

## Compliance to Carcase Specifications by Grain Finished Angus, European and Wagyu X Steers Given Different Backgrounding Treatments

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Experiments within this project (Beef CRC - 'Regional Combinations') were designed to quantify the responses in carcase and meat quality traits in crossbred steers with diverse genetic potential for intramuscular fat (IMF %) and retail beef (RBY) when given different growth treatments ('backgrounding') prior to feedlot finishing. The design and methodology was fully described by McKiernan *et al.* (2005). The genetic treatment involved the use of sires from British, European and Wagyu breeds with high breeding values for the above traits, mated to Hereford dams to generate progeny that were grown 'faster' (~ 0.7kg/day) or 'slower' (~ 0.5kg/day) from weaning to feedlot entry (mean 380 kg liveweight). Effects on growth and carcase traits have been previously reported (Wilkins *et al.* 2009; McKiernan *et al.* 2009). Treatment effects on the economic outcomes were presented by Davies *et al.* (2009). Results in Table 1 show the compliance of carcasses to the Cargill specifications at the time of slaughter for 100-day grain fed steers (Cargill Beef Australia, Wagga Wagga, N.S.W., *pers.comm.*). The traits relevant to the specification grid include carcase weight, P8 fat depth, fat colour, meat colour and dentition – the major drivers of value for these carcasses being weight and fatness.

**Table 1. Comparison of sire type groups within pre feedlot backgrounding treatments for compliance (% of carcasses meeting specification) to Cargill 100-day grain fed specifications grid for carcase weight and P8 fat separately and combined. Sire types were – (Lim) Limousin, (Char) Charolais, (Ang) Angus (High for – RBY, RBY&IMF, IMF%), (Wag) Wagyu (Red and Black)**

Grid specification items	Lim	Char	Ang RBY	Ang RBY & IMF	Ang IMF	Wag Red	Wag Black
<i>'Slower' backgrounding – (n)</i>	(28)	(22)	(47)	(50)	(47)	(34)	(31)
Hot standard carcase weight (300-380kg)	82.1	77.3	89.4	86	95.7	88	93.5
P8 fat depth (10-32 mm)	82.1	90.9	100	100	100	97	93.5
Both weight and P8	60.7	72.7	89.4	86	95.7	85.3	90.3
<i>'Faster' backgrounding – (n)</i>	(28)	(29)	(59)	(59)	(59)	(29)	(36)
Hot standard carcase weight (300-380kg)	82.1	96.6	91.5	93.2	93.2	93.1	88.9
P8 fat depth (10-32 mm)	96.4	65.5	98.3	98.2	98.3	100	97.2
Both weight and P8	78.6	65.5	89.8	91.5	91.5	93.1	86.1

Most groups of the European types (higher growth potential) had lower compliance for carcase weight (overweight) than other types, despite adjustment for differences in liveweight at feedlot entry required by the experimental design. They were also leaner at similar carcase weights than other types, as expected of their genotypes. However the value of the greater carcase weight was sufficient to override the price penalties due to lower compliance. The 3 Angus carcase types performed the best in meeting all grid specifications in both fast and slow growth treatments. Carcasses from the faster backgrounded steers better met fat specifications compared to slower, resulting in an overall increase in compliance of about 10%. The design of the experiment caused differences between genotypes in feedlot entry/exit weights because of the need to treat all groups similarly within growth treatments. This suggested that different strategies are required according to genotype for the timing of age with weight at feedlot entry to maximise compliance of carcasses to the end product specifications.

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