

215 Growth and carcass characteristics of lot-fed Wagyu beef cattle and the estimation of homozygosity from band sharing patterns of random amplified polymorphic DNA markers. A. E. O. Malau-Aduli*¹, S. Inoue², T. Richards², A. Howard², and A. Thompson², ¹*University of Tasmania, Hobart, Tasmania, Australia*, ²*Tasmania Feedlot Pty Ltd, Perth, TAS, Australia*.

The Wagyu breed of beef cattle is renowned for its ability to deposit high levels of intramuscular fat resulting in highly marbled beef that meets consumer demands in some niche export markets. We evaluated the post-weaning growth performance and carcass characteristics at slaughter of purebred Wagyu steers raised in the feedlot after an initial backgrounding on grass and silage. Our main aim was to study the average daily gains (ADG), body condition scores (BCS) and liveweight (LWT) changes from weaning to slaughter and to estimate homozygosity and inbreeding coefficients through band sharing patterns using random amplified polymorphic DNA (RAPD) markers. LWT, ADG and BCS were monitored monthly from 2005-2006. Genomic DNA was extracted from blood samples, amplified using RAPD primers, fragments resolved by gel electrophoresis and banding patterns elucidated under UV light. A linear increase in liveweight as age increased was observed and the typical fluctuation due to seasonal variations observed under grazing conditions was unnoticeable. Average LWT ranged from an initial 110kg to 660kg, ADG ranged from 0.7–2.0kg/day and BCS reached the maximum of 5 at the end of the experiment. Average LWT at slaughter was 574kg with a hot carcass weight of 329kg and a dressing percentage of 57%. Mean eye muscle area was 94cm², eye muscle width 8cm and eye muscle length 16cm. Marbling score was 3, subcutaneous fat depth of 17cm and total trimmed fat weight was 34kg. Average saleable meat yield based on the 4 most valuable hind muscles were: Round (11.7kg), Topside (19.3kg), Rump (13.6kg) and Silverside (15.8kg). Average band sharing frequencies ranged from 0.60 to 0.96 with estimated inbreeding coefficients ranging from 0.5% to 7%, respectively. It was concluded that the inbreeding level was low, negligible and not in any way detrimental to meat yield and carcass quality destined for the Japanese market. Finally, RAPD markers were not versatile enough to

clearly differentiate between the fastest and slowest growing animals within the Wagyu breed.

Key Words: RAPD Markers, Wagyu, Carcass Traits