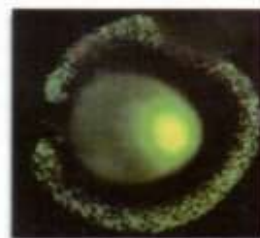
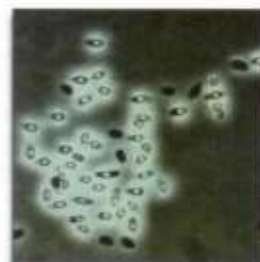
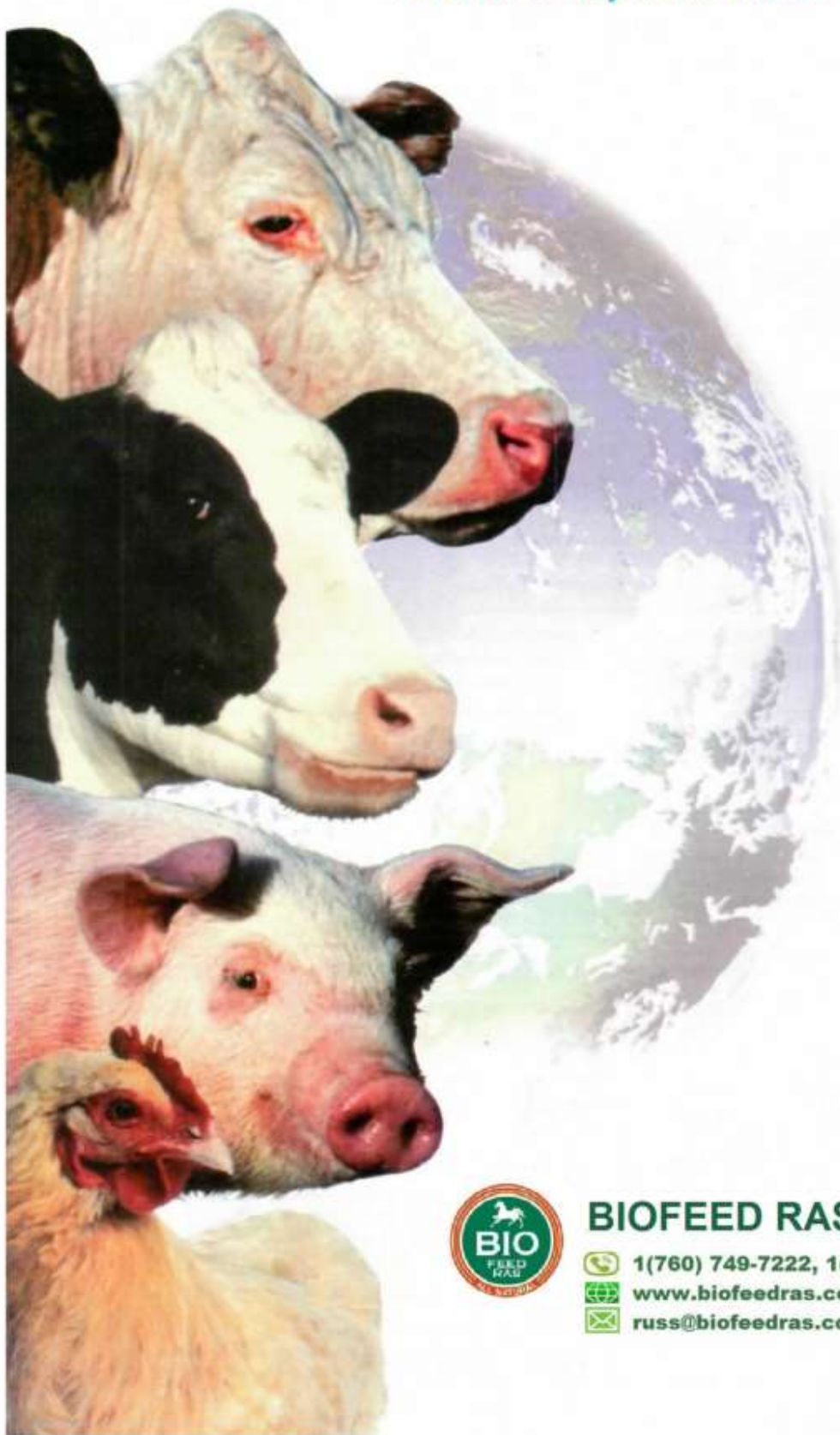




