Livestock enterprises in 2030 in the Yass district.

Phil Graham
Technical Specialist Livestock systems
NSW Agriculture
YASS

Assumptions used

- Based on native perennial grass, clover and annual grass. Stocking rate set by a ground cover rule.
- Yass historical weather data used
- CO2 fertilisation has been included
- 30 years of potential 2030 weather is generated for the future climates.
- Based on AR5 data
- Extreme events are not as critical in livestock.

pasture

Climate

1960 to 2014

GrassGro

Prices and costs 12 mths

Run 1 livestock system at a time and compared the differences

soil

livestock

Rainfall and temperature comparison.

	Annual rainfall mm/yr	Mean temperature C
Base 1986 to 2015	680	14.1
H2	603	15.4
C3	688	15.1
C4	730	15.1
MPI	686	15.0

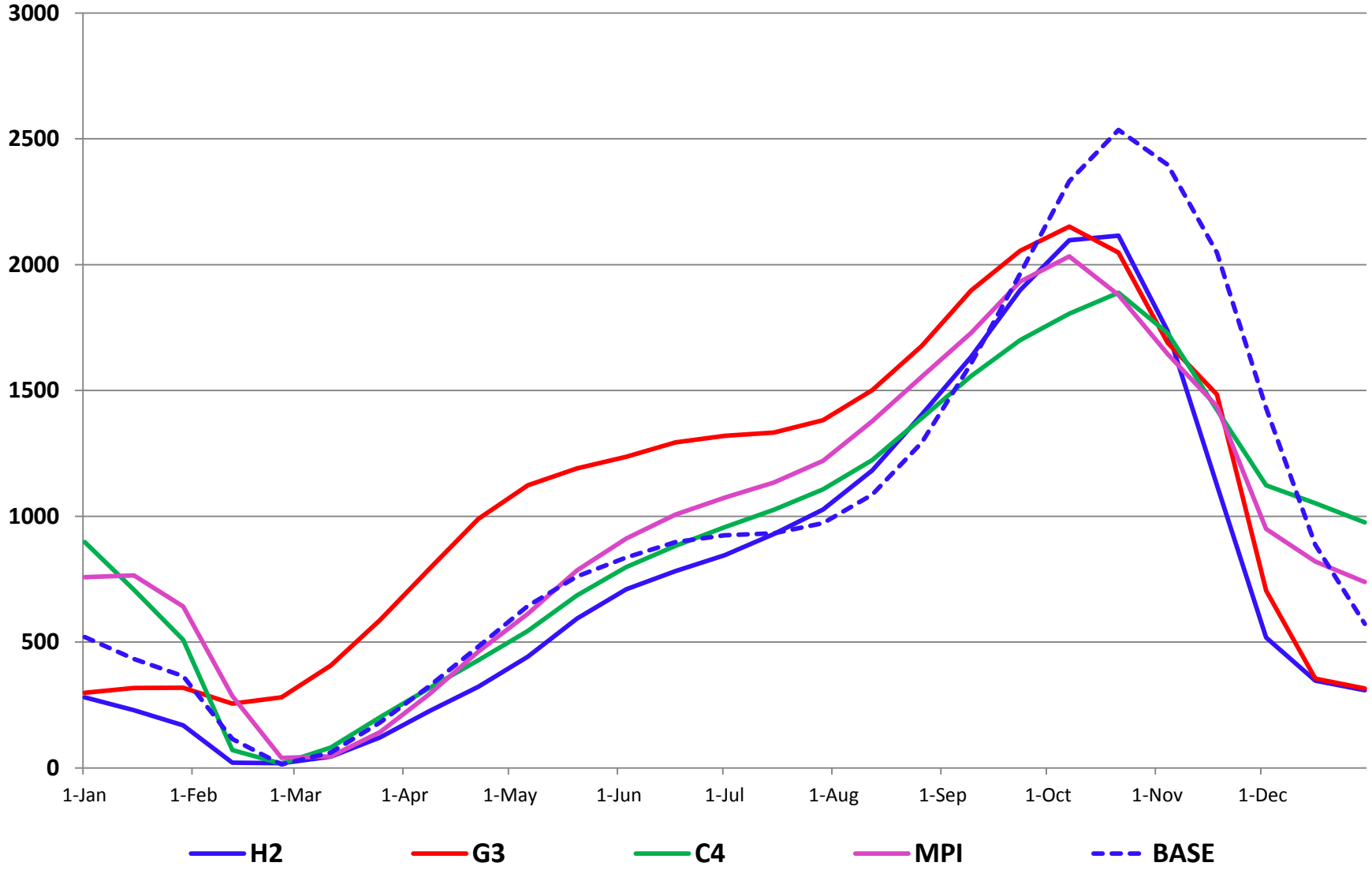
Impact in 2030 of climate change on a 18 um self replacing merino, base period 1986 to 2015.

