

Climate change impacts (2030) at Cootamundra

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Introduction

GrassGro simulated herbage production for Landgrove, 10 km east of Cootamundra using an annual pasture/phalaris. The 2030 projections for four GCM's were compared to the base period (1971 – 2000)

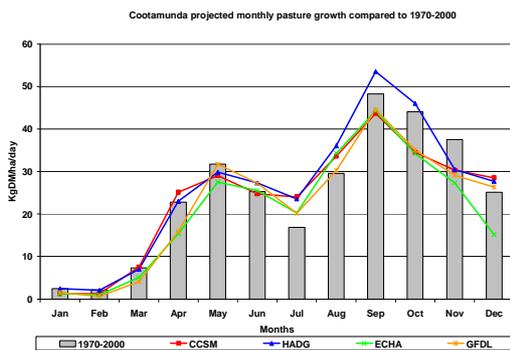
Average total annual pasture growth kg DM/ha

Locality	Base	CCSM	HadGEM	ECHAM	GFDL
Landgrove	8947	8665	9440	7671	8147

The average across the 4 GCMs is 8480 kg or 95% of base production.

Monthly growth

The major features of the monthly growth rate data is higher growth from all models in the June to Aug period followed by lower spring growth. The autumn is split between the models, 2 the same and 2 down. The combination of the lower spring, with no strong summer increase and a slower autumn means that ground cover will come under more pressure in late summer/autumn.



The growth rates shown have included the positive impacts of increased CO2 on plant growth.

Stocking Rates

The stocking rates for all years are set such that the ground cover is maintained above a minimum of 70% for 7 in 10 years. This equals 92% of weeks above 70%. Combining the reduced pasture production and the increased ground cover pressure results in reduced stocking rates for all GCMs.

Base	CCSM	HadGEM	ECHAM	GFDL
12.2 dse/ha	10.2 dse/ha	13.0 dse/ha	7.7 dse/ha	9.4 dse/ha

The average stocking rate over the 4 GCMs is 10.1 dse/ha or 83% of the base.

Profit/ha

For this site a self replacing merino flock was run using 5 year average prices and costs (2005-09) for all runs. It also includes \$100/ha for overhead costs. The stocking rates above were used.

Base	CCSM	HadGEM	ECHAM	GFDL
\$189/ha	\$145/ha	\$218/ha	\$64/ha	\$114/ha

This gives an average of \$135/ha or 72% of the base profit

This provides us with an indication of the potential impact on profits of the climate in 2030 where no changes have been made to the production systems.

Because the stocking rates have been based on a ground cover rule we are applying equal pressure across the runs on the pasture system and avoiding issues such as soil and pasture loss.

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ISSN 1832-6668

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