



# Puriri

## Vitex lucens

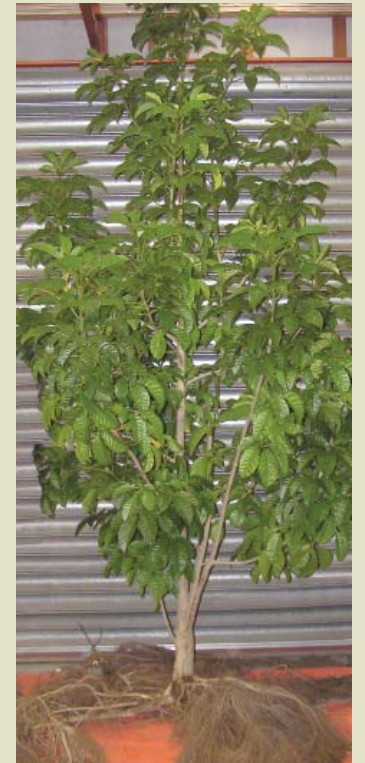
### INTRODUCTION AND METHODS

Reasons for planting native trees include the enhancement of plant and animal biodiversity for conservation, establishment of a native cover on erosion-prone sites, improvement of water quality by revegetation of riparian areas and management for production of high quality timber. Significant areas of the New Zealand landscape, both urban and rural, are being re-vegetated using native species. Many such plantings are on open sites where the aim is to quickly achieve canopy closure and often includes the planting of a mixture of shrubs and tree species concurrently. Previously, data have been presented showing the potential above- and below-ground growth performance of eleven native plant species considered typical early colonisers of bare ground, particularly in riparian areas (<http://icm.landcareresearch.co.nz/research/land/Trial1results.asp>). In this current series of posters we present data on the growth performance of six native conifer (kauri, rimu, totara, matai, miro, kahikatea) and two broadleaved hardwood (puriri, titoki) species most likely to succeed the early colonising species to become a major component in mature stands of indigenous forest (<http://icm.landcareresearch.co.nz/research/land/Trial2.asp>). Data on the potential above- and below-ground early growth performance of colonising shrubby species together with that of conifer and broadleaved species will help land managers and community groups involved in re-vegetation projects in deciding the plant spacing and species mix most appropriate for the scale of planting and best suited to site conditions.

Data are from a trial established in 2006 to assess the relative growth performance of native conifer and broadleaved hardwood tree species. Ten plants were extracted each year for 5 years following establishment and their above- and below-ground growth parameters measured.



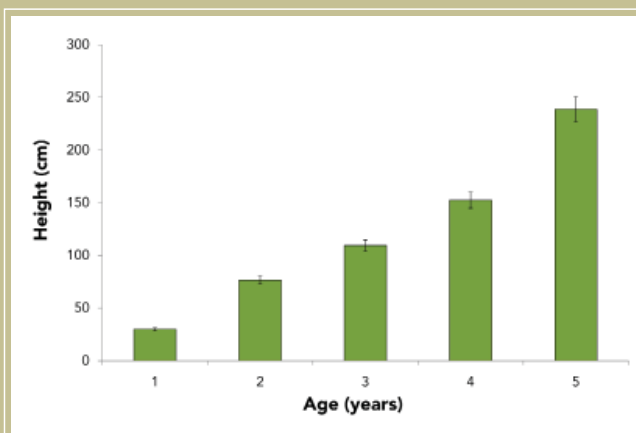
Plan view of 5-year old root system  
(see text box for dimensions)



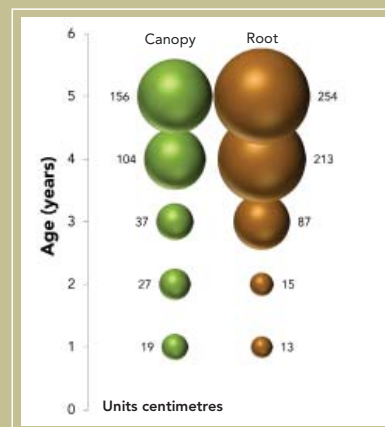
View of canopy and root system of a 5-year old plant  
(see text box for dimensions)

### RESULTS

#### TREE HEIGHT



#### CANOPY AND ROOT SPREAD



#### DISTRIBUTION AND SITE PREFERENCES

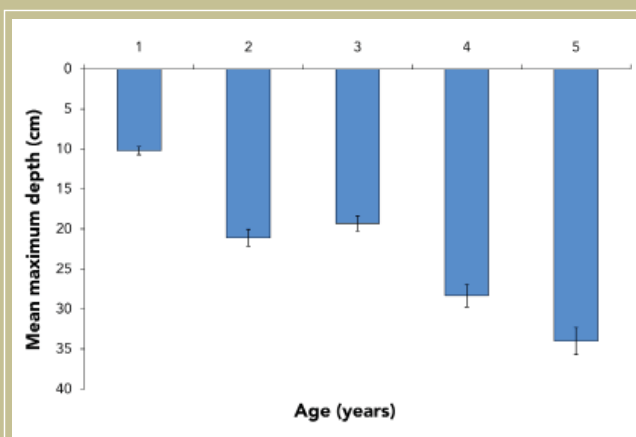
Occurrence	Northland and northern Coromandel, southward to Taranaki on the west and Mahia on the east
Local occurrence	Lowland and coastal forests in warm temperate areas
Preferred soils	Fertile, well-drained hill and floodplain alluvial soils
Moisture	Tolerates wide range of moisture conditions including summer drought
Properties	Prone to frost damage and possum browsing

