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PRODUCT SPECIFICATIONS SHEET

COMBO® Enzyme Blend

Description: A water dispersible high power blend of seven specially selected digestive enzymes for animal feed capable of providing a number of important economic and health benefits in a concentrated and easy to use powder form.

Ingredients: Enzymes sourced from the following organisms - *Aspergillus oryzae*, *Aspergillus niger*, *Bacillus subtilis*, *Bacillus licheniformis*, *Bacillus amyloliquifaciens*, *Trichoderma longibrachiatum*, standardized on a maltodextrin carrier.

Analysis: Contains a minimum of the following enzymes:

Cellulase	75,000 CU /kg.	Xylanase	20,000 XU /kg.
Fungal Amylase	30,000 SKB /kg.	Beta Glucanase	20,000 BGU /kg.
Fungal Protease	100,000 HUT /kg.	Hemicellulase	20,000 HCU /kg.
Neutral Protease	1,000,000 PC /kg.	Lipase	75,000 FIP /kg.
Alkaline Protease	1.2 AU /kg.		

Unit Definitions:

Cellulase - One cellulase unit is defined as the amount of activity that will produce a relative fluidity change of 1 in 5 minutes in a defined carboxymethyl cellulose substrate under the conditions of the assay (pH4.5 and 40°C).

Fungal Amylase - One alpha-amylase dextrinizing unit (DU=SKB) is the quantity of α-amylase that will dextrinize soluble starch in the presence of an excess of beta-amylase at the rate of 1 gram per hour at 30°C.

Fungal Protease - One HUT unit of proteolytic (protease) activity is defined as that amount of enzyme that produces, in one minute under the specified conditions, a hydrolysate whose absorbance at 275nm is the same as that of a solution containing 1.10 g per mL of tyrosine in 0.006N hydrochloric acid.

Neutral Protease - One bacterial protease unit (PC) is defined as that quantity of enzyme that produces the equivalent of 1.5 mg per mL of l-tyrosine per minute under the conditions of the assay.

Alkaline Protease - One unit of alkaline protease is defined as that amount of enzyme needed to produce an absorbance at 660nm that corresponds to the absorbance of 1µg of tyrosine per minute under the conditions of the assay (pH 8.0 and 30°C).

Xylanase - One xylanase unit is defined as the amount of enzyme which liberates 1µmol of xylose per minute under the conditions of the assay (pH 5.3 and 50°C).

Beta Glucanase - One β-glucanase unit (BGU) is defined as that quantity of enzyme that will liberate reducing sugar (as glucose equivalence) at a rate of 1 µmol/minute under the conditions of the assay.

Hemicellulase - One hemicellulase unit (HCU) is defined as that activity that will produce a relative fluidity change of 1 over a period of 5 minutes in a locust bean gum substrate under the conditions specified.

Lipase - One unit of enzyme activity (FIP Unit) is defined as that quantity of a standard lipase preparation (Fungi Lipase-International FIP Standard) that liberates the equivalent of 1µmol of fatty acid per minute from the *Substrate Emulsion* under the described assay conditions.

Recommended Usage Rates: Designed to provide improved energy and amino acid digestibility of soybean meal, corn, wheat, barley, and fats. Poultry layers – 500 grams per metric ton of finished feed starting at first egg laying. Poultry broilers 500 grams per metric ton of finished feed starting at first solid feed.



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Storage Conditions: Store in a cool dry area in closed original container. Keep from freezing. Protect against physical damage. Keep away from heat and flame.

Danger: May cause allergy or asthma or breathing difficulties if inhaled. Avoid breathing dust/fume/gas/mist/vapors/spray. In case of inadequate ventilation, wear respiratory protection. Consult Safety Data Sheet before handling and storing this product.

Package Sizes: 25 kg. and 50 lb. boxes

This feed is produced in a facility certified in the AFIA's Safe Feed/Safe Food Certification Program www.safefeedsafefood.org



MADE IN USA