



▶▶▶ Benefits of Biodiversity — wool industry

The following table outlines a number of research facts that are directly related to the wool industry. If further information is required, refer to the cited scientific paper reference.

GENERAL	
Pro-active management of improved and existing native pastures for increased land productivity has proved to be the difference between the top 20% of producers and the average. (Monaro)	Severn Park Merino Stud. (200). <i>2000 Newsletter, 6 steps to Profit with Merinos</i> .
WINDBREAKS	
When comparing sheep in sheltered areas to those with no shelter there is a 31% increase in wool production and 21% increase (6 kg) in live-weight (5 year trial).	Lynch, J.J., and Donnelly, J.B., (1980). <i>Changes in Pasture and Animal Production Resulting from the Use of Windbreaks</i> . Australian Journal of Agriculture, 31:967-979.
Cold stress reduces live-weight gain by 6kg in sheep.	Anderson, G., (1986). <i>The Effects of Trees on Crop and Animal Production</i> . Trees and Natural Resources, Vol 28. No 4.
Cold stress depresses wool growth by 25%.	Anderson, G., (1986). <i>The Effects of Trees on Crop and Animal Production</i> . Trees and Natural Resources, Vol 28. No 4.
When comparing sheep in sheltered areas to those with no shelter there is a 50% reduction in lambing losses (average losses without shelter were 36% for twins and 16% for single births (South-west Victoria, Eastern Highlands).	Bird, R., (1981). <i>Benefits of Tree Planting in South West Victoria</i> . Trees and Victoria's Resources, 23: 2-6.
Winter lamb mortality from birth to 48 hours was greater in an exposed group of single lambs (14%), than a sheltered group (4%). Likewise, mortality rates for twins were 9% in shelter and 28% when exposed (Western Victoria).	Squires, V.R., (1983). 'The value of trees as shelter for livestock, crops and pastures: a review', in van der Sommen, F.J., Boardman, R., Squires, V., <i>Trees in the Rural Environment: towards a greenprint for South Australia</i> , Roseworthy Agricultural College, Roseworthy, South Australia.
A 27% increase in survival of single lambs was observed in sheltered areas, but no advantage was evident to twins during periods of rain with temperatures <5 degrees Celsius (Southern Australia).	Bird, P.R., Lynch, J.J. and Obst, J.M., (1984). <i>Effect of Shelter on Plant and Animal Production</i> . Animal Production in Australia 15: 270 –273.
Sheltered off-shears wethers only required about one third the amount of supplementary feed to maintain body weight as unsheltered off shears wethers (results obtained during a period of poor weather).	Kingham L., (1996). 'Winning battles but losing the war?' in <i>Proceedings of Remnant Vegetation in the Central West</i> . Orange.



SHADE	
Rain reduces the insulating value of an animal's coat by up to 30% (this is particularly a problem for sheep).	Cremer, K.W., (ed). (1990). <i>Trees for Rural Australia</i> . Inkata Press, Sydney.
Heat load reduction on ewes at joining and lambing results in 10-16% more lambs present at marking.	Wakefield. S., (1989). <i>Designing windbreaks on farms</i> . Forestry Commission of NSW, NSW Agriculture and Fisheries, Soil Conservation Service of NSW, Sydney
Heat load reduction on ewes at joining and lambing results in lambs with a faster growth rate and more wool during their first 16 months of life (Northern Queensland).	Wakefield. S., (1989). <i>Designing windbreaks on farms</i> . Forestry Commission of NSW, NSW Agriculture and Fisheries, Soil Conservation Service of NSW, Sydney.
Heat stress reduces wool growth by reducing feed intake.	Anderson, G., (1986). <i>The Effects of Trees on Crop and Animal Production</i> . Trees and Natural Resources, Vol 28. No 4.
Heat stress is detrimental to ram fertility, ovulation rate and conception in ewes, and foetal development.	Anderson, G., (1986). <i>The Effects of Trees on Crop and Animal Production</i> . Trees and Natural Resources, Vol 28. No 4.
PASTURE	
Sheltered pastures lose 12mm of water less than open pastures during the spring growing season (Armidale NSW).	Siepen, G., (1983). <i>Trees for farms</i> . NSW National Parks & Wildlife Service, Sydney.
Productivity of native pastures can be increased with regular use of low rates of fertiliser. A return to capital of 15% (real) could be expected based on a stocking rate increase of 4 dry sheep equivalent per hectare over 10 years.	Crosthwaite, J., and Malcolm, B., (1998). <i>An Economic Analysis of Native Pasture in the Hills and Tablelands of South-eastern Australia</i> . Institute of Land and Food Resources, University of Melbourne, Melbourne.
Plots sheltered by barriers had 18% more pasture (Armidale, NSW).	Lynch, J.J., and Donnelly, J.B., (1980). <i>Changes in Pasture and Animal Production Resulting from the Use of Windbreaks</i> . Australian Journal of Agriculture, 31:967-979.