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Dyadic[®] Beta Glucanase BP CONC

PRODUCT #510

(For Consideration in Animal Feed Applications)

I. INTRODUCTION:

Dyadic Beta Glucanase BP CONC is a powder acid beta-1, 3-1,4-glucanase/cellulase product from *Trichoderma longibrachiatum* (formerly *T. reesei*), a micromycetic fungus producing enzyme. Products of this origin are used worldwide without any limitations as processing aids in brewing, juice extraction, wine clarification, and animal feed. The high level of β -1,3-1,4-glucanase/xylanase/cellulase allows it to break down β -glucans in poultry and swine diets containing high amounts of **barley**, wheat, rye, triticale, and other certain cereals. It should be noted that without such enzymes the broiler diets can not accommodate more than 20% wheat, 15% barley, or 15% rye.

II. PHYSICAL PROPERTIES:

Appearance: Off-white powder (color does not affect or reflect activity)
Odor: Slight fermentation odor
pH (1% soln): 4.5 ± 1.0
Guaranteed Activity: Beta-Glucanase 30,000 to 36,000 Units/g
Side Activities (typical): Cellulase 115,000 to 140,000 Units/g
Additional Side Activities: pectinase, mannanase, xyloglucanase, laminarase, β -glucosidase, β -xylosidase, α -L-arabinofuranosidase, amylase, protease

III. PRODUCT CAPABILITIES:

When run as directed in this bulletin, **Dyadic Beta Glucanase BP CONC** can be utilized to accomplish the following:

1. Decrease the viscosity of arabinoxylans and β -glucans in **high-barley** and wheat poultry diets to minimize wet droppings and improve solid fat digestion.
2. Break down cell walls to increase energy utilization from high-barley and wheat poultry, pig, and aquaculture diets and accessibility of lipid-soluble ingredients.
3. Increase daily weight gain (DWG) and improve feed conversion ratio (FCR).
4. Include higher rates of viscosity reducing cereals and their by-products, thus reducing the total cost of the diet.
5. Reduce water intake, which improves litter quality and reduces dirty eggs.
6. Improves the microbial balance in the gut and reduces risk of contamination with pathogenic bacteria.

IV. PROCESSING CONDITIONS: GENERAL

The use of enzyme concentrate typically implies two separate steps:

1. Dilution of the concentrate by an enzyme distributor (formulator) at a rate of 1:10 - 1:20 to obtain a final feed enzyme product with proprietary product label. Other enzyme, vitamin, mineral, probiotic, medicinal and protein components can be mixed in on this stage.

2. Inclusion of the final enzyme product into the poultry and swine diet by the final consumer at the feed mill.

The concentrate is designed to be included into diluted enzyme products intended for the final consumers - specialized feed mills and poultry and swine growers mixing their own feed. The degree of dilution should be based on the capabilities of the final customer to accurately distribute the diluted enzyme product through the volume of feed. Typically the feed mills cannot mix in an amount less than 500 grams per ton of feed, which dictates the minimal dilution rate of 1:10 to prepare the end enzyme product starting from BP Concentrate. The recommended final dosage of the **Dyadic Beta Glucanase BP CONC ranges from 25 to 50 grams/ton of feed.**

The product can be diluted, as needed, to match the dosing capabilities of the customer, using barley, wheat, or rye flour.

When included into the final poultry and swine diets, the product can undergo the sterilization for several minutes by pelletizing the feed at the temperature not exceeding 80°C. But, it is most cost effective to add the enzyme after the steam treatment stage.

The enzyme is stable under acid stomach conditions and starts performing in the intestine. In analytical tests activity is displayed at temperature of 40 – 57° C and pH of 4.2 - 6.5.

V. STORAGE CONDITIONS/ACTIVITY:

Dyadic Beta Glucanase BP CONC has less than a 10% activity loss after 12 months when stored at 25°C (75°F - 77°F) out of direct sunlight and in the original, closed container (protect from humidity). **Dyadic Beta Glucanase BP CONC** also has less than a 10% activity loss after 6 months when stored at 43°C (110°F).

VI. INACTIVATION:

Dyadic Beta Glucanase BP CONC can be inactivated by raising the pH above 8.0 or the temperature above 90°C or a combination of the two.

VII. PACKAGING:

Dyadic Beta Glucanase BP CONC is packaged in 25 kg fiber drums.

VIII. TECHNICAL SERVICE:

Information covering specific applications for this product is available from your Dyadic International sales/technical representative. We will work with your technical personnel to resolve problems and optimize your process.

IX. SAFETY AND HANDLING:

For detailed information please refer to the **Dyadic Beta Glucanase BP CONC** MSDS available upon request.

Nothing disclosed is to be construed as a recommendation to use our products in violation of any patents. The information presented is believed to be accurate. However, said information and products are offered without warranty or guarantee, except as to the composition and purity stated herein since the ultimate conditions of use and variability of the materials treated is beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before adopting them on a commercial scale. The goods described herein are sold "as is" and "with all faults". The seller specifically disclaims all warranties in connection with the sale of the goods, both express and implied, including, without limitation, the warranties of merchantability and fitness for any particular purpose, as those terms are defined in the uniform commercial code of Florida. The seller shall not be liable for any incidental or consequential damages whatsoever.