#### SUMMARY OF GROWTH CHARACTERISTICS AT AGE 5

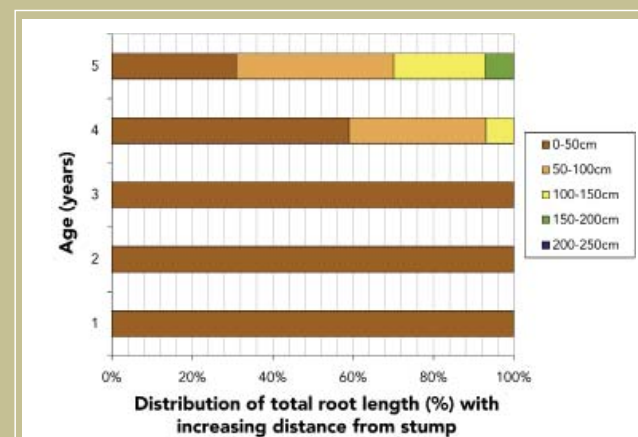
Mean Height	2.39 m
Mean canopy	1.56 m
Mean root spread	2.54 m
Mean max. root depth	0.34 m
Mean above-ground biomass	3.03 kg
Mean below-ground biomass	1.26 kg
Root:shoot ratio	0.53

**Notes:** One of the fastest growing native tree species in early years after establishment. Multiple stems form from the base of the plant. Lowland and coastal forests produce trees up to 20 m high and 1.5 m in diameter. Timber is black, heavy, hard, strong and durable. Coppices readily.

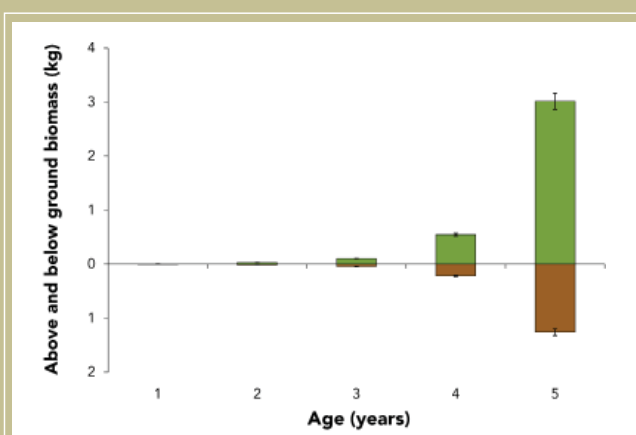
#### ROOT DEPTH



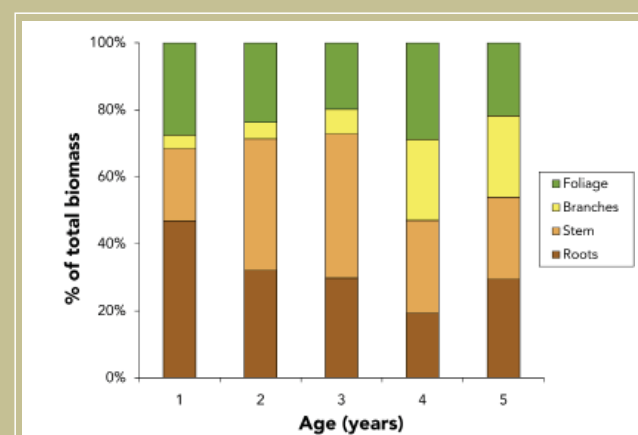
#### ROOT LENGTH DISTRIBUTION



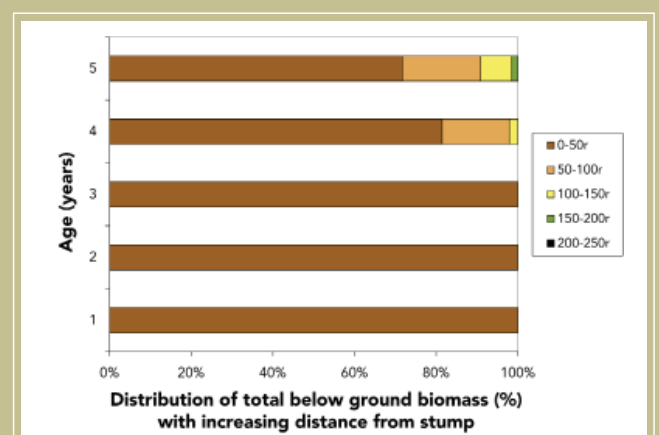
#### BIOMASS



#### TOTAL PLANT BIOMASS



#### ROOT BIOMASS DISTRIBUTION



#### REFERENCES

Bergin D, Gea L 2005. Native trees: planting and early management for wood production. New Zealand Indigenous Tree Bulletin No. 3. Rotorua, New Zealand, New Zealand Forest Research Institute. 44 p.

Salmon JT 1998. New Zealand native trees. Auckland, New Zealand, Reed Books. 228 p.

#### ACKNOWLEDGEMENTS

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