Rovabio® Advance P

Quality Standard

REF: 120 - 800PF320. V2 (13/05/2015)_GB

1. Description

Rovabio Advance P is a enzyme concentrated powder whose main enzymatic activities are xylanase and β-glucanase obtained from fermentation broths of Talaromyces versatilis* strains (formerly named Penicillium funiculosum). This product hydrolyzes pentosans and β-glucans in vegetable raw materials.

Effect:
• Improves the nutritional value of feeds containing different types of cereals (wheat, maize, barley, triticale, rye, oats…) and oilseed meals (soybean, sunflower, canola,…).
• Reduces gut viscosity.
• Reduces the free ammonia concentration in the litter.

* Talaromyces versatilis and Penicillium funiculosum are 2 different names for the same micro-organism. This change is linked to the evolution of the methods of micro-organism classification (taxonomy), in relation to the improvement of identification techniques.

2. Composition

Main active substances:
Endo-1,4-β-xylanase: NºEC 3.2.1.8.
Endo-1,3(4)-β-glucanase: NºEC 3.2.1.6.

3. Specifications

Appearance	powder
Color	from light to dark beige due to natural wheat flour color variations
Minimum activities	
Endo-1,4-β-xylanase	25 000 VU/g
Endo-1,3(4)-β-glucanase	17 200 VU/g
Bacteriological controls	
Yeast and molds	< 1 000 cfu/g
Salmonella	absent per 25 g
Total viable count	< 900 000 cfu/g
E. coli	< 10 cfu/g
Enterobacteria at 30ºC	< 100 cfu/g

Unit equivalency:
Xylanase 25 000 visco units = 2 600 DNS units
Beta-glucanase 17 200 visco units = 1 800 DNS units

1 viscosimetry unit (VU) of xylanase or β-glucanase is the amount of enzyme which hydrolyzes the substrate (wheat arabinoxylan or barley β-glucan, respectively), reducing the viscosity of the solution, to give a change in relative fluidity of 1 (dimensionless) unit/mn at 30ºC and pH 5.5.

1 DNS xylanase or β-glucanase unit is defined as the release of one µmole of xylose or glucose equivalent per minute from a substrate (birchwood xylan or barley β-glucan, respectively).

4. Duration of guarantee

12 months from the manufacturing date, in its original closed packaging kept in a cool dry place.

5. Physical and chemical properties

This data, which results from careful tests on representative samples, is provided for information purposes only and does not in any way constitute a guarantee.

Dried fermentation broth, free of active micro organisms, diluted on a wheat flour carrier.

Density	0.45 to 0.55
Endo-1,4-β-glucanase (cellulase)*	> 2 400 DNS units /g

**Additional voluntary control.*

6. Packaging

25 kgs cardboard boxes (500 kgs pallet); 500 kgs big bags (500 kgs pallet).

7. Use

. Animal feeding

. Regulation
▫ USA: reported in the AAFCO list of enzymes/source organisms acceptable for use in animal feeds.
▫ EU: Identification Nº: 4a22; authorized for chickens for fattening, chickens reared for laying and minor poultry species for fattening and reared for laying (Regulation N° 2015/661 of 28 April 2015).

. Dose in feed: 50g of Rovabio Advance P per ton of feed, giving:
•xylanase: 1 250 visco units/kg of feed (equivalent to 130 DNS units /kg)
•β-glucanase: 860 visco units /kg of feed (equivalent to 90 DNS units /kg)

This product must be diluted in a premix before incorporation in feeds.

8. Methods of analysis

■ Method for endo-1,4- β -xylanase activity:
Reference: T004
• The assay is based on the enzymatic hydrolysis of a standard wheat arabinoxylan solution, the activity being determined by the reduction in relative viscosity.
Reference: T006
• The assay is based on the enzymatic hydrolysis of a birchwood xylan (pH 4 and 50ºC) and reaction of the reducing group with 3,5-dinitrisalicylic acid (DNS), the activity being determined by measuring the reducing sugars by colorimetry at 540 nm.

■ Method for endo-1,3(4)- β -glucanase activity:
Reference: T008
• The assay is based on the enzymatic hydrolysis of a standard barley β-glucan solution, the activity being determined by the reduction in relative viscosity.
Reference: T007
• The assay is based on the enzymatic hydrolysis of a barley β-glucan solution (pH 5.0 and 50ºC) and reaction of the reducing group with 3,5-dinitrisalicylic acid (DNS), the activity being determined by measuring the reducing sugars by colorimetry at 540 nm.

■ Method for cellulase (endo-1,4- β -glucanase) activity:
Reference: T003
• The assay is based on the enzymatic hydrolysis of a carboxy-methyl-cellulose solution (pH 5.0 and 50ºC) and reaction of the reducing group with 3,5-dinitrisalicylic acid (DNS), the activity being determined by measuring the reducing sugars by colorimetry at 540 nm.

Assay methods available upon request.

9. Safety

Product MSDS (Material Safety Data Sheet) available on www.quickfds.com.

Handling of the product may cause allergic reactions by inhalation.
Use in the feed: once incorporated into the feed, the product offers all original guarantees of safety.
For safety: breathing protection, glasses and gloves shall be used during handling.

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