LIVEBIOS

A Natural Way To Maximize Your Feed Power



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LIVEBIOS

A Natural Way To Maximize Your Feed Power

Livebios is a natural feed enhancer fortified with 3 main groups of natural growth promoters for modern livestock and poultry production:

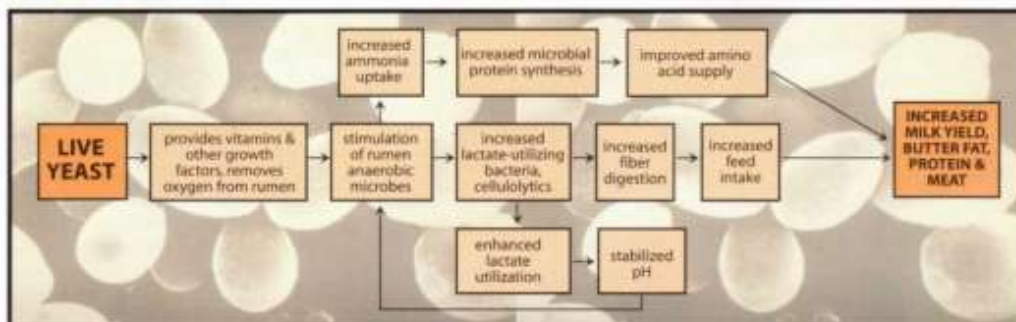
Group 1. Probiotics :

A. <i>Saccharomyces cerevisiae</i>	min. 5.0×10^{12} Cells per kg.
B. <i>Lactobacillus acidophilus</i> & <i>Lactobacillus casei</i>	min. 5.0×10^9 CFU per kg.
C. <i>Streptococcus faecium</i>	min. 5.0×10^9 CFU per kg.
D. <i>Bacillus subtilis</i> & <i>Bacillus licheniformis</i>	min. 5.0×10^{11} CFU per kg.

Special Features:

- A. *Saccharomyces cerevisiae* Yeast cultures: Contains 3 strains (CZ 8810, CZ 9201 & CZ 9820) with high fermenting and reproductive capabilities with their culture media on which they are grown. The culture medium will assist in the multiplication of live yeast once ingested in the GI-tract.

Mode Of Action:



Beneficial bacteria that can feed on mannan-oligosaccharide.



Bifidobacterium bifidus



Lactobacillus acidophilus

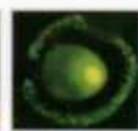
- B. Specially selected strains of *Lactobacillus acidophilus* (CZ 103), *Lactobacillus casei* (PLC 13) and *Streptococcus faecium* (PS 303) are bile resistant and micro-encapsulated to enhance their stability and viability in the digestive tract.
- C. *Bacillus subtilis* and *Bacillus licheniformis* produce large quantities of digestive enzymes and out-compete with pathogens resulting in lower rate of diarrhea.



Bacillus subtilis



Bacillus subtilis form stable endospores



Microencapsulated *Streptococcus faecium*

Group 2. Immuno-Activators :

A. Mannan-Oligosaccharides:

Mannan-Oligosaccharides are potent immuno-stimulants derived from enzymatic hydrolysis of the outer cell walls of 3 beneficial micro-organisms---*Paecilomyces* sp., *Saccharomyces cerevisiae* Yeast and *Ganoderma lucidum* (reishi mushroom).

Special Features:

- BIOFEED RAS' Mannan-Oligosaccharides are phosphorylated to increase pathogenic binding capacity.
- Extraction of Mannan-Oligosaccharides from 3 beneficial micro-organisms provides a broad-spectrum pathogen binding with synergistic effects.

