

Sow feed additive to increase progeny carcass weight

We have isolated a novel sow feed additive that has been demonstrated to promote robust and durable piglet growth that would mean a significant increase in the output and value of saleable meat for commercial pig producers.

Research undertaken by Waterford Institute of Technology (WIT) and Teagasc, Moorepark in Ireland has demonstrated that a microbial strain, which when fed to transition and lactating sows, significantly increased offspring carcass weight.

Animal Health, Animal Nutrition, Microbial Feed Additive

Problem Addressed

In commercial pig production, feed contributes up to 70% of total production costs. Such costs can be further compounded by poor feed conversion caused by sub-optimal nutrition, infection, stress and sub-optimal weight gain. This very often necessitates costly dietary supplementation on a per animal basis. Furthermore, the EU prohibition of routine in-feed antibiotic use and supplementation with pharmacological levels of zinc oxide necessitates the development of alternative sustainable treatments and strategies to support development of a healthy piglet intestinal microbiota and optimal gut health. The availability of a clean-label sow feed additive that promotes robust and durable piglet growth would mean a significant increase in the output and value of saleable meat for commercial pig producers.

The Solution

A 6-week feed supplementation trial involving 24 pregnant sows and 144 of their offspring, with the feed supplement administered to the sows daily was compared against a control treatment (standard lactation/gestation diet without the additive). Sows and offspring from both groups were continuously monitored at intervals from birth to slaughter. It was found that supplemented sows produced colostrum with a higher protein content. Piglets born to sows fed the microbial additive demonstrated faecal shedding of the strain while suckling, thereby demonstrating transfer of the microbial additive from sow to offspring demonstrating significant benefits to the offspring.

Advantages of Technology

- Increased villous height in the small intestine at day 7-8 post-weaning ($P < 0.05$) a key indicator of improved gut health
- Better feed conversion ratio (FCR) for the first 14 days post-weaning ($P < 0.001$).
- Increased pig live-weight at day 105 and 127 post-weaning ($P < 0.05$).
- A numerical reduction in pre-weaning mortality (from 15.6 to 10.1%).
- An increased carcass weight, with offspring from supplemented sows being 3.5 kg heavier than offspring from untreated sows ($P < 0.05$).

The 3.5 kg heavier carcass weight, at the same slaughter age, achieved by pigs from the maternally supplemented sows **represents a financial gain of €5.39 per pig** using a 5-year average pig meat price of €1.54/kg carcass. Based on the fact that a sow produces an average of 26.9 piglets/year this amounts to €144.99 increase in the output value per sow per year.

Based on the cost of competing products if adopting a 6 week administration period, for every €1 spent on the supplement, a farmer could expect a return of between €53 and €177.

Stage of Development

The research team are currently focussing commercial scale efficacy evaluation and scale-up of the manufacturing process coupled with product stability and shelf-life studies in line with market, business and regulatory requirements.



COMMERCIALISATION OFFER

Intellectual Property Status

The intellectual property outlined above is the subject of a patent application (filing no. EP20162860.9) filed on 12/03/2020.

Opportunity

Teagasc and WIT are interested in partnering with a company/companies to explore routes to market with this technology.

Funding:

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How to Proceed:

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