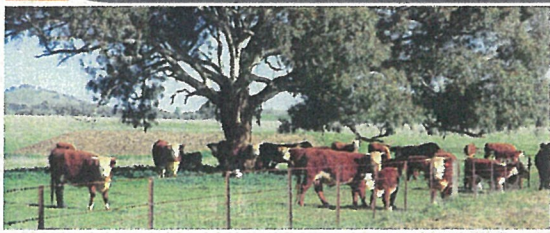



Making the most of shade and shelter on your property

Kylie Macreadie – February 2015



Department of Economic Development, Job, Transport & Resources


Whole farm benefits of shade & shelter



- Biological Control Agents
- Increase Property Values
- Biosecurity Buffer
- Reduce Evaporation on Dams
- Land Remediation
- Aesthetic Values
- Biodiversity/Habitat
- Fire Break
- Alternate Industries
- Crop and Pasture Protection
- Livestock health and productivity

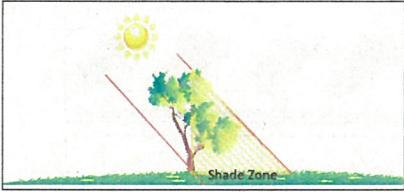
What is shade?

A method of intercepting the sun's direct rays



Natural or Structural

How much shade?



	Noon	9am/3pm
January	<5m	10m
June	18m	33m

Shade requirements

The largest area of shade is required in the late afternoon when stock have been accumulating heat for a long period of time and the temperature is the greatest.

Highest temperatures occur between:	2pm – 4pm
Heat stress typically occurs between:	2pm – 6pm
Most heat stress is shown between:	3pm – 5pm

Principles for perfect shade

- Orientation North/South
- Provide the largest area of shade for stock in the late afternoon
- Be fenced beyond the root zone to protect the trees from compaction and manure
- Feed and dinking water should be placed at least 30m away
- Provides air flow

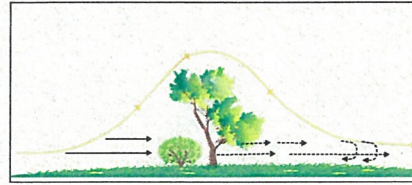
What is shelter?

A barrier that is designed to reduce wind speed and provide sheltered areas on the leeward side of the shelterbelt.



But it doesn't have to be a tree 'belt'

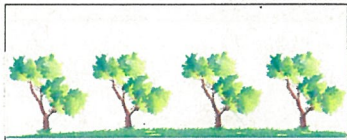
How much shelter?



Length should be a minimum of 10x the tree height

Wind speed is reduced by 50% at 5x the tree height

Density



Aim for 40-60% density

Principles for perfect shelter

- Length should be a minimum of 10x its height
- Even density from ground level to top
- Multiple rows 2-4m apart
- Have a mix of tall trees, medium trees, large and small shrubs
- Be practical and used by stock



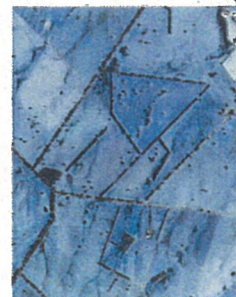
What can be shade and shelter?

- Blocks
- Clumps
- Corridors
- Corners
- Individual trees
- Hill tops
- Lane ways
- Maternity Paddocks
- Trees
- Shrubs
- Grasses
- Artificial

What combinations provide the best opportunities?

Design

- What is the objective? (shade, shelter, both)
- What shelter do you currently have and can it be enhanced?
- What multiple benefits can be achieved?
- How will the shelter be managed?



Design considerations

- Orientation
- Height
- Length
- Density
- Number of rows
- Species composition
- Spacing between plants
- Establishment methods
- Continuity/Repetitive



Integrating into a farming system

- Animal Behaviour
- Pastures/Fodder
- Land class
- Landscape
- Layout



Some of the DONT'S

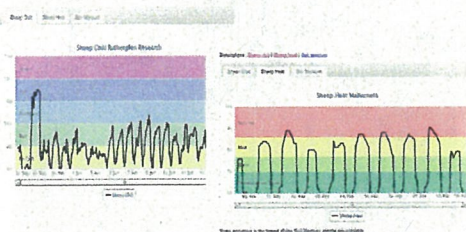
- Plant within eroded or saline areas
- Plant to dense
- Plant single species
- Skip good site preparation and weed control



Shelterbelt Management

- Replacement Planting and Enhancement
- Exclude stock until well established and never 'leave the gate open'
- Weed Control
- Pest Animal Control
- Thinning & Fallen Timber

Internet-based Agricultural Warnings



www.depi.vic.gov.au/vro/lbaw



chtl.katestone.com.au



Key points

- Shade is essential for livestock health & productivity
- Identify your outcomes (shade/shelter/shade & shelter)
- Take a whole farm approach
 - Protect, enhance, restore
 - Multiple benefit
- Design with management in mind
- Shelter is a long term investment so manage it as an asset

Shade / Shelter / Shade & Shelter

Three small images illustrating different types of shade and shelter for livestock: a tree in a field, a long row of trees in a field, and a large tree in a field.



