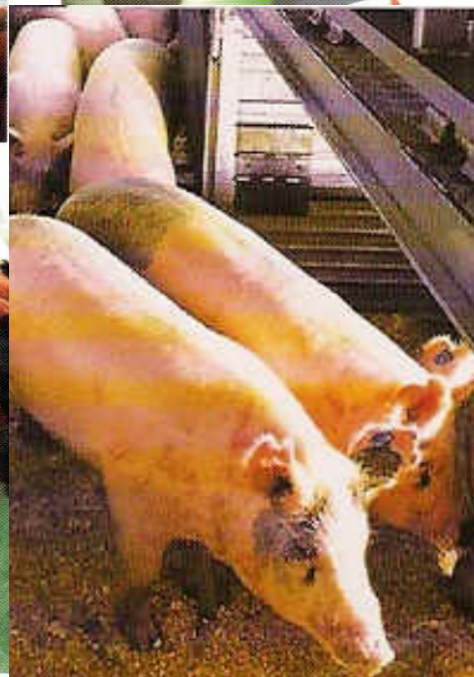


B I O L A C

A High Strength LIVEBIOS
Fortified With β -Glucans & Mannan-Oligosaccharides
to enhance activities in

- stimulation of immune system
- anti-infection
- improvement of health and overall performance



BIOFEEDRAS, LTD

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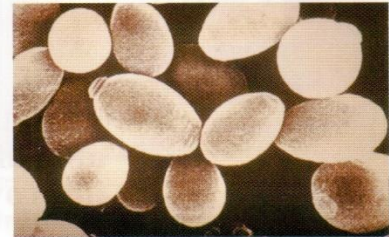


BIOLAC

BIOLAC is a fortified and performance-enhanced product based on our best-selling and well-established product--- LIVEBIOS . All the natural biogenic performance-enhancing prebiotics and probiotics in LIVEBIOS are fortified to achieve maximum returns.

PROBIOTICS:

- Several specific strains of microencapsulated live yeast *Saccharomyces cerevisiae* with high fermenting capabilities, and the metabolites from the culture medium they were grown in.
- Multiple bile-resistant microencapsulated lactic acid-producing bacteria:
Lactobacillus acidophilus, *Lactobacillus casei* and *Enterococcus faecium*.
- Heat-stable and enzyme-producing bacteria:
Bacillus subtilis and *Bacillus licheniformis*.



Saccharomyces cerevisiae yeast



Bacillus subtilis



Lactobacillus acidophilus

These beneficial microbes inhibit colonization of pathogens by competitive exclusion, resulting in reduced diarrhea and mortality. By producing lactic acid to lower intestinal pH, beneficial bacteria in **BIOLAC** inhibit proliferation of *E. coli* and other intestinal pathogens. The addition of digestive enzymes aids in the digestion of substrates in feed.

PREBIOTICS:

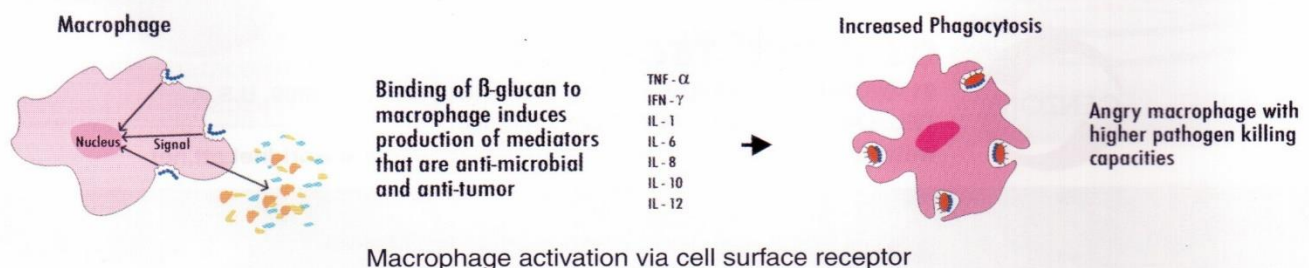
1. Biofeed Ras' **β 1,3- β 1,6-D-Glucan** is a natural polysaccharide that has a broad-spectrum of immune-stimulating activities to boost the immunity of animals. Biofeed Ras obtained its β -Glucan from mushrooms that are enriched with Beta-Glucans.



β -Glucan enriched mushrooms

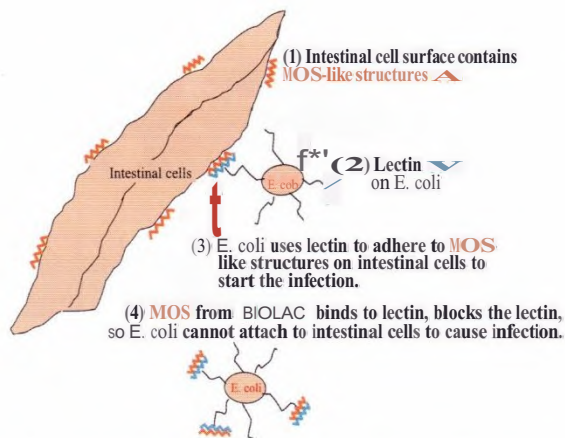
Toll-like receptors (TLR) are on the surface of large immune cells called macrophages that can be activated by β -Glucans. An activated macrophage engulfs, traps and kills pathogenic viruses, bacteria and parasites. Besides engulfing and killing pathogens in a non-specific manner, activated macrophages also produce a spectrum of immune potentiating cytokines (interleukin-1, interleukin-6, and Tumor Necrosis Factors ,etc) that are able to enhance specific immunity that animals are maintaining to defend environmental challenges or to establish an immunity to a vaccine administered.