Mode of Action:

i. Binding Pathogens:

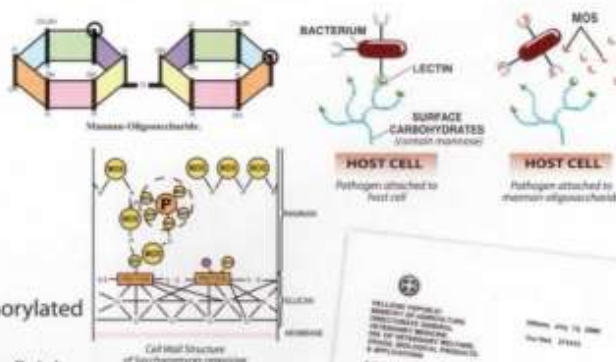
An ability to prevent certain pathogens from attaching to the epithelium of the intestinal tract.

ii. Starving pathogens of sugars needed for growth:

Mannan-Oligosaccharides can only be utilized by beneficial bacteria and they multiply and suppress the proliferation of pathogens. Pathogens cannot utilize mannan-oligosaccharides, cannot multiply and are starved to death.

iii. Stimulation of Immune Response:

Mannan-Oligosaccharides are potent immuno-stimulants.



Livebios is distributed in the European Union as **Yeasture-W** for use in cattle, poultry and swine.



Macrophage trapping & engulfing viruses.



Macrophage attacking bacteria.



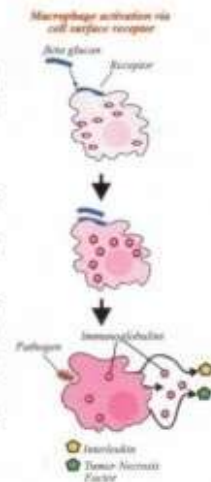
Macrophage communicating with T-cell.

B. β 1,3- β 1,6-D-Glucans:

These revolutionary all-natural immune cell activators are derived from the inner cell wall extraction of *Paecilomyces* sp., *Saccharomyces cerevisiae* Yeast and *Ganoderma lucidum*.

Special Features:

- The β 1,3- β 1,6-D-Glucan configuration provides more bonding sites on its molecule and is more effective than the β 1,3D-Glucan configuration.
- Livebios'** Beta Glucan molecule is made up of repetitive sugar units of 27 or more so it is more effective as a macrophage activator.
- Livebios'** Beta Glucan is highly purified with the outer layer of mannoprotein removed. The beta-glucans of the inner yeast cell walls will be more exposed for recognition by the macrophage. Therefore, full macrophage activating capability can be achieved.
- Livebios'** beta-glucans are micronized to increase the surface area so that more macrophages can be attached for activation.



Mode Of Action:

There are specialized receptors on the surface of macrophage that can be activated by beta-glucans. The activated macrophages can trap and engulf viruses and pathogens.

C. Colostrum

Colostrum is the first milk secreted by the cow for the few hours after calving and is very high in immunoglobulins. This supplemental immune factor can transfer passive immunity to newly born animals through activity in the digestive tract. Immunoglobulins protect the gut from bacterial infection, especially *E.coli*.

Special Features:

- BIOFEED RAS'** colostrum contains highly concentrated biologically active mixture of immunoglobulin classes including IgG1, IgG2, IgM, IgA, IgD and IgE for a total immunoglobulin content of about 20%. Of that percentage, about 80% is IgG (especially IgG1). IgG is stable in acidic conditions and is not broken down by digestive systems, delivering more IgG to the small intestines.
- Beta-Lipid Coating increases cellular absorption of colostrum by nearly 100%

Group 3. Digestive Enzymes and Chelated Minerals

Livebios is fortified with several important digestive enzymes and chelated minerals to enhance growth and performance. The following digestive enzymes and chelated minerals are included at effective levels with the animal's requirements evaluated.

i. Digestive enzymes: Alpha-amylase, protease, cellulase, lipase, beta-glucanase and pectinase.

ENZYME	SUBSTRATES	AVAILABLE NUTRIENT	UNITS / KG
Amylase	starch, glycol	sugar	min. 10,500,000
Protease	protein	amino acids	min. 1,000,000
Cellulase	cellulose	sugar	min. 480,000
Lipase	fat	fatty acid, glycerol	min. 300,000
Pectinase	pectin	galacturonic acid	min. 200,000
Xylanase	pentosan	sugar	min. 140,000
β -glucanase	β -glucan	sugar	min. 140,000
Lactase	lactose	sugar	min. 10,000
Phytase	phytic acid	inositol, phosphorus	min. 0 - 70

* The use of phytase in ruminant diets is not warranted since rumen microbes are capable of hydrolyzing phytic acid, so in ruminant formulation, no phytase is added but extra cellulase is incorporated.

ii. Chelated Minerals: Iron, zinc, manganese and copper.

