



Sheep, Wool and the Science of Jondaryan





A visit to Jondaryan Woolshed

- An opportunity to experience real life situations and apply science with a typically Australian perspective

Wool in Australia



- Within fifty years of settlement wool was Australia's main export
- The merino sheep initially introduced to Queensland in the 1840s is the main breed used in wool production
- Wool from the Australian Merino is valued worldwide.

Jondaryan Woolshed

- In 1861 the Jondaryan Woolshed was completed
- At its height a team of 88 blade shearers could process 3000 sheep a day



Australian Wool

- They collected wool to be used in everything from clothes to home insulation
- The Australian Merino sheep was bred to produce high quality wool





There are strains of Merino producing wool fibres of varying quality

- The fine, or superfine, wool merino has a diameter of 18-19 microns and a staple length of 75-85mm
- The medium has a diameter of 20-23 microns and a staple length of 90mm
- The strong wool merino has a diameter of 23-25 microns and a staple length of 100mm

The Physical Properties of the Wool Fibre

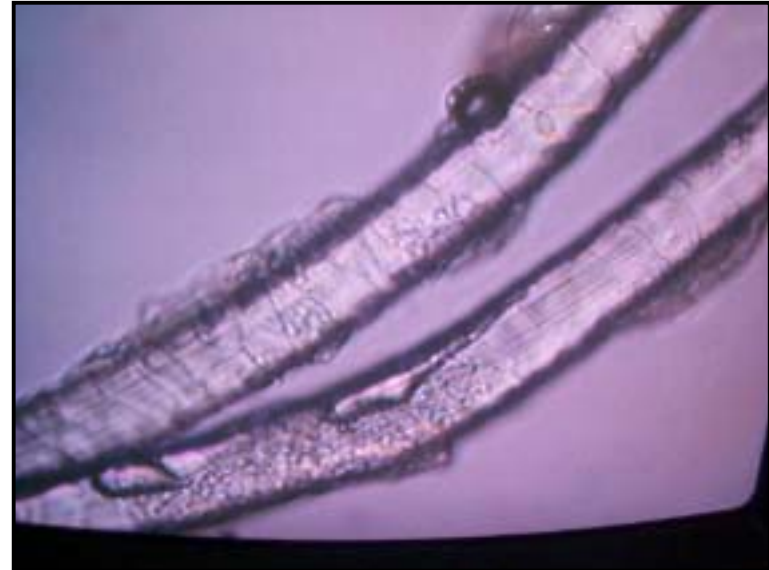
The factors determining the price obtained for a bale of wool are:

- The diameter of the fibre
- The strength of the staple
- The yield
- The colour of the wool



The wool fibre

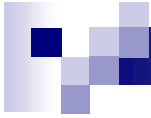
- The diameter of the fibre is small allowing very fine garments to be produced





Strength

- The fibre is strong because the fibres interlock with each other to form a staple
- Individual fibres may be pulled out but the remaining staple takes large forces to break



Warmth

- The structure of the staple and the fibre itself allows excellent thermal insulation properties



The colour

- The Australian Merino mostly produces white wool that readily accepts dye allowing unlimited use of colour



Absorbency

- The factors that allow the wool to take in the dye also mean the wool will absorb large amounts of moisture without problems

The Jondaryan Woolshed

There are a wide range of design features incorporated into the Woolshed

Even the floors were designed with a purpose!



Science of Shearing

- Shearing sheep to collect the wool is the purpose of the Woolshed
- How do you shear a sheep?



Sheep are actually easy to handle





Are sheep stupid?

- It is true that sheep will always follow. If one moves they all do. And the Woolshed was designed to put this idea to work, to help move the sheep efficiently through the shed.
- The shearer uses that behaviour to handle the sheep

Jondaryan Woolshed

- Jondaryan Woolshed is a great resource for teachers providing an adventure in learning beyond the classroom.

