

The New Zealand Institute for Plant & Food Research Limited

Plant & Food
RESEARCH

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Poplars stabilising soil on slopes NEW CLONES ADD RESILIENCE

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New Poplar clones 1

Populus maximowiczii x P. nigra

- Fastigiate (narrow) form, high wind resistance
- Rust resistance
- Quick growing
- Few double leaders
- Variation in growth rate
- Four clones
- Straight trunk
- Four clones: *Geyles*, *Mapiu*, *Hororata*, *Pecam*
 - NZ5034 NZ5035 NZ5033 NZ5036



Trialled under testing field conditions

Maxi-nigra



New Poplar clones 2

Populus deltoides x P.ciliata

- Variable rust resistance
- Variable growth
- Broader branching, wind tolerant
- Straight trunk
- Three clones: Kaimai, San Rosa, Rotorangi
 - NZ5025 NZ5026 NZ5027

Deltoides x ciliata

San
Rosa



Rotorangi



Kaimai



Rotorangi

New clones below ground

We know that these clones add variation to the commercial gene pool in relation to above ground performance

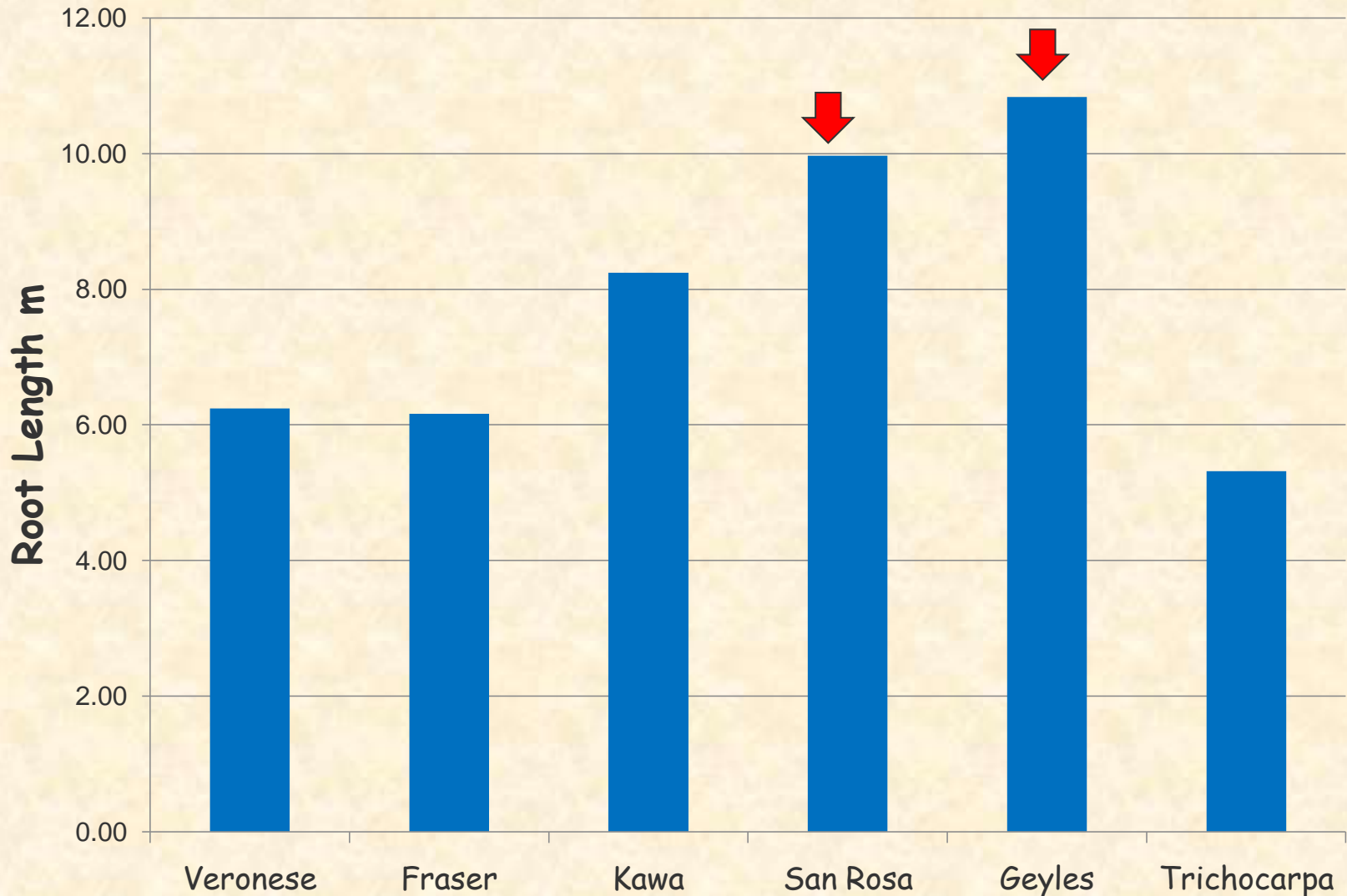
Rooting characteristics in a nursery setting are shown in the next graph