	Percentage reduction in profit $/ha	DSE/ha – long term average	% reduction in $/ha with genetic gain up to 2030
Base 1986 to 2015	**100%**	**13.6**	**100%**
H2	**47%**	**8.7**	**42%**
G3	**43%**	**9.6**	**40%**
C4	**20%**	**11.8**	**13%**
MPI	**36%**	**10.1**	**29%**

Percentage reduction from base period of 1986 to 2015

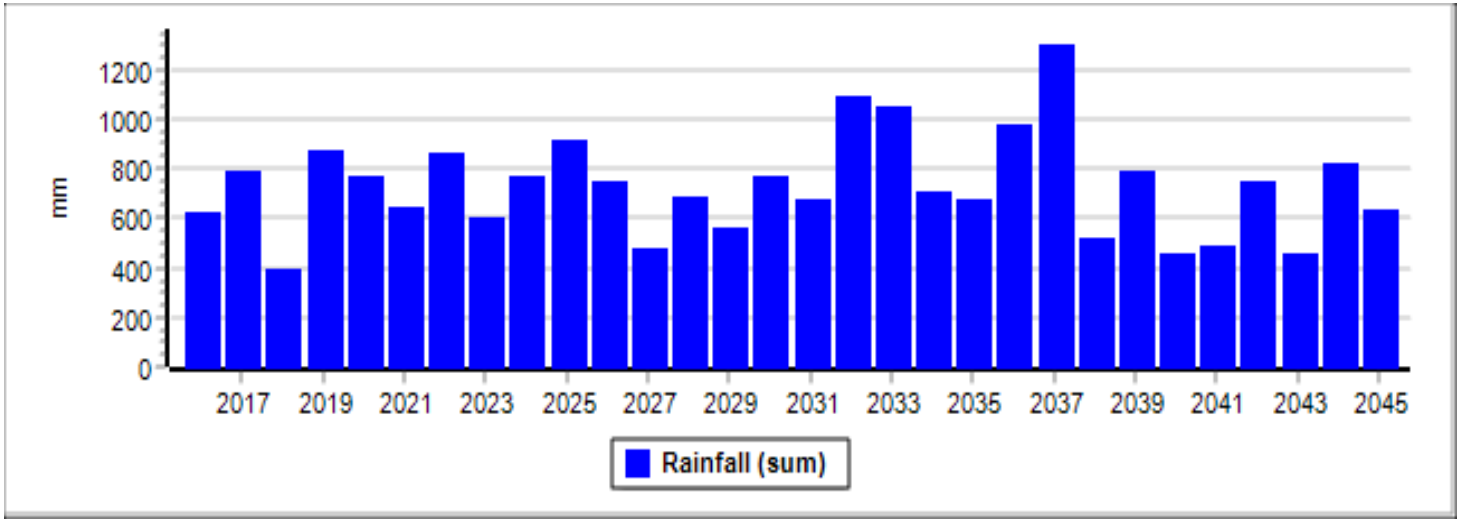
	BEEF No change	Genetic improvement up to 2030	**LAMB** No change	Genetic improvement up to 2030
H2	**33%**	**33%**	**29%**	**27%**
G3	**32%**	**32%**	**33%**	**28%**
C4	**12%**	**12%**	**12%**	**5%**
MP	**19%**	**18%**	**22%**	**18%**

Long term average available green herbage kg DM/ha



Variation between years in rainfall is more important then the average

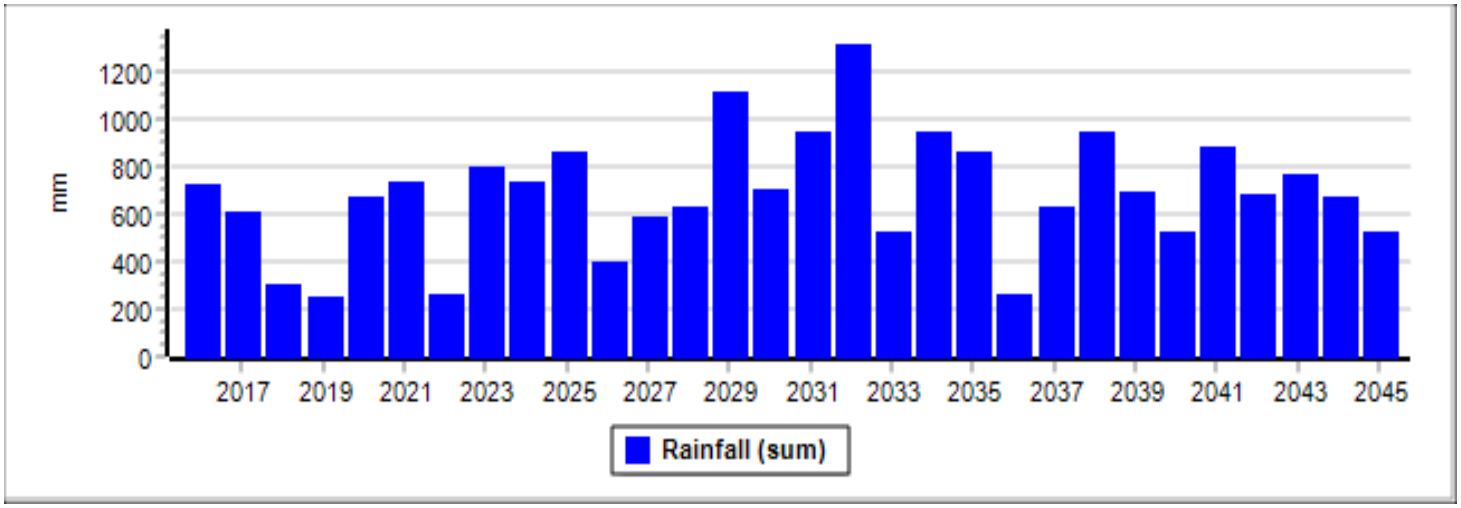
C4



730mm

20%

G3



688 mm

43%

The value of possible adaptations

	YES	?
Change from breeding to trading		X
Use feeding areas to manage ground cover	X	
Increase reproduction rates		X
Sell wethers as lambs		X
Use a combination of strategies	X	
Genetic improvement	X	X