ACE Orchard Update

ACE Experimental Orchard
Write a description for your map.
ACE Orchard Update

Orchard Layout – Horizon 1

- Based on the traditional planting design (318 trees/Ha)
- Planting density – 7m x 4.5m
- Current tree architecture
- Ground harvesting
- Trials aimed at improving productivity and practices for current orchards
  - Water Use Efficiency
  - Fertiliser Efficiency
  - Chemical Efficacy and Product Registration Trials
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Orchard Layout – Horizon 1

- First trial planted Winter 2017
- Traditional Varieties
  - 50% Nonpareil, 25% Monterey and 25% Carmel
- 6 Ha drip irrigated
- Nemaguard rootstock

- Second trial to be planted in Winter 2018
- Soil Amelioration Trial
  - Planted to Nonpareil and new Australian varieties
- 7.26 Ha drip & sprinkler irrigated
- Garnem rootstock
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Orchard Layout – Horizon 2

• Aim to investigate increased productivity from tighter spacings
• Higher density plantings (513 trees/Ha)
• Planting spacing 6.5m x 3m
• New Australian varieties OR varieties suitable for higher density
• Testing scion/rootstock compatibilities
• Assessing tree architecture & light interception
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Orchard Layout – Horizon 2

- First trial planted Winter 2017
- 25% Nonpareil, 25% Vela, 25% Carina and 25% Maxima
- Nemaguard rootstock
- 5.6Ha drip irrigated
- Randomised row plantings
- Ability to test self fertile properties on pollination

- University of Adelaide Breeding selections
- 4.48Ha
- Secondary evaluations of 10 tree lots
- Tertiary evaluation of 72 tree lots (1 row per variety)
- International varieties planted for comparison
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Orchard Layout – Horizon 3

- Blue sky vision
- Higher density plantings:
  - 1,111 to 1,666 trees/Ha
- Focus on more upright tree architecture
- Aim to implement shake ‘n catch harvesting
- Trialing dwarfing rootstocks and scion capatibility
- Designing the correct tree architecture first, then the correct tree density, and finally engineering of the harvesting method
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Horizon 3

- Autonomous machinery
- Drone technology
- Mid-row management
- Green harvesting and infield hulling
- Advanced storage practices
- Pollination - Testing the benefits of self fertility
- Pollinator habitat
Thank you

Questions???