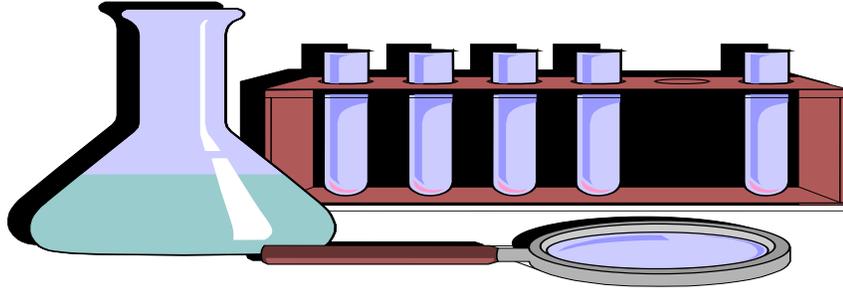


WELCOME TO: ULTRA BIO-LOGICS INC.

Introducing Our New 2004 Enzyme Feed Ingredients Information Catalogue

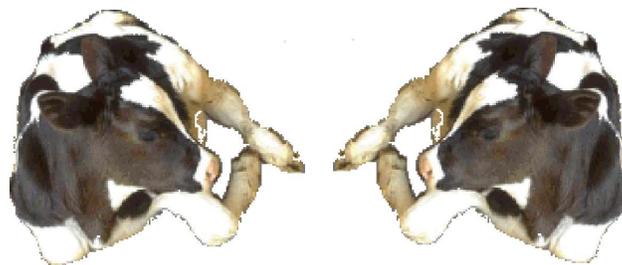


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Product Disclaimer: Our Products are not DRUGS. This information has not been evaluated by the Food and Drug Administration. These products are not intended to treat, cure or diagnose any medical condition. It is the responsibility of the customers that their specific use of any products from Ultra Bio-Logics Inc. does not infringe on local laws, regulations patents or other third party rights.



PHYTASE ENZYME



DESCRIPTION: Phytase is an enzyme produced from the fermentation of a selected strain of *Aspergillus niger*. This enzyme hydrolyzes the phosphate residues from phytic acid (phytate).

CHARACTERISTICS: Phytase is supplied as a tan powder which is readily miscible in water.

- **This product is standardized to: 1500 PU/gm (Phytase Units).**
- **Also available as a Food Grade: Concentrate 3000 PU/gram**
- Substrate: Phytic acid
- Reaction Condition pH 6.0. 37 C. 30 minutes
- Unit definition One phytase unit is the amount of enzyme that liberates an organic phosphate at 1 mole per minute.
- **Phytase is very stable in an acidic environment** (pH 3.0-6.0 w/optima at 5.5) and exhibits excellent activity at pH 2.0-3.0 (similar to stomach pH)
- **Phytase is sold as a GRAS product and complies** with current FAO/WHO and FCC recommendations for food grade enzymes.

COMMENTS : Studies have been conducted on the possibility of using the enzyme phytase in animal feeds. The need for phytase arises since phytic acid phosphorous is not readily available to monogastrics such as poultry and swine (also humans) and must be added to the feed in the form of inorganic phosphorous.

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PHYTASE PROPERTIES

Roughly two thirds of the phosphorous present in seeds of many vegetable feedstuffs (cereals, wheat, and various grains) is bound in the form of phytin phosphorous. Major elements such as calcium, magnesium, iron and zinc are frequently bound (chelated) as cations in phytate.

Phytase is an enzyme which hydrolytically cleaves and frees the bound phosphorous from the phytic acid molecule, liberating calcium, magnesium cations at the same time.

This plays an important role in digestion as phytate has the ability to form insoluble complexes with minerals and inhibit mineral absorption in the small intestine.

STORAGE AND PACKAGING

Please inquire about our available packaging options.
This product should be kept in a dry cool location. The drum should be kept closed when not in use. Exposure to high humidity and temperature is not recommended.

