POULTRY CRC PROGRAM 1 - ENHANCED QUALITY AND PRODUCTIVITY USING NOVEL APPROACHES TO DIGESTIVE PHYSIOLOGY AND METABOLISM

R.J. HUGHES\textsuperscript{1,2}

Australian egg and chicken meat producers, along with their counterparts world-wide, are faced with many threats and challenges. Some of these relate to changing consumer perceptions about quality and safety of food, and attitudes on how that food should be produced. Other challenges are to do with a diminishing range of affordable feed ingredients permitted in poultry diets, increasing competition from other animal industries for those feed ingredients, and competition from imported egg and chicken meat products.

Many of the products that have been commonly used in the poultry industry to improve the health and growth of animals will need to be replaced or modified in the near future to keep pace with consumer and industry demands for animal health and welfare, and food safety. Chicken meat producers are now faced with the challenge of how to manage without the prophylactic use of antibiotics. Furthermore, both egg and chicken meat producers will have to contend with a reduction in the supply, and likely ban, of protein-rich feedstuffs such as meat and bone meal and fishmeal that have been traditionally important ingredients in poultry diets. Formulating diets in the near future will become more challenging because, not only are the genetics of the animals rapidly changing, which impacts upon nutrient requirements, but much of our current understanding of nutrient availability has been derived against a background of antibiotic usage in feed. Critical information will have to be re-evaluated under antibiotic-free conditions and this will require a better understanding of the digestive physiology and metabolism of poultry. Recent advances in technologies available in other areas of biological and medical sciences offer significant opportunities for rapid advancement of our understanding of the biochemistry and physiology of digestion and metabolism in domestic poultry. Failure to meet these challenges will reduce the future competitiveness of the Australian poultry industry in regard to products that satisfy consumer demands for home-cooked, dine-out andtake-away food. These issues will require a multi-pronged approach involving integration between traditional scientific disciplines and new strategic research.

\textsuperscript{1} Australian Poultry Cooperative Research Centre; \textsuperscript{2}SARDI, Pig and Poultry Production Institute, Roseworthy, SA 5371 – Australia.