Biofeed Ras' β -Glucan, extracted from mushrooms, is enriched with β 1,3- β 1,6 D-Glucan, known to have higher immune stimulating activity than β -Glucan of β 1,3- β 1,4 configuration.



2. Mannan-Oligosaccharide:

Mannan-Oligosaccharide (**MOS**), a natural anti-infective molecule, is extracted from the outer cell wall of yeast *Saccharomyces cerevisiae*. Mannan-Oligosaccharide can attach to pathogens thereby preventing them from adhering to cells of intestinal tract to cause infection.



3. Digestive Enzymes:

Feed digestion is the key to successful animal performance. Complete digestion not only provides animals more nutrients but also stifles pathogens in the lower digestive tract by limiting the amount of remaining nutrients. Enzymes, which are the most important factor for digestion, are functional protein molecules that catalyze and accelerate the rate of feed digestion. **BIOLAC** contains a high potency of multiple digestive enzymes to enhance feed digestion, maximize feed utilization, improve lower intestinal health and reduce animal waste.

BENEFITS OF LACTURE

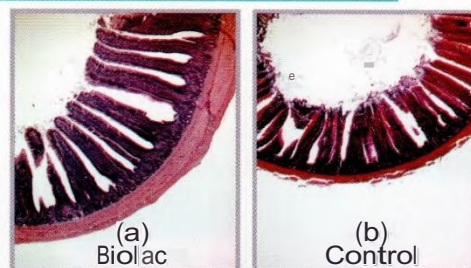
Observed benefits on commercial performance parameters from global feed trials.

A. Reduction Of Metabolizable Energy (ME) Requirement In Feed:

Inclusion of **BIOLAC** in feed can reduce the requirement of Metabolizable Energy of 120 Kcal to 130 Kcal per kilogram of feed, without reducing livestock's performance. With feed ingredient costs continuing to rise, adding **BIOLAC** to feeds will improve profitability through reduced feed costs by minimizing the use of expensive vitamins and minerals and the substitution of higher cost feed ingredients.

B. Improvement of Nutrient Absorption Through Increased Villi Length In Small Intestine:

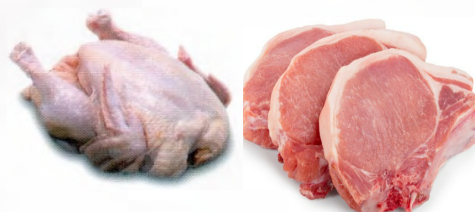
BIOLAC has been shown to improve the intestinal health and performance of livestock through a positive alteration in gut microflora. The elongated villi in the intestinal epithelia can absorb nutrients more efficiently with less wastage.



C. Meat Enhancer:

The practice of using antibiotics in animal feeds to control pathogens is detrimental to meat quality because antibiotics are protein synthesis inhibitors.

The inclusion of comprehensive and potent content of probiotics and prebiotics in **BIOLAC** to reduce the use of antibiotics in feed, enhances the texture, tenderness and taste of livestock meat.



D. Improvement of egg quality:

Egg/shell weight, yolk color, shell thickness, shell strength and packaging strength are enhanced.



E. Reduction In Impact On The Environment:

BIOLAC can degrade the indigestible anti-nutritive fibers in feed to unlock additional nutrients. Less undigested grains in animal waste and less noxious ammonia and hydrogen sulfide leads to a greener environment.

RECOMMENDED RATE OF USE (PER TON OF FEED)



Prefarrowing lactation	2.0 kg
Starter, Grower, Gestation	1.0 kg
Finishing	0.5 kg



Chicks	2.0 kg
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Broiler, Layer	1.0 kg
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Duck, Goose, Turkey	1.0 kg
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** Add BIOLAC either with your premix
or directly in feed mixer.*

**For optimum performance BIOLAC should be fed
throughout the feeding cycle.**

Physical and Chemical Characteristics

Appearance	: Light to medium brown powder
Odor	: Strong pleasant yeast aroma
Characteristics	: Slightly hygroscopic with a solubility of approximately 8 - 9 grams per 100ml of water.
Packaging	: 25 kg net weight multi-layer paper bags with inner lining.
Storage	: Store in a cool and dry place away from heat and direct sunlight. Keep opened bags tightly closed when not in use.
Stability	: 18 months in original packaging.

BIOLAC is carefully researched and formulated to avoid any ingredient which would negate the effect of others. All ingredients are included at effective levels with the animal's needs and requirement evaluated. **BIOLAC** is targeted to improve the farm's profitability through optimization of digestion and reproductive functions.

BIOLAC is university tested, veterinarian recommended and used by animal nutritionists. All ingredients used are non-toxic and generally regarded as safe.

