

Maluma²⁰¹⁶ DAY

Principles and practices for modern farming

Zander Ernst



“...orchards utilized trees on seedling rootstocks and had large globular shaped tree canopies that allowed cattle to graze under the trees. Most orchards were planted at a density of 70-100 trees/ha. The tree height was reduced from 6-8m to 4-5m and tree density was increased from 70-100 trees/ha to 250-350 trees/ha ”



“In the early *1900's*, most *commercial apple* ...orchards utilised trees on seedling rootstocks and had large globular shaped tree canopies that allowed cattle to graze under the trees. Most orchards were planted at a density of 70-100 trees/ha.” (Robinson, 2003)

“Today, tree densities of modern apple orchards range from 1,000 to 6,000 trees/ha with some systems using densities up to 10,000 trees/ha.” (Robinson, 2003)



In farming we are challenged with a great array of challenges...its not how we complain that makes us better, but rather the *problem-solving ideas* and *innovative methods, superior genetics* and *advanced research* that allows us to become better and outperform these same hurdles.



Modern Farming and Maluma

ZR Ernst - Allesbeste



Allesbeste



"Kwaliteit weens passie"
"Quality through passion"

Apples

- Production per ha
 - 15 – 45 t/ha
- Up to 2400 trees/ha
- 1.5 – 2.7m apart
- More or less 2.5m high
- Dwarfing rootstocks
- Pruning techniques
 - Central leader (1970's) / spindle
 - Perpendicular V
 - Weights, toothpicks, wires
- Longevity 10 – 15 years



Pears

- Production per ha
 - 15 – 38 t/ha
- Density, pruning much same as apples

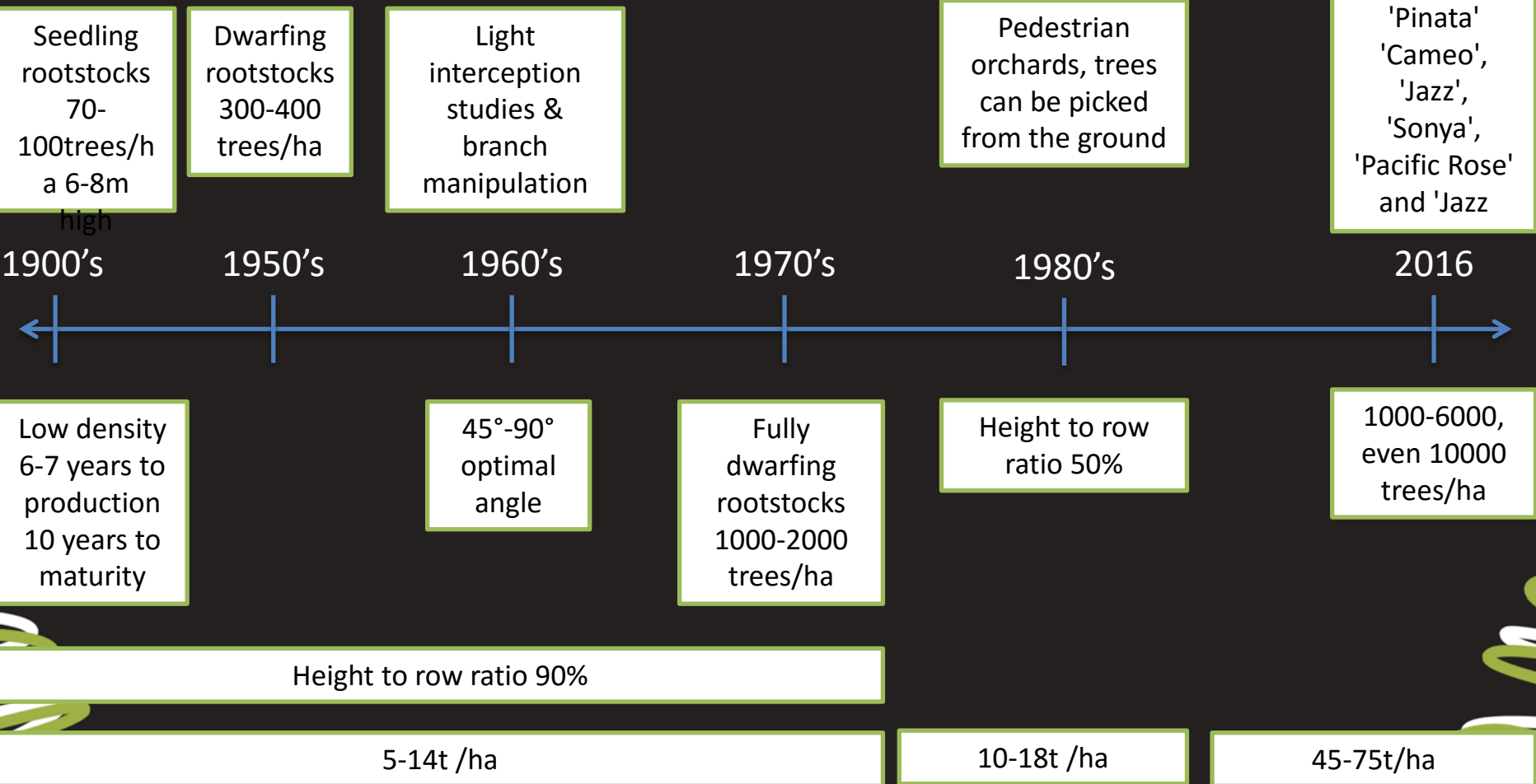




Peaches

- Production per ha
 - 16 – 34 t/ha
- Plant density
 - 370 - 1946 trees / ha
 - 4.2m x 6m to 1.21m x 4.26m
- Dwarfing rootstocks
- 12 – 18 year lifespan

The apple timeline



So that was just perhaps a part of it, *production* and *density*. So what more are we lagging behind on?



- Understanding of the phenology of the tree is limited
- Cultivar choices and selections
- Rootstocks – Trained for Phytopthera tolerance in stead of production
- Understanding of irrigation
- Added Value (packaging, processing, niche markets)
- Optimal production size - economies of scale
- Mechanisation (planting, harvesting, etc)
- Pruning techniques and true understanding of the tree
- Fertigation application / fertiliser needs tied to phenology
- Pollination efficiencies
- Mulch / cover crop management- reflective mulches
- Land preparation
- Market access
- Spraying programs
- Product handling and supply chain management
- Orchard management techniques and processes
- Labour efficiency, measurement and norms

The list goes on...



Although we *don't believe it*, compared to most industries, we've been having it easy. Otherwise we would have been forced to find those same answers, a lot faster.



The message we want to convey with this year's *Maluma day*, is that it's our passion to be the ones to embrace this *dynamic uncertainty*. We need to identify the change that we want to see, and *determine how* to get there.

Enjoy the day!!!

