Australasian Pork Research Institute Ltd APRIL

Project Number & Title: 5A-120 Dietary lecithin and inulin improved growth performance and eating quality of pork

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Aims and Objectives:

1) determine the effects of sex, dietary lecithin and inulin on growth performance and carcass traits of pigs;
2) determine the influence of sex, dietary lecithin and inulin supplement on physicochemical and sensory properties of pork.

Key Findings:

Dietary supplementation of 2% inulin and 0.8% lecithin to pigs had limited effects on growth performance and carcass traits, although dietary lecithin improved FCR. However, dietary inulin increased intramuscular fat (IMF) content, especially in the *Biceps femoris* (BF), resulting in improved tenderness and flavour in both the *Longissimus thoracis et lumborum* (LTL) and BF. Additionally, check-all-that-apply (CATA) results showed that LTL from immunocastrated males supplemented with inulin were less dry and fibrous. On the other hand, lecithin supplementation increased collagen solubility, mostly in LTL. Lecithin supplementation increased roasted flavour and tenderness of LTL from immunocastrated males. Dietary supplementation of inulin and lecithin has the potential to alter muscle composition and thus improve the eating quality of pork. Future studies can be conducted on the mechanism(s) of the effects of inulin and lecithin on meat quality.

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Application to Industry

The following recommendations have been made:

1/ Further research should be conducted to determine whether the improved eating quality in response to inulin is an effect specific to inulin or whether other less expensive and more readily available fibre sources could have similar benefits,
2/ Dietary lecithin may be used as a strategy to improve the flavour eating quality of pork, and
3/ The CATA method should be incorporated in future pork sensory studies