LIGNOFEED® for Swine

- **INTRODUCTION**
  - Fiber is a complex and poorly understood nutrient with multiple physiological implications.
  - Fiber is chemically complex and poorly characterized, yet has critical physiological effects.
  - Traditional fiber sources (e.g., wood-based lignocellulose) are not optimized for piglet and sow
  - Solubility, fermentability, viscosity, and granulometry define fiber's nutritional value.

- **The LIGNOFEED® Innovation**
  - Sourced from Mediterranean agro-industrial by-products: almond shells, olive pit, grape skin, nut shell and almond shell.
  - Balanced mix of insoluble and prebiotic-soluble fibers (FOS), rich in polyphenols.
  - Micronized structure increases surface area and functionality at low inclusion .
  - Supports gut health and post-weaning adaptation.

- **Gut Morphology and Immune Modulation**
  - Increases goblet cells and villus height → improved mucosal barrier.
  - Promotes expression of tight junction genes (ZO-1, OCLN, CLDN-1).
  - Reduces gut inflammation and enhances immune markers (IL-10, TNFα).
  - Synergy of soluble + insoluble fibers enhances intestinal resilience.

- **Fermentation and Microbiota**
  - Higher fermentability than traditional lignocellulose → more SCFAs (e.g., butyrate).
  - Improves ileal bacterial diversity and supports beneficial taxa (e.g., Bifidobacteria).
  - Combination of FOS and inulin boosts prebiotic effects, especially in creep feed.

- **Efficacy Trials in Post-Weaning Piglets**
  - Five trials tested LIGNOFEED® in piglets (5.9–8.3 kg BW, 14–21d duration).
  - Results show improved growth (PV), feed efficiency (GMD, CMD), and digestibility.
  - Digestibility of dry matter, protein, and organic matter increased significantly ($P<0.05$).
  - LIGNOFEED® consistently enhanced fecal quality and reduced stool moisture.

- **Conclusions**

LIGNOFEED® is a next-generation fiber blend tailored for piglets.
It balances fermentable and inert fractions, improves gut integrity and microbial balance.
Proven efficacy in promoting performance and health in early-life swine and sow nutrition .

- **Product Line**
  - LIGNOFEED® P
  - LiGNOFEED® P+
  - LIGNOFEED® C

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