



EFFICIENT SOLUTIONS
TOTAL NUTRITION™



more **MILK** per grain



KEMZYME[®] ONE ADVANCE
Optimum Nutritional Efficiency for Pellet Feed

KEMIN[®]

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Feed - A Complex Matrix

Feed is a complex matrix of nutrients comprising of polysaccharides, starch, fats and proteins. It also consists of crude fiber. Crude fibre is the commonly used term which comprises of insoluble cellulose and lignin, often misrepresented as total fibre present in the diet. Whereas, the total fibre or dietary fibre varies about 18-30% irrespective of type of ingredients in the feed formulation.

Polysaccharides

Starch

ENERGY

Fats

Protein

AMINO ACIDS



Polysaccharides are a Source of Energy in Feed

Energy utilization from NSP varies from 65-85%

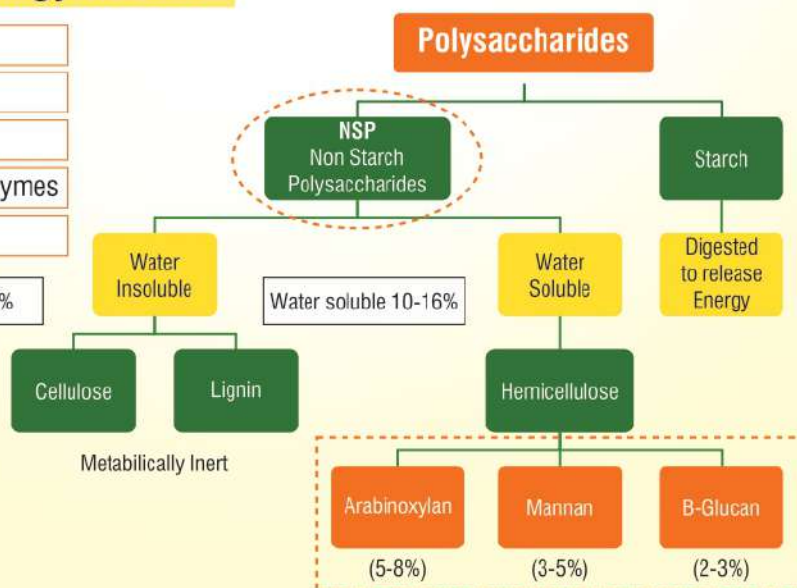
On an average 18-30% of energy locked as NSP

Ruminant Feed - 18-30% of NSP present

Ruminant Animal - Cannot produce NSP digesting enzymes

Ruminal Microflora - Produces NSP enzymes

Water Insoluble is 8-14%



Journal of Animal Nutrition and Physiology | Year-2015 | Volume 1 | Pages 17-22; feedase; feedpedia; Courtesy :N. E. Ward, Feedstuffs, Jan, 2014

Slight Change in Ruminal Microflora Balance May Lead to Undigested NSP, Resulting to Locked Energy

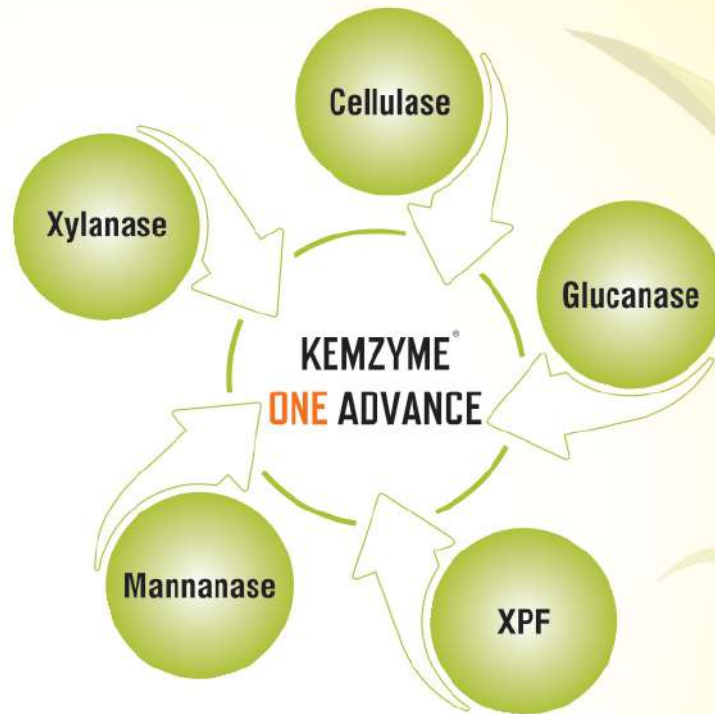
Feed Ingredients	NSP% on Dry Matter Basis	CF% on Dry Matter Basis
Maize	12-16	3
DORB	27-30	11-15
DDGS	25-30	8-12
Cotton Seed Cake	11-16	21-23
Mustard DOC	12-16	15-18
Cotton DOC	12-14	21-25
Mustard Cake	10-13	12-15
Wheat Bran	23-27	13-17
Soya DOC	22-24	6-8
Soya Full Fat	23-26	7-9
Rice Polish	24-28	12-15

