SWINE-FEED
DIRECT-FED MICROBIAL

SWINE-FEED CONTAINS A COMBINATION OF CONCENTRATED VIABLE CULTURE PREPARATIONS OF *BACILLUS LICHENIFORMIS*, *BACILLUS SUBTILIS*, *ENTEROCOCCUS FAECIUM* MICROBIALS AND *SACCHAROMYCES CEREVISIAE* FERMENTATION SOLUBLES

WHY FEED BENEFICIAL BACTERIA TO SWINE?

Beneficial bacteria play an important role in swine growth by:

- Ensuring optimal pH conditions for the endogenous enzyme function, thereby facilitating an optimal environment for feed digestion;
- Producing growth factors that stimulate the growth of beneficial bacteria like Bifidobacteria;
- Protecting the gastrointestinal tract by producing antibacterial substances that inhibit the proliferation of pathogens;
- Stimulating normal gut development through the production of volatile fatty acids;
- Promoting gastrointestinal health by preventing the colonization of pathogens and stimulating the development of immunity.

BENEFITS OF SWINE-FEED MOS (mannanoligosaccharides)

- Demonstrated to have greater pathogen binding capacity than leading MOS competitive product. Thus fewer pathogens colonize the gastrointestinal tract, thereby maintaining a healthier gut ecosystem;
- Beneficial modulation of the immune system, resulting in increased immunoglobulin synthesis, improved and more persistent titre levels post vaccination;
- Improved animal performance. Less energy spent repairing the gastrointestional tract and dealing with the stress induced by pathogenic proliferation;
- Improved gut health results in longer villi and thinner gastrointestinal membranes. This provides a greater surface area for nutrient absorption and less of a barrier to nutrients entering the blood flows from the gut.

SPECIFICATIONS

Description	Off-white / beige, free-flowing powder
Packaging	10, 20, 50kg pails
Ingredients	*Saccharomyces cerevisiae* fermentation solubles, *Bacillus licheniformis*, *Bacillus subtilis*, and *Enterococcus faecium*, fermentation products, sodium silico aluminate
Guaranteed Analysis	*Saccharomyces cerevisiae:* minimum 1,760 billion cells/kg Total Microbial Count: minimum 2,129 billion CFU/kg
Shelf Life	Up to 12 months
Storage and Handling	DO NOT FREEZE! Store in a cool dry environment out of direct sunlight. See MSDS.

Bionetix INTERNATIONAL *We work for nature*

Bionetix International
21 040 rue Daoust, Ste-Anne-de-Bellevue, Quebec, Canada H9X 4C7
T 514 457.2914 F 514 457.3589 www.bionetix-international.com

SWINE-FEED

DIRECT-FED MICROBIAL

SWINE-FEED consists of a probiotic derived from the cell wall of a single source of Saccharomycees cerevisiae (MOS). The polysaccharides obtained from the yeast cell wall consists of glucans, mannans, quitines, and galactans. The glucans are a group of d-glucose polymers with glycosidic linkages and 1,3 and 1,6 bonds. It also consists of probiotics containing *Bacillus subtillus*, *Bacillus licheniform* and *Enterococcus faecium*.

Enterococcus faecium and *Lactobacillus casei* are important bacteria for the health of the lower gastrointestinal tract. These beneficial bacteria help in pH modulation of the lower gastrointestinal tract, thereby creating an optimum environment for the endogenous enzymes to process feed efficiently, A further benefit is that these bacteria produce bacteriocins that inhibit the proliferation of *E. colli*, *Salmonella* and *Clostridia*.

Bacillus subtilis are aerobes that produce a variety of enzymes with very good protease, amylase, lipase, esterase activity with some xylanase and cellulase activity. The enzymes produced by the *Bacillus* strains help to improve feed efficiency and conversion.

Saccharomyces cerevisiae is an important probiotec organism that helps modulate the pH of the caecum and colon, as well as stimulate the growth of beneficial fibre and lactic acid utilizing bacteria. This results in an increase in the number of beneficial bacteria in the caecum and colon, improved food conversion, and efficiency and reduction in the frequency of constipation in sows.

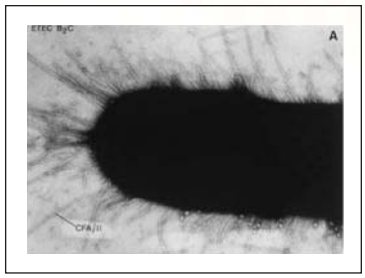
INSTRUCTIONS FOR USE

Include SWINE-FEED at a rate of:

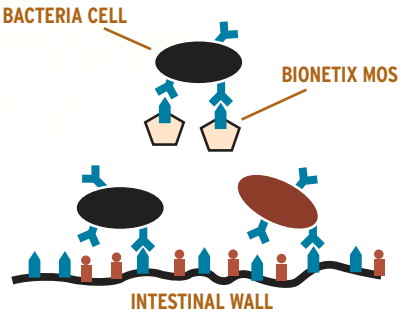
- 1kg per ton of feed in sow diets;
- 1kg per ton of feed in starter diets;
- 0.5kg per ton of feed in grower diets;
- 0.5kg per ton of feed in finisher diets.

For further information on application, contact your BIONETIX technical representative.

Examples of diarrheagenic E. coli with type 1 mannose-binding fimbrae that have specificity for Bionetix MOS and are flushed from the swine's GI tract making way for the beneficial bacteria to colonize it.



Pathogenic E. coli with fimbrae for GI tract attachment



A bundle-forming pilus on a diarrheagenic E. coli cell