

Appendix I

Breeding dairy cows to reduce greenhouse gas emissions

M. J. Bell¹, R. J. Eckard¹ and J.E. Pryce²

1 Melbourne School of Land and Environment, University of Melbourne, Vic. 3010, Australia

2 Biosciences research Division, Department of Primary Industries, Victorian AgriBiosciences Centre, Bundoora, Vic. 3083, Australia

Abstract. The aim of this review was to investigate the potential role of selective breeding in reducing greenhouse gas (GHG) emissions from dairy cows. The global demand for dairy products has grown rapidly over the last decade and is projected to continue in the short to medium term future. Milk production from dairy cows has also increased significantly in recent times due to advances in breeding, nutrition and management practices. Whilst improvements in efficiencies have been made by the industry, the loss of nutrients from the animal's diet as enteric and manure methane and nitrogen in dung and urine are still inefficiencies associated with production. Livestock production systems are a major source of methane and nitrous oxide emissions, which due to the effect of GHG levels on climate change, mitigation of these gases has gained importance in recent years. Selective breeding can be a cost-effective mitigation strategy. One such approach that would be cost-effective and reduce the emissions intensity of milk production would be to select animals that better utilise their feed intake to meet their genetic potential for milk production.

See Bell MJ, Eckard RJ, Pryce JE (2012) Breeding dairy cows to reduce greenhouse gas emissions. In 'Livestock Production.' Ed. K Javed. (InTech Publishing: Croatia) ISBN: 979-953-307-945-4