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BIO-GLUCANASE - 10x



The Water Soluble Enzyme Solution For Improved Feed Assimilation

PRODUCT: A Water Soluble blend of the extracts of BACILLUS SUBTILIS and ASPERGILLUS NIGER which includes high concentrations of beta-glucanase (gumase) and small to moderate levels of alpha-amylase, hemi-cellulase, pectinase, protease and xylanase activities.

- **IDENTIFICATION:** 1,3-(1,3;1,4)- beta-D-glucan 3 (4) glucanohydrolase, I.U.B. No. 3.2.1.4 (according to the Recommendations of the Nomenclature Committee of the International Union of Biochemistry on the Nomenclature and Classification of Enzymes. Association of American Feed Control Officials.
- **AAFCO feed ingredient definition number 36.6.**

A- Use less high cost soya by un-locking the non-starch polysaccharides and raffinose, which increases the total energy of soya and even corn, by 10 to 17%

- **B- Bio Glucanase 10x** also increases amino acid digestibility
- **C- Bio Glucanase 10x** could save you as much as 12% in a typical diet
- **D- Bio Glucanase** is completely water soluble and highly stable during pelleting
- **Bio- Glucanase 10x** is a pure concentrate free of inert fillers and other quality reducing agents, making it one of the most economical and effective feed manufacturers enzyme ingredients available.

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BENEFITS: BIO-GLUCANASE-10X

*** Reduce Energy By Up To 10% ***

*** Reduce Protein And Amino Acids By Up To 10% ***

*** Reduce Your Net Feed Cost By A Min. Of 10 to 60 U.S. dollars/per/ton ***

PURPOSE: As a concentrated source of hydrolytic (degrading) enzymes which may be used in feed industry products and in enzyme bearing supplements where increased enzyme activity is desired.

ANALYSIS:

Beta glucanase activity	1000 BGU/mg
This would be equivalent to	1,000,000 BGU/g
Alpha amylase	Moderate
Hemi-cellulase	Moderate
Pectinase	Moderate
Protease	Moderate

Analysis of moderate enzyme activities upon request.

METHOD OF ANALYSIS: Modified FCC, AATCC (ANSI) Methods



Poultry and swine research shows significant weight gain and feed conversion compared to non treated groups with overall feed cost per lb gain reductions

- Suggest use rates of **8 to 12 oz, or 250 to 360 grams per/metric/ton**
- APPEARANCE: Light tan, free flowing granular powder, fermentation odor
- STORAGE CONDITIONS REQUIRED: For optimal activity over longest storage time, keep in dry warehouse under 100F / 40C. Half life under these conditions estimated to be in excess of two years
- PRECAUTIONS: See above storage conditions, MSDS sheet for information concerning enzymes
- PACKAGE SIZES: 25 and 50 lb neutral resealable polyethylene lined fiber drums.

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BIOZYME-ABHP

PRODUCT: A water dispersible blend of the extracts of *Bacillus subtilis* and *Aspergillus oryzae*, which includes high concentrations of alpha-amylase, beta-glucanase (gumase), protease, and hemi-cellulase.

PURPOSE: As a concentrated source of hydrolytic (degrading) enzymes which may be used in enzyme bearing grain and feed supplements for use in treating animal feeds and ingredients where increased enzyme activity or ease of processing is desired.

STATUS: GRAS Animal Feed Ingredient. American Association of Feed Control Officials definition: 36.6 Dried *Bacillus subtilis* Fermentation Extract. Dried *Aspergillus oryzae* Fermentation Extract.

ANALYSIS:

Amylolytic Activity: 6,000 B.A.U./gram
Betaglucanase Activity: 4,000 Betaglucanase units/g.
Hemicellulase Activity: 500 Hemicellulase units/g.
Protease Activity: 9,000 Proteolytic Casein units/g.

