



Scientifically proven gut health solution

**Tested, effective, patented  
ingredient for piglet and sow feeds**

**progut<sup>®</sup>**



## Progut® – a new generation yeast product

Progut® is a unique and patented feed ingredient, that has been scientifically proven and has a well documented mode of action.

In trials\*), the application of Progut® in piglet feeds has improved growth, feed utilisation and health.

**The only patented hydrolysed yeast for pig!**

### The product has successfully passed through different types of trials:

**In vitro trials:** In laboratory trials Progut® has shown its ability to prevent E. coli attachment to gut mucus, to modify intestinal microbiota and stimulate immunity.

**Trials with animal models:** In these trials Progut® has consistently demonstrated beneficial effects on intestinal microbiota and immunity. Modes of action have been scientifically documented.

**Production trials** carried out in a number of countries have shown that Progut® has improved growth and feed utilisation.

\*)

#### PIGLET TRIALS:

20 farm trials, Finland 1996–1999  
• 5–20% better ADG and FCR, lower diarrhoea index and mortality

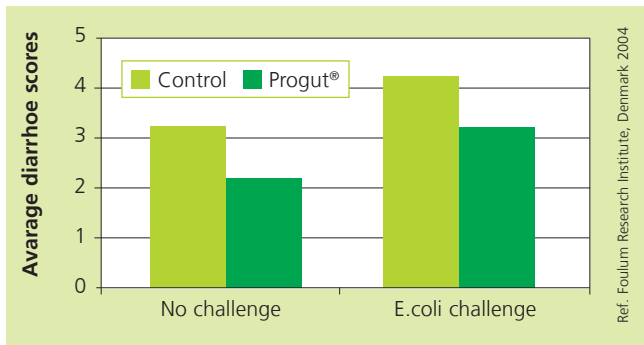
Research Farm, Germany 2003  
• 10–14% better ADG and FCR

Research Farm, Denmark 2004  
• 10% better FCR, lower diarrhoea index

Research Farm, France 2005  
• 5–9% better ADG and FCR

# Better intestinal health and immunity improves performance and profitability in pig production

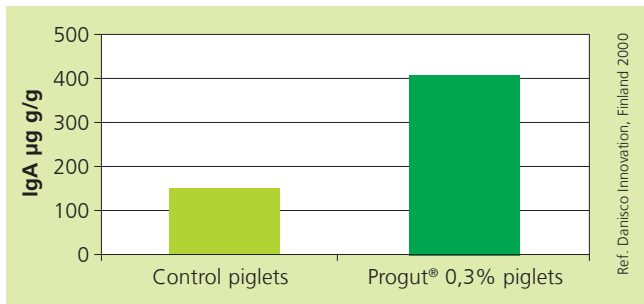
## Progut® has reduced the risk of diarrhoea



Pathogenic bacteria, like E. coli and salmonella need to attach to gut mucus to be able to multiply and produce toxins. The attachment is highly specific, targeted at certain sugar structures in the gut mucus. By including similar sugar structures in the feed, it is possible to decrease their attachment.

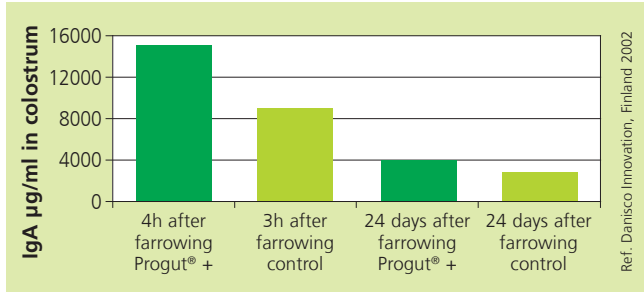
Trials have shown that the amount of soluble sugars in yeast correlate to E. coli binding ability. Progut® is hydrolysed yeast and due to the patented process, it contains plenty of the right sugar structures in a bioactive soluble form. Progut® has, in trials, been very effective in binding piglet specific pathogenic E. coli. In E. coli challenge trials with piglets it has significantly reduced the risk of diarrhoea.

## Progut® has supported the natural immunity



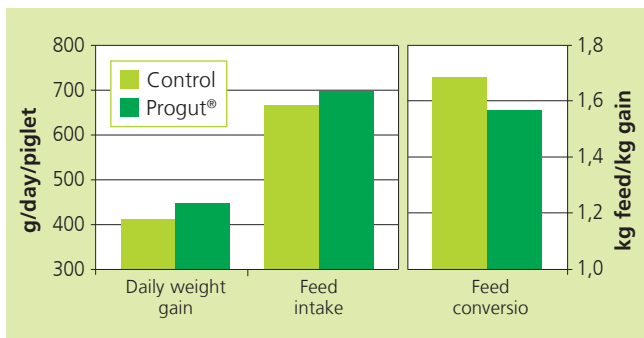
The intestinal tissue plays a central role in the immune system of the body. Early immunomaturaton of young animals with good immunoglobulin production and is essential in the fight against pathogens.

Progut® contains hydrolysed yeast cell wall structures like manno-oligosaccharides and β-glucans that are known to have immunomodulatory properties. It has in trials increased the production of immunoglobulin A (IgA) in the intestines of piglets and in the colostrum of sows. Improved IgA production decreases disease stress and correlates positively with the body weight of animals in challenged environments



Progut® has also increased the number of immune cells (lymphocytes, magrophages) in the gut epithelium. Their increased presence in the intestines suggests earlier immunomaturaton and improved protection against pathogens.

## Progut® has improved the growth and feed conversion ratio of piglets



The effects of earlier immune competence and the prevention of E. coli attachment in piglets can be seen in improved survival rate and reduced diarrhoea frequency. In combination with the positive effects of Progut® on the composition of intestinal microbiota these functions also have an influence on growth and profitability.

Progut® has in trials improved significantly the growth and feed conversion ratio of piglets after weaning compared to negative control. Trials have shown a 5 to 20% performance improvement with different weaning weights, diet compositions and microbial challenges. Progut® has also improved the uniformity of the piglets has increased birth weights.

Osijek University, Croatia 2008  
• higher number of lymphocytes in the intestinal epithelium

SOW TRIALS:  
Farm trials, Finland and Sweden 2002-2003  
• increased IgA content in colostrum

Research Farm, the Netherlands 2005  
• better growth of piglets before weaning

Research Farm, the Netherlands 2009  
• increased IgG content in colostrum and blood

### Generally recommended dosage rates

Suckling piglets and weaners	3 kg/t of feed
Older pigs (2 wk post weaning >)	2 kg/t of feed
Sow, pre-farrowing and lactation	1 kg/t of feed

## Together towards success!

Suomen Rehu is the feed division of Hankkija Oy, an agricultural trading company and the leading feed producer in Finland. The aim of our operations is to provide safe and effective product solutions for the well-being of animals, humans and the environment.

The access to unique research and development resources has resulted in a number of patented technologies and products, such as Progut® – new generation yeast feed ingredient.

More about the company at [www.suomenrehu.com](http://www.suomenrehu.com)