is key as the climate changes...
- Converting to Organic
- Rotation is critical in reducing weed burden.
- Building SOM %
- Use of FYM as fertility and soil conditioner (healthy living soils)
- Winter cover crops (Oil Radish)
- Breaking pest pressure/cycles
- Livestock make up a key part of the rotation
- Understanding true crop requirement (Soil Sampling)
- Carbon Sequestration
- Water management (soil moisture probes)





**SOIL MOISTURE PROBE**





**AGRICOLGY**  
SUSTAINABLE PRACTICAL FARMING









	2019	2018	2017	2016	2015	2014	2013	2012
	Rain (SUM mm)	Rain (SUM mm)	Rain (SUM mm)	Rain (SUM mm)	Rain (SUM mm)	Rain (SUM mm)	Rain (SUM mm)	Rain (SUM mm)
January	18.8	32.2	31.8	65.6	45	99	27.6	36.4
February	25	35.2	48.2	25	53	52.2	30.8	9.4
March	44.2	61	46.2	70.6	27	25	45	42.6
April	8.2	68.2	22.4	58.6	18.6	19	12.4	43.2
May	35.4	48.6	59	42.2	44.4	97.6	51	7.8
June	129	16.8	100	93.6	22	49.8	20.6	105.2
<b>6 month total</b>	<b>260.6</b>	<b>262</b>	<b>307.6</b>	<b>355.6</b>	<b>210</b>	<b>342.6</b>	<b>187.4</b>	<b>244.6</b>
July	32.8	36.8	82.6	41.6	115.6	27	25.8	115.8
August	41.4	49.2	33.4	53.4	95.4	98.8	59.2	79.4
September	73.4	26.6	68	55.4	41	17	45.2	35.6
October	70.2	48.8	28.4	51.2	54	69.8	116.8	75.4
November	85.6	40.6	58.6	61.4	74.6	64	63.2	104.2
December	60	53.6	85.8	22.4	60.4	46.4	34.8	78.6
<b>6 month total</b>	<b>363.4</b>	<b>255.6</b>	<b>356.8</b>	<b>285.4</b>	<b>441</b>	<b>323</b>	<b>345</b>	<b>489</b>
<b>12 month total</b>	<b>624</b>	<b>517.6</b>	<b>664.4</b>	<b>641</b>	<b>651</b>	<b>665.6</b>	<b>532.4</b>	<b>733.6</b>





# Production systems to buffer pests and diseases

- Carrot Fly
  - Learning about pest life cycles and habitats key
  - Carrot Willow Aphid
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- Creating habitats that beneficial insects can flourish in
  - Integrating this approach in to commercial scale farming



# Production systems to buffer pests and diseases

- **Life-cycle**
- First generation adult flies are often on the wing when cow parsley is in full flower at the end of April. They migrate into crops from nearby sheltered areas such as hedgerows. The adults are very weak fliers and rarely rise above a height of 50 cm. Eggs are laid into soil crevices around the base of host plants. Depending on temperature the larvae usually hatch in about one week and feed on the plant roots. Further damage can be caused by the larvae moving from plant to plant. After completing three growth stages (moult) the larvae pupate in the soil. The transition from egg to adult can be completed in 3 months. Carrot flies can survive the winter in a variety of different ways. The adults can survive by sheltering in warm protected environments, the pupae can overwinter in the soil or the larvae can survive in the roots of host plants, especially in crops which have been covered with straw for protection from cold weather. There are usually two generations per year but a third generation is possible especially if temperatures remain high into the autumn. The first generation arises in late April/early May and the second is on the wing in late July. It is the first two generations which are responsible for economic crop damage









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# Critique of Organic Farming systems

- Higher cost of production
- Reliance on labour (cost, availability, reliability, skills).
- Perception of lower yields, but high quality
- Robotics may be the answer to some of the efficiency challenges, but it needs to get here quickly
- Ploughing/Cultivations is controversial but important

# Thank You for listening!

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