



# FENCER ENZ



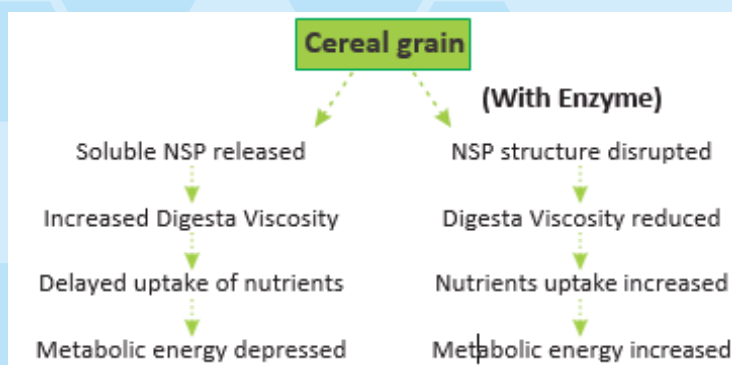
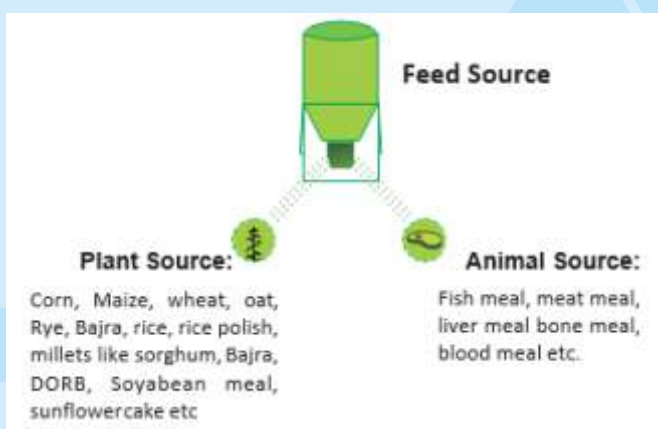
## An Optimized and Tested Blend of Enzymes

Animal feed is composed of plant material, cereals and vegetable proteins, which cannot be fully digested and utilized by animals. However, feed utilization and digestion can often be increased by the addition of external enzymes to the feed.

Many cereals have a proportion of their energy in the form of non-starch polysaccharide (NSPs), commonly known as Fibre which needs to be broken down resulting in increase of metabolizable energy and protein utilization. Some Cereals, contain NSP which are soluble and cause high viscosity in the small intestine of a monogastric animal due to which the digestion becomes impaired.

The selected microbial enzymes potentially degrade such NSPs, lower intestinal viscosity improve feed utilization

Fencer ENZ is a very unique blend of SSF enzymes which takes care of various problems arising from the presence of NSPs, Galactosides, Phytates and other anti-nutritional factors like lecithin, Tannins, Trypsin inhibitors present in the feed stuff.



The poultry feed contains many plant and animal origin ingredients. The animal residues are easily digested but plant origin are not digested due to inherent contents due to lack of endogenous enzymes in the digestive tract of Poultry.

**These undigestible plant residues may be called as:**

- 1. NSPs:** The term NSP covers a large class of polysaccharides excluding starch.
- 2. Galactosides:** These are short chain carbohydrates usually found in legumes like soybean. Galactose being the main subunit is cross linked to raffinose, stachyose and verbascose.
- 3. Phytates:** Any Poultry feed generally contains phosphorus in organic form as phytate phosphorus & non- phytate phosphorus. The non-phytate phosphorus is easily available and well digested by the chicken. However it is found that phytate phosphorus is not available due to negligible amounts of phytase enzyme in the intestine of the bird not sufficient to hydrolyse the phytate bond. Due to this most of the organic phosphorus is passed undigested through Faeces causing environmental pollution.
- 4. Anti nutritional factors (ANFs):** Lectins, tannins, trypsin inhibitors etc. This class includes chemically varied type of residues which usually occur in very low concentrations.

**NSP Content in Some Cereal Grain**

S.No.	Feed Ingredients	Total NSP (g/kg)
1.	Sun Flower Cake	367
2.	