

**TECH OFFER**

**Products and Formulation Optimise Pig Health & Nutrition**



**KEY INFORMATION**

TECHNOLOGY CATEGORY:

Life Sciences - Agriculture & Aquaculture

Life Sciences - Industrial Biotech Methods & Processes

TECHNOLOGY READINESS LEVEL (TRL): **TRL8**

COUNTRY: **THAILAND**

ID NUMBER: **TO175032**

**OVERVIEW**

Piglets are vital to the pork industry, but they are often born weak and with insufficient milk, resulting in high mortality rates and the need for antibiotics. To address this issue, a technology provider has developed a formulation containing medium-chain fatty acids (MCFAs), which can help piglets recover quickly, disinfect bacteria, inhibit viruses, balance gut microorganisms, and improve immunity levels.

The formulation contains a high concentration of lauric acid and monolaurin, which account for more than 40% of the total fatty acid content. It also contains natural extracts and curcuminoids from palm kernel oil with techniques decarboxylated that help reduce oxidative stress, stimulate the immune system, and reduce inflammation in the digestive tract of piglets.

The technology provider is seeking collaboration partners to reduce antibiotic use in the pig industry, which will result in fewer chemical residues in meat and lower production costs.

## TECHNOLOGY FEATURES & SPECIFICATIONS

1. PKO and medium-chain fatty acids (highly digestible energy boosters)
2. Monolaurin and High Lauric Acid (C12) (inhibits bacterial, and pathogenic viruses and boosts immunity)
3. Natural extracts & curcuminoids
4. Sterilization in Vacuum Mixer homogenize
5. Specializes in the technology of nutritional supplement products for piglets and technical services for farms

## POTENTIAL APPLICATIONS

Livestock farming has been shifting its focus to reducing antibiotic use as one of the ways for pig farms to reduce production costs. Piglets in small groups often do not receive enough colostrum, leading to less energy to live on than normal and a higher risk of bacterial infection. The incidence of diarrheal diseases increases by more than 60-70%, causing piglets to be in a state of growth arrest with below-normal weaning weight.

The formulation developed by the research team positively affects the level of immunity, reduces the risk of bacterial infection and viral infestation, reduces the mortality rate by more than 40-50%, and increases the weaning weight of piglets by more than 25-30%. It also contributes to the reduction of production costs. Preliminary results show that the formulation can reduce piglet mortality rate by 35% and diarrhoea rate by 45% while increasing the growth rate by more than 25% ( $P < 0.05$ ). Total protein content, albumin content, and globulin are higher than in the control group ( $P < 0.05$ ).

## MARKET TRENDS & OPPORTUNITIES

The formulation has excellent quality and is cheaper than the products currently available in the market. The Thai domestic market is estimated to account for about 3% or \$377 million/year of the total livestock additives market due to the demand for meat products. There are also potential markets in Europe, Africa, and Canada. The Philippines and Vietnam are large markets for livestock feed additives with a higher market value than Thailand and the potential for formulation exports to both countries. The growth rate of the livestock feed additives market in both countries is expected to increase by 3.7%. The market share of total feed additives in Thailand, the Philippines, and Vietnam is expected to increase from \$125 million/year to about \$15 million/year.

## UNIQUE VALUE PROPOSITION

All ingredients used in the formulation are selected from natural extracts, with emphasis on using extracts that have the same potential as antibiotics. Through a standardized mixing process and tested for actual industrial use for more than 5 years. This formula and many other innovations are made with safe methods that have been tested and found safe by animal nutrition experts and researchers in Thailand.