Rooting performance on hill slopes are governed by different rules

Environmental demands shape root development

Comparison of the clones

Root production of nursery grown cuttings after one year

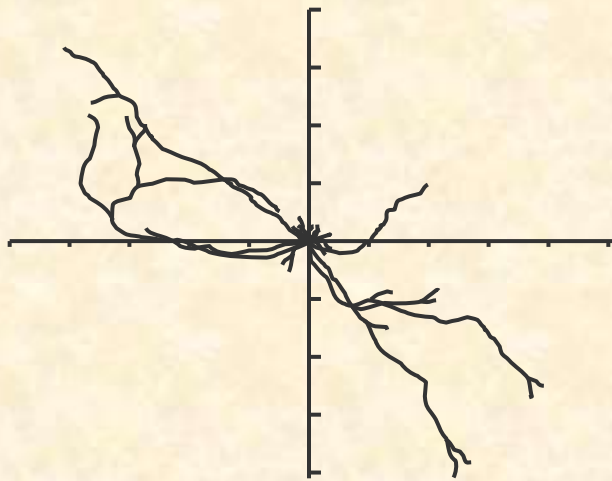


Factors affecting root development

- Plant genetics
- Competition
- Above ground stress

- Soil nutrients
- Water supply

- Soil bulk density
- Slope
- Soil depth
- Nature of the bedrock



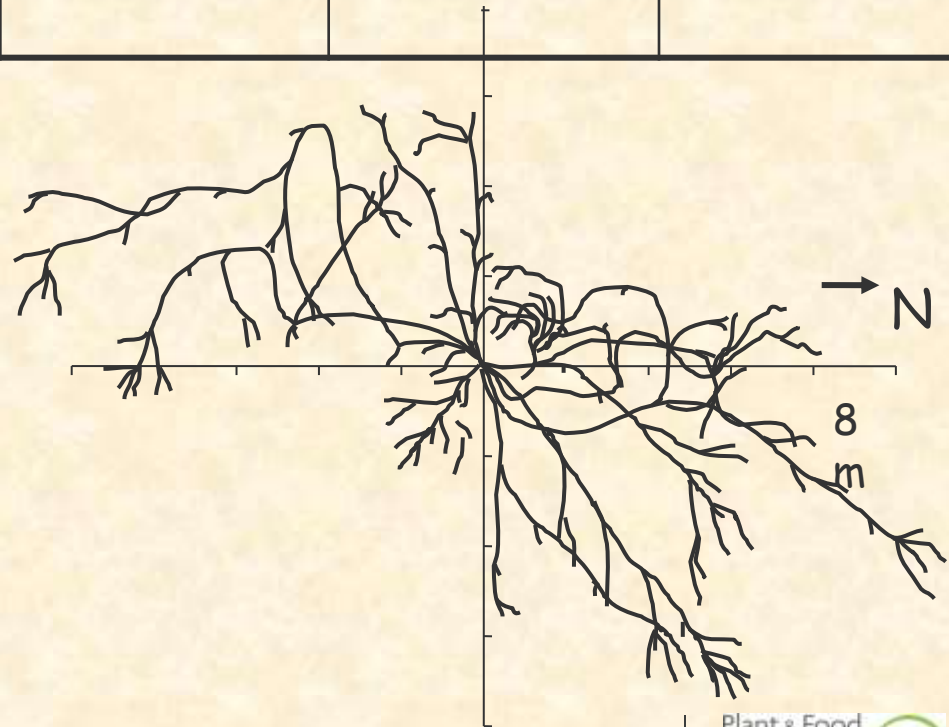
5 yr	0.57 kg	79.4 m
7 yr	7.8 kg	349.3 m
9.5 yr	17.9 kg	663.5 m

