

Live5 – 5 microbe animal feed additive for promoting growth & good health

VALUE PROPOSITION

The microbial feed additive (or direct-fed microbial), **Live5**, is a natural probiotic mix that can be used as an alternative to antibiotics in pig husbandry, both as a means of controlling pathogen carriage and improving growth rate and feed conversion. Pigs fed a **Live5** milk suspension over 30 days increase their weight by at least 20% more than pigs fed without **Live5**. Morbidity and diarrhoea incidence is also decreased. The 5 live beneficial bacteria help maintain a healthy intestinal balance for optimum animal performance.

THE TECHNOLOGY

The five-strain (Lactobacillus murinus DPC6002 and DPC6003, Lactobacillus pentosus DPC6004, Lactobacillus salivarius DPC6005 and Pediococcus pentosaceus DPC6006) probiotic mixture, **Live5**, has been shown to be effective in reducing *Salmonella* shedding in pigs, in protecting against the clinical signs associated with *Salmonella* infection in pigs, and in improving growth rates. **Live5** has also demonstrated the potential to modulate host immunity in pigs.

Antibiotic growth promoters are currently being phased out of use because they impose a selection pressure for bacteria that are resistant to antibiotics. There is a need for alternative solutions that do not depend on antibiotic usage.

Subclinical salmonellosis is a relatively common problem in pigs, usually causing no obvious animal health problems. Affected pigs are carriers of salmonella, and can excrete large numbers of salmonella organisms intermittently, and particularly when stressed. Salmonella in pig meat has long been associated with outbreaks of food borne illness. It is in the interests of both industry and consumers to reduce the significance of Salmonella Typhimurium as a pig meat-associated food borne pathogen.

Live5 offers huge potential for use in pig production; in enhancing health status, reduction of subclinical carriage of pathogens (gram -ve *salmonella* and *E.coli* in particular) and in acting as an alternative to antibiotic therapy. Further, one of the **Live5** microbes, *L. salivarius* DPC6005, produces a heat stable, two-component bacteriocin, Salivaricin P, which is highly active against a number of Gram +ve bacteria, including *Enterococcus* sp. and *Listeria innocua*.

Pig no.	% increase in weight		
	Control	Fermentate	Suspension
1	227	318	317
2	254	316	253
3	271	250	272
4	272	256	268
5	205	287	379
Mean	246	285	298

Table 1. Pigs were administered a mixture of five probiotic strains either as a milk fermentate or milk suspension and the effects on subsequent *Salmonella* Typhimurium infection investigated. Percentage increase in weight of pigs across 30 day trial period are shown. In addition to better weight gain, animals treated with probiotic exhibited reduced morbidity and a decreased incidence of diarrhoea.

DEVELOPMENT OBJECTIVES

- Development of stable and commercially relevant probiotic product prototypes ready for market

FIELDS OF APPLICATION

- Animal Health
- microbial animal feed additive
 - alternative to antibiotic growth promoters
 - therapeutic application

PARTNERS



FUNDING

CONTACT

KEVIN DALTON on Tel: +353 21 4901798 or email: k.dalton@ucc.ie

WEB: [HTTP://TECHTRANSFER.UCC.IE](http://TECHTRANSFER.UCC.IE)