“Giving the girls some credit”

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Maternal Productivity Project –
Part 3: Bulls, Cows and Calves

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KEY MESSAGES

When examining the effect of selection for either yield, or feed efficiency on maternal productivity, cow reproduction parameters must be considered as well as calf birth and growth records. After analysing the 2007 and the 2008 born calves, it is evident that above all the nutritional status of the cows has more influence on reproduction and calf performance than the genetic make up of the cows themselves.

INTRODUCTION

This paper convenes the preliminary results for the reproductive parameters of the Maternal Productivity Project. The general details of the experiment are described on a previous paper found in the present proceedings (Maternal Productivity Project Part 1: an overview).

METHODS

In 2006 the animals were mated to Western Australian stud Angus bulls. Each bull was selected for a low birth weight EBV as well as favourable Ease of calving EBV.

In 2007 the first calves were born. At this time we measured and analysed the following parameters: - days to calving, birth weight, growth rate of calves, weaning weight and total kg beef weaned per genotype.

In 2007 the cows were re-mated as well as adding some heifers of the same genotype to the herd. This time WA bulls were used as well as bulls from NSW. A single sire mating programme was used with a bull to cow ratio of 1 : 15.

In June 2008 the second cohort of calves was born. For these, the same parameters were analysed but as yet these calves have not been weaned.

RESULTS

Days to Calving

In 2007 and in 2008 neither level of nutrition nor the genotype of the animal had any effect on days to calving.

In 2007 it was noted that for every 100kg increase in the liveweight of the dam at mating start date, the number of days to calving was reduced by 13 days. In 2008 this figure was 9 days.

Birth Weight

In 2007 and 2008 neither level of nutrition nor genotype had any effect on birth weights. There was also no influence of the age of the dam on birth weight.

In 2007 and 2008 male calves were heavier than female calves.

In 2007 for every 10kg increase in the liveweight of the dam in the first trimester of pregnancy, birth weight increased by 1.7kg.

For every ten day increase in time after the start of calving, birth weights increased by 1.7kg.

In 2008 this figure was 1kg.
Growth Rate

In 2007 nutrition had an effect on average daily gain with the calves of dams on low nutrition growing significantly slower than those calves whose dams were on high nutrition. There was no effect of the genotype of the cow on the growth rate of the calf. Male calves grew faster than female calves. No analysis has been done for growth rate of 2008 calves.

Weaning Weight

In 2007 nutrition had an effect on weaning weight with calves of dams on low nutrition weaning lighter than those calves from dams on high nutrition. Genotype however had no effect on weaning weight. Male calves weaned heavier than female calves. 2008 calves have not been weaned yet.

Total Kg Beef Weaned

For the 2007 calving season, neither nutrition nor genotype had any effect on the total kg of beef weaned per treatment.

CONCLUSIONS

Until now the genotype of the cows has had no impact on the calving parameters mentioned above. Only when a nutritional treatment is imposed on the animals do we see an effect on growth and weaning weights. This effect however is across all genotypes and is not unexpected. Research has already shown that with lower nutrition comes lower milk production and hence lower growth rates and weaning weights, so the results in this case are unsurprising. It is possible that the nutritional imposition in 2007 was not powerful enough to result in the different genotypes responding differently. In 2008 the difference in nutrition provided to the animals was greater. These results show that when nutrition is adequate aspects of maternal productivity to do with calf production are not compromised, and producers can be confident that the benefits of selecting for increased yield or feed efficiency will not come at the cost of maternal efficiency. It is still too early in the experiment to make firm conclusions about the cost of this selection when nutrition is poor.

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