On an average 18-30% of nutrients in the feed are unavailable to the ruminant animal which are locked in the NSP

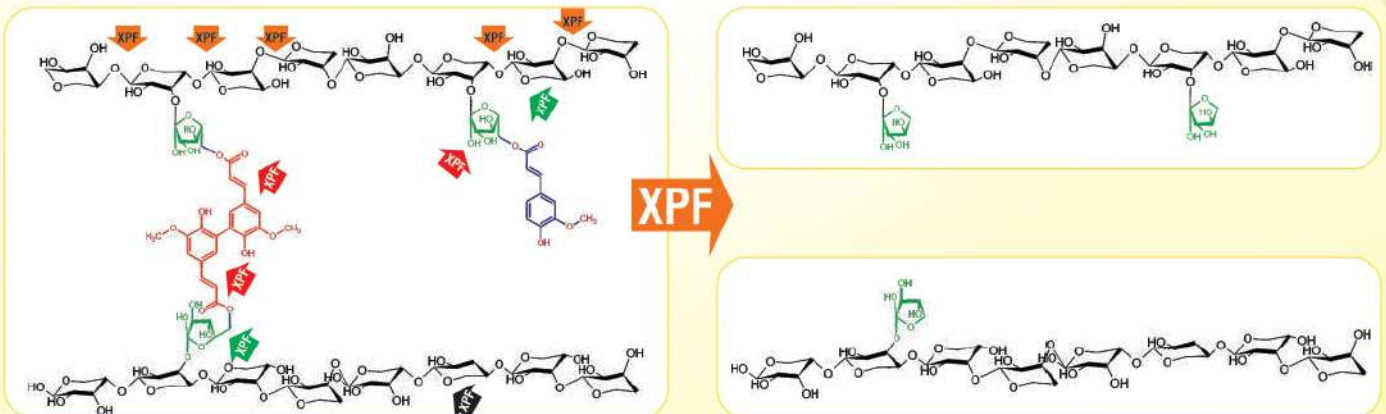
NSP levels vary according to the ingredients and formulation

KEMZYME[®] ONE ADVANCE

KEMZYME[®] ONE ADVANCE is a unique formulation of patented Xylanase Potentiating Factor (XPF) and Non Starch Polysaccharides (NSP) enzymes to harness the full energy from NSP of Pelleted cattle feed, which results in feed optimization and increased milk production

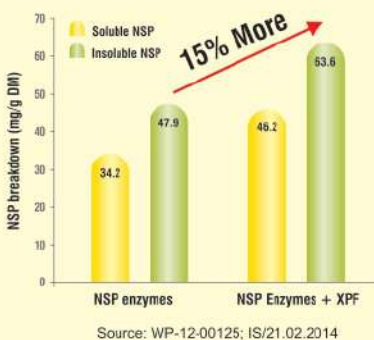


XPF in KEMZYME[®] ONE ADVANCE improves the access of enzymes like xylanase & other NSP enzymes

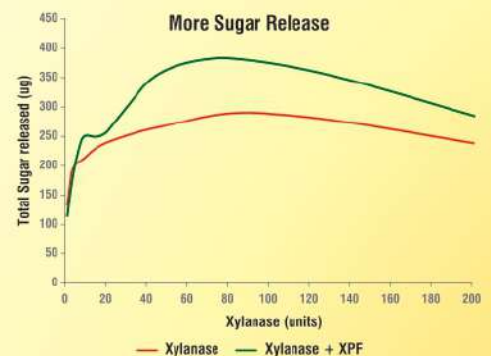


J. Agric. Food Chem. 2002, 50, 6485-6489; Appeldoorn et al., 2010, Agger and Meyer, 2012; Saulnier et al., 1995; Gruppen et al., 1993