METHOD OF ANALYSIS: Amylase - Modified FCC, AATCC (ANSI) Method Protease Modified FCC assay methods supplied upon request

APPEARANCE: Light tan granular powder, yeasty odour

Storage Conditions Required: For optimal activity over longest storage time, keep cool in warehouse under 120 F.

PRECAUTIONS: see above (storage conditions); avoid use in extremely dusty environment. Concentrate may cause allergic reactions in certain susceptible individuals, as with many other feedstuffs. See material safety information for further data as to the safe handling of enzyme concentrates.

PACKED IN: 50 lb. multiwall shipping bags, 50 lb. drums optional

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BIOZYME-ABHP

Important Note: Bacillus subtilis amylase is particularly useful in industrial and agricultural processing applications due to its high degree of stability. This enzyme's resistance to denaturation by temperature and pH extremes make it particularly durable.

This endo-acting amylase very rapidly dextrinizes starch components bypassing branch points which often serve as blocking points to other exo-acting amylases including glucoamylase.

Bacillus subtilis amylase is particularly useful due to its activity upon a broad range of starches. Although a primary enzyme associated with Bacillus subtilis extracts is amylase, other useful hydrolases are often included in these products.

These other enzymes catalyze the breakdown of complex carbohydrates other than starch. Hemi-cellulase activity attacks plant wall components.

Beta-glucanase helps break down beta-linked glucose polymers often associated with grains, such as barley, oats, and wheat, and other products, including soy bean meal and locust bean gum. This additional digestive action is broadly classified as a gumase activity. The presence of soluble calcium has a stabilizing effect on most enzymes of this type.

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ULTRA ACIDOLA PLUS



Description: The **MicroFlora stabilizer preparation for calves** and pets with a source of live beneficial naturally occurring beneficial organisms, vitamins, electrolytes and trace minerals. Example Uses: After antibiotic treatment, stress conditions, diarrhea, vomiting etc.

Typical Analysis

Lactobacillus Acidophilus.....	2.0 billion/g
Bifidobacterium Thermophilum.....	2.0 billion/g
Bifidobacterium Pseudolongum.....	400 million/g
Vitamin A.....	520,000 I.U./lb
Vitamin D3.....	120,000 I.C.U./lb
Vitamin E.....	169 I.U./lb
Vitamin B-12	502 mcg./lb

Solubility: Excellent Storage
Condition: Store in a cool dry place

Acidola Plus Also Contains

Like the antimicrobial compounds and lactic acid, hydrogen peroxide is a metabolic by-product of lactobacilli. Also like them, it works within the gut to control the growth of harmful bacteria.

Hydrogen Peroxide: Hydrogen Peroxide is a natural compound with a long history of health and household use as a sanitizing agent

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One study of lactobacilli cultures revealed that the growth of Pseudomonas, Bacillus and Proteus bacteria declined as the lactobacilli's production of hydrogen peroxide increased. Another study concluded that lactobacilli can be beneficial in food products because of their ability to produce hydrogen peroxide. This study indicated that it was the hydrogen peroxide produced by the lactobacilli that enabled them to suppress the growth of S. aureus, E. coli, C. botulinum and other undesirable organisms.

Many researchers are simply not certain of the precise bacteriostatic roles played by antimicrobials, lactic acid and hydrogen peroxide. What is certain is that substances produced by Lactobacillus acidophilus do help establish a normal gut microflora. They do so by inhibiting the growth of disease-causing organisms within intestinal tracts.

Acidola Plus Other Nutrients: Lactase, acidolin, lactic acid and hydrogen peroxide are the most significant by-products of Lactobacillus acidophilus metabolism. But it is an interesting sidelight on the ancient, mutualistic relationship between this organism and animals that several other beneficial by-products are also produced. Among them are thiamine, riboflavin, pyridoxin e, niacin, biotin, choline, Vitamin B-12 and pantothenic, lipoic and folic acid.