Livebios is also fortified with the following growth promoting ingredients:

Clinoptilolite (Mycotoxins binder) *Yucca schidigera* extract, *Aspergillus oryzae* fermentation extract and fermentation solubles, UGFs (Unidentified Growth Factors) and molasses.

BENEFITS OF LIVEBIOS :

- All natural ingredients with biogenic performance-enhancing effects, no withdrawal time.
- Immunostimulatory effects, stabilize gut microflora, improve digestion, diarrhea prevention.
- Reduce mortality, especially effective for young animals, due to their unstabilized gut microflora and their poorly developed immune system.
- Improved digestibility with significant improvement in feed efficiency, average daily gain, flock uniformity, livability and increase reproductive performance.
- Assist livestock to realize their genetic potential.
- Increase feed palatability as **Livebios** contains glutamic acid, an appetite enhancer, resulting in gastric juice secretion and salivation, improve nutrient utilization.
- Live yeast cells and all other probiotics are DNA profiled for strain consistency assurance.
- Bile salt tolerance: In the gut, bile salt concentrations are inhibitory to many probiotics. Each of **Biofeed Ras** probiotic strains can stand up to 350 ug/ml concentration of bile salts.
- Microencapsulation protects the probiotics by a special process of coating. When the probiotics reach the gut, enzymes break down the coating to release the probiotics.
- The stability process used for **Livebios** manufacturing gives **Livebios** the ability to withstand the heat of pelleting process (up to 85°C), which means **Livebios** can be incorporated in a pelleted feed with minimum loss of activity.



Chelated Minerals



RECOMMENDED RATE OF USE (PER TON OF FEED)



Dairy Calf Starter	2.0 kg
Grower, Dry Cow	1.0 kg
Lactating Cow	2.0 kg
Beef Calf	1.0 kg
Receiving Rations	2.0 kg
(or 5 g per calf starter per day and 10 g per head per day for the rest.)	

Use LIVEBIOS

- During the dry period
- During early lactation
- In high producing cows
- In highly fermentable diets
- * **LIVEBIOS** can be top-dressed or mixed into grain mixes and complete feeds.

Sheep, Goat, Deer, Horse 1.0 kg
* or 10 grams per head per day



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



Chicks	2.0 kg
Layer, Broiler, Turkey	1.0 kg
Duck, Goose	1.0 kg

* For pig & poultry, add **LIVEBIOS** either with your premix or directly in feed mixer.

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



BIOFEED RAS' Natural Products Guide

- | | |
|-------------|------------------------|
| 1. LIVEBIOS | 6. RASMOS |
| 2. MINGFIX | 7. RASACID-WAY |
| 3. BIOLAC | 8. BIOFLEX4-MIX |
| 4. BIOODOR | 9. BIOSE |
| 5. RASZYME | 10. RAS PHOSZ YME 1000 |

All **BIOFEED RAS** products comply with GMP specifications and strict QC/QA regulations. **BIOFEED RAS** products' field efficacy is proven day after day in more than forty countries.

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	: Are packed in 25 kg net weights multi-layer paper bags with inner polyethylene lining.
Storage	: Store in dry cool place away from heat and direct sunlight. Keep partially opened bags tightly closed when not in use.
Stability	: 24 month in original factory package.

LIVEBIOS is carefully researched and formulated to avoid any ingredient which will negate the effect of others. We use organically bound chelated minerals to avoid reducing the viability of microbials. All ingredients are included at effective levels with the animal's needs and requirement evaluated. **LIVEBIOS** is targeted to improve the farm's profitability through optimization of digestion and reproductive functions.

LIVEBIOS is university tested, veterinarian recommended and used by animal nutritionists. All ingredients used are non-toxic and generally regarded as safe. The ingredients meet all requirements of the American Association of Feed Control Officials, Inc. (AAFCO) as listed in their current edition.