XPF Synergism with Xylanase



- **XPF (Xylanase Potentiating Factor)** breaks the complex linkages of arabinoxylan to facilitate the action of xylanase.
- XPF has specific action on Arabinoxylan to increase the xylanase activity and NSP digestion in sustained manner
- XPF and NSP digesting enzymes further improve the digestion and nutrient utilization by the cattle



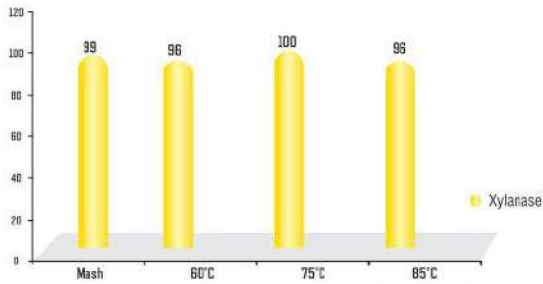
J. Agric. Food Chem. 2016, 64, 4932-4942

15% More NSP Breakdown by XPF Synergism with NSP Enzymes

KEMZYME[®] ONE ADVANCE

Optimum Nutritional Efficiency for Pellet Feed

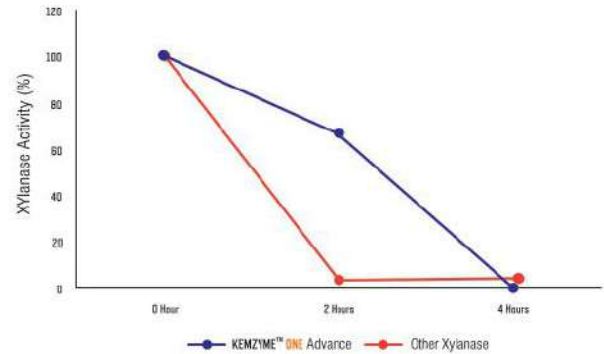
Recovery of enzymes from mash and pelleted feed samples



*The Xylanase of KEMZYME ONE ADVANCE

KEMZYME[™] ONE ADVANCE, showed good pelleting stability with more than 95% of the initial activity recovered after 85°C pelleting conditions.

Ref: WP-16-00133



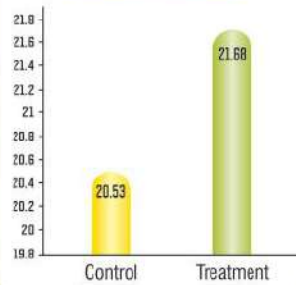
The enzymes of KEMZYME[™] ONE ADVANCE* showed more than 50% activity beyond 2 hrs in the rumen.

Ref: WP-18-300

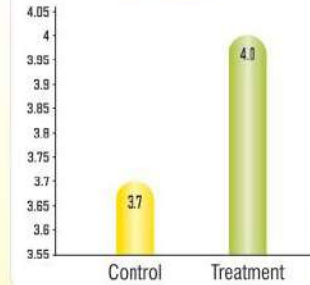
Results and Discussions

- 22 days trial comprising of 2 groups with 8 animals each fed with 5g per animal per day of KEMZYME[®] ONE ADVANCE to the treatment group.
- All the animals were in early lactation stage
- There was no significant difference in the DMI
- All animals were fed the same diet
- ROI found to be not less than 1:5

Milk Yield in Litres



Milk Fat%



Ref: TD-19-5417

Benefits

- KEMZYME[®] ONE ADVANCE helps in profitability enhancement for feed millers by giving flexibility to choose the raw materials.
- KEMZYME[®] ONE ADVANCE helps in performance enhancement in cattle by unlocking the trapped energy in NSP

Inclusion: 500gm to 1 kg per metric ton of feed
5gm to 10gm per animal per day

Features

- KEMZYME[®] ONE ADVANCE contains unique patented XPF molecule which enhances the action of NSP enzymes for better digestion and utilization of nutrients
- KEMZYME[®] ONE ADVANCE is available in dry form which is easy to handle and mixable with feed

Availability: 25 kg bags

KEMIN

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FAMIQS
European Feed Additive and Performance Quality System

CERTIFIED
ISO 22000

CERTIFIED
FSSC 22000

GFSI
Global Food
Sourcing Initiative

FSSC 22000

ISO 9001:2015
BUREAU VERITAS
Certification

Great Place
To
Work
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