Using treatment level doses of a broad spectrum antibiotic destroys most-if not all-of the bacteria in the intestinal tract, including lactobacilli. Since most bacteria are beneficial or neutral and since bacteria make up a high percentage of most gut contents, such dosages leave an unbalanced gut condition as a side effect.

Using Acidola Plus soon after such antibiotic treatment can counter this side effect. As lactobacilli establish in the treated gut, the weakened animal benefits quickly from the restorative effects of this organism. In addition, introducing lacto bacilli to the bacteria-free gut of a treated animal is similar to the inoculating effect of introducing lactobacilli to newborns. If lactobacilli are the first organisms to re-enter the treated gut, they can reduce the pathogenic effects of re-entering harmful bacteria.

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Acidola Plus is a concentrated source of unusually viable lactobacilli. Using it after therapeutic antibiotic dosages can restore and then protect the natural gut ecology of the treated animal.

Acidola Plus Summary: Lactobacilli are a safe, natural aid to digestion and the establishment of a proper gut microbial balance.

Acidola Plus contains a uniquely sturdy strain of Lactobacillus acidophilus in an optimal milk sugar culture of human grade purity.

PURPOSE: To be fed as early as possible to animals as an aid in the prevention and treatment of the effects of stress. Acidola Plus provides essential electrolytes, and minerals lost due to scours and dehydration.

Acidola Plus is a source of natural bacteria for the reestablishment of a positive microflora in the gastro-intestinal tract.

DIRECTIONS: Mix 200 to 300 grams per/ton/total feed in livestock and poultry and pet food rations. Very effective in aiding younger animals into conversion to grain rations and stabilizing stressed animals after anti-biotic treatment, at a rate of 300 to 500 g/per/ton.

May also be mixed with 100 liters of cow's milk or water for calves, chicklets, piglets and puppies. For younger animals continue to feed for the first 30 days. Smaller operations 2 to 5g per head/day.

Product Research Brief U.S. Division

Example Of Ultra Acidola Plus In Calves

The following results were compiled from a field trial on 60 veal calves (30 test, 30 control). The results demonstrate that the Acidola Plus treated calves had a lower incidence of scours and no mortality when compared to the control group.

MORTALITY

With Acidola Plus..... 0%
Without Acidola Plus..... 17%

PERCENT SCOURING FIRST THREE DAYS

With Acidola Plus..... 75%
Without Acidola Plus..... 100%

Total increase of scours observed during trial

With Acidola Plus..... 65%
Without Acidola Plus..... 97%



Test was conducted on a commercial veal farm in Pennsylvania, U.S.A.. For additional information on this and other products contact us by email.

Packaging: 3kg, 10kg and 20kg plastic resealable reusable pails

Swine Enzyme Solution SP-20

Swine Hog Drinking Water Enzyme Natural Nutritional Additive Product

Concentrated Liquid Water Injectable



Enzymes and Natural Plant Extracts Formula

Ingredients: Swine Enzyme Solution SP-20 is a swine feed additive containing more than 20 enzymes combined with beneficial organic plant extracts of natural origin in a concentrated, easy to use and mix liquid form, as a swine drinking water additive for sows, piglets, starters, growers and finisher applications.

Swine Enzyme Solution SP-20 Does not contain any synthetic growth hormones or mutating live bacterial cultures.

Swine Enzyme Solution SP-20 Each enzyme and organic ingredient has a beneficial effect on swine growth, health and overall performance.

**Improves Average Weight Gain In Starters And Growers
Improves Overall Feed Conversion With Increased Profits
Less Mortality Stillborns and Improved Grading
Reduced Phosphorus Ammonia and H₂S Gases in Wastes**

Swine Enzyme Solution SP-20: Contains:



A. Soluble Water Stable Enzymes

1. Boost the immune system: In a series of chemical reactions the enzymes contained in PB-20 produce amino acids for the immune cells. These immune cells then produce interleukins, which play a critical role in fighting infection.
2. Reduce water-holding capacity, thus increasing dry matter content stimulating feed intake improving Feed Conversion Ratio.
3. Reduce dry matter outside the body, thus have a great impact on excreta volume and composition
4. Increase the effectiveness of host enzymes thus improving Feed Conversion Ratio and promoting growth.
5. Increases T-Cell production and activity within a short period after digestion, raises white cell blood count thereby strengthening the immune system.
6. Improve digestion / absorption of nutrients required for proper immune system performance and proper production performance by increasing energy level
7. Aid in digestibility by making nutrients more bioavailable to the animal improving Feed Conversion Ratio and promoting growth.
8. Reduces flatulence.
9. Phytase for better phosphorus bioavailability

B. Liquid Natural Plant Sarsapogenin: Glycocomponent fraction + Saponins

1. Glycocomponent fraction binds to ammonia, thus reducing ammonia levels in animal production facilities, this results in reduced odor and improves animal performance under wide variety of conditions by reducing environmental stress while enhancing growth.
2. Saponins are effective in suppressing rumen protozoa, again by reacting with cholesterol in the protozoal cell membrane, causing it to lyse, thus decreasing the impact of protozoal diseases (coccidiosis) on the performance of the animal such as diarrhea and malabsorption thereby increasing growth rate and feed efficiency.
3. Particularly in situations of crowding and stress, steroid saponins contained in SP-20 have been demonstrated to improve animal performance thereby acting as a Natural Growth Aid

C. Laminaria Species Soluble Atlantic Kelp: Amino acids + Trace & Macro Mineral+ Vitamins



1. Amino acids are the building blocks of life, joined together in chains that make up proteins. Proteins are a necessary part of every living cell in the body. Proteins are very important in the manufacturing of hormones responsible for a strong immune system and they booster the immune system by enhancing the production of T-cells and antibodies;
2. Since the hogs digestive enzymes are made up of amino acids, if enough amino acids are not provided, enzyme production will diminish and digestive function can become progressively more impaired leading to disease
3. Trace & Macro Mineral: with high levels of essential immune nutrients such as Vitamin A (Essential for immune system), Vitamin C and E-Benefits immune system, Vitamin B2 Creates body tissue and red blood cells, Iron -Essential for immune function, Selenium-Aids immune response , Zinc- a critical nutrient of immunity.
4. Known as a great promoter of glandular health, especially for the pituitary, adrenal and thyroid glands.
5. Natural source of iodine, which acts as an antibiotic to kill germs, increasing growth rate and feed efficiency.
6. Acts as a receptor blocker for many pathogens including Salmonella
7. Has also increased the protein to fat ratio in animals increasing growth rate and feed efficiency.

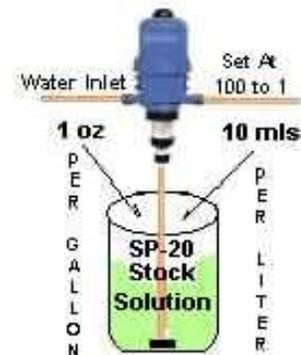
Swine Enzyme Solution SP-20: provides synergistic effects from all its components, and the result is a healthy digestive tract efficiently providing nutrients for optimum health and performance, and an active immune system capable of overcoming the disease challenge.

General Use Rates Methods: Swine Drinking Water Applications

a- Prepare a stock solution of 10 ml of Swine Enzyme Solution per Liter (1,000 ml) or (1 oz per gallon) of water and inject this concentrate into your water line through your medicator unit set at a ratio of 1 to 100 (As per illustration)

b- Use the above solution for the first 7 to 10 days and then reduce the concentration of your stock solution by 50% until your growers and finishers are shipped for processing.

Swine Enzyme Solution SP-20: Costs pennies per pig, resulting in savings and improved profits for growers. Our liquid concentrate will not clog water lines or filters and will actually keep them free flowing by breaking down and controlling organic blockers.



Swine Enzyme Solution SP-20: May also be sprayed on feeds and in swine / pig housing, please contact us for details.

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