8
m



8
m

Downslope



8
m

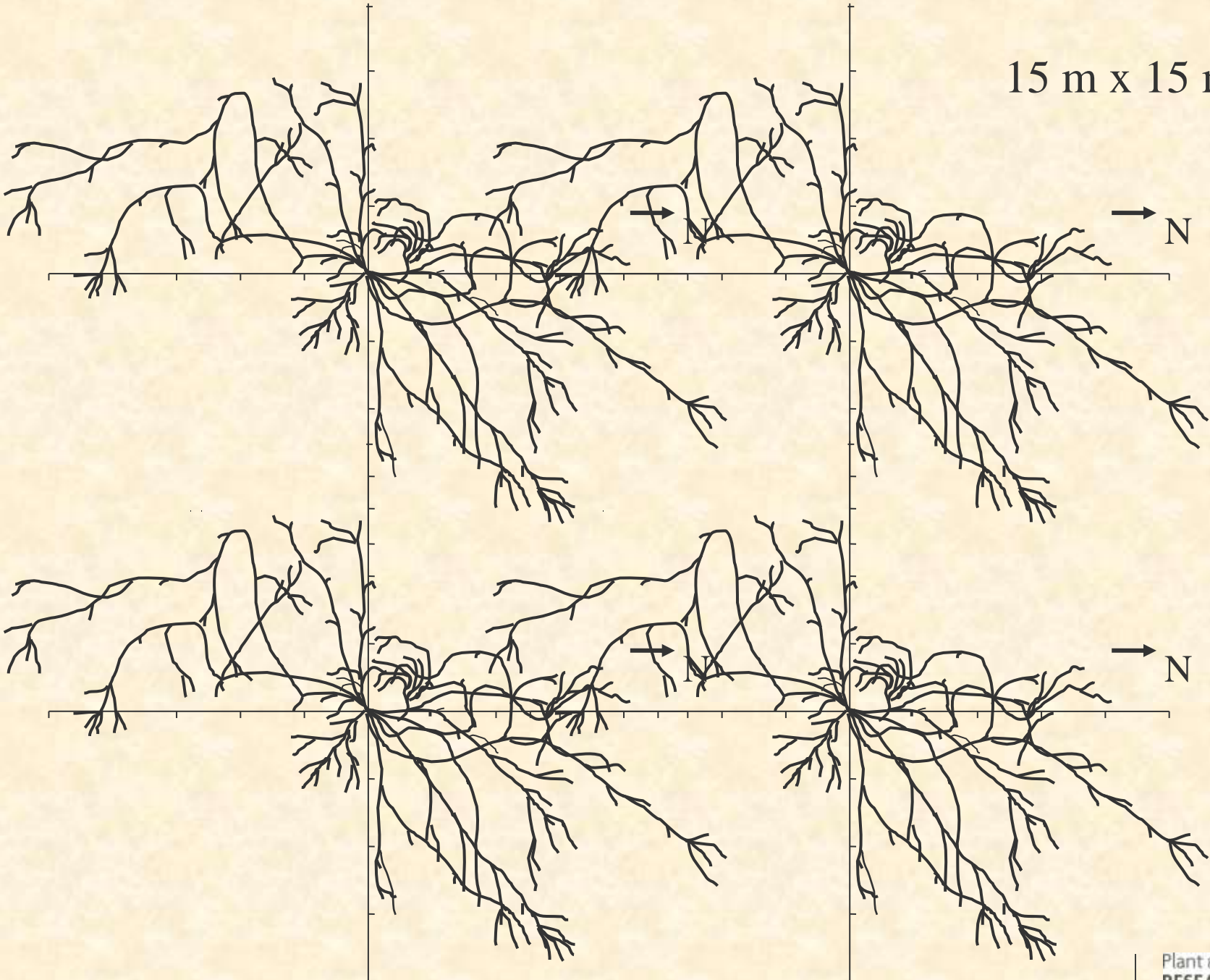
8 m x 8 m



10 m x 10 m



15 m x 15 m





Management Strategies

Choosing

- species
- needs

Spacing

- risk
- cost

Pruning

- Growth
- enduse

Pollarding

- Size
- fodder

