



Post Project Review - Executive Summary

3A-108 - Nutritional Manipulation of Iron level in Finisher Pigs and Fresh Pork

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Benefits not applicable to this project

Collaborating Organisations: Murdoch University, University of Melbourne

Objectives

To determine whether:

- dietary Iron (Fe) supplementation of finisher pigs increases total iron content of pork muscle
- the addition of inulin (a complex carbohydrate) to the diet changes the incorporation of Fe into pork muscle
- the muscle Fe content in male pigs can be increased to the level similar to that of females

Outcomes achieved

- Haem iron content and redness of pork can be increased by addition of inulin from chicory at 5% into the finisher diet.
- Potential to improve average daily gain and carcass lean content in pigs by dietary inulin supplementation

Project Issues

Muscle iron content was found to decline quite markedly and to very low levels with live weight which is contrary to expectations. The muscle iron levels reported at 100 kg live weight were also lower than in the previous study conducted at Werribee.

The pigs were housed in individual pens in the present project and It is not clear whether the housing system (individual vs. Group housed) impacted on the project hypothesis and outcomes effect of lack of animal movement/exercise on muscle iron status.

Organic iron from any source did not influence growth rate nor carcass weight. An increase in haem iron content in muscle did not increase total iron content of pork. Haem iron however is more available than non haem iron.

Financials

	Budgeted	Actual	%
Cash	\$50,566	\$48,675	96%
Inkind	\$25,000	Nil	-

An invoice has been raised to DPI Vic for \$1,891. DPI Vic has been requested to confirm that no in-kind was provided.

Adoption and Commercialisation

Strategy - Communication and demonstration

There is improvement in production with the use of inulin in the diet through increase in growth rate and muscle content but this needs to be validated by using DXA analysis or other body composition analysis. The main economic benefits from the cost of production will go to pig producers.

The nutritional enrichment process can be adopted into the current feeding systems by adding inulin sources into finisher feeds but further study is warranted.

Inulin supplementation showed an improvement in the colour of fresh pork and the colour stability of pork and the benefits will be realised by retailers. The positive response of inulin supplementation on iron content and colour stability of pork needs further investigation to justify the influence of inulin diet on the nutritional value and quality of pork.

Lessons learned & Future Research Opportunities

No benefit of iron supplementation on haem or total iron status of pork muscles. Inulin supplementation improved haem iron content of fresh pork and also improved daily weight gain and carcass weight compared to diets that did not contain inulin.

Need to determine potential reasons for differences between initial and final muscle iron levels of pork in this study - eg. exercise/housing system, growth rates and genotype. It is considered that further studies are needed to understand the effect of feeding inulin on body composition, haem & total iron content in pork and the colour stability (redness of pork) in different genotypes. Projects have been commissioned to investigate the effects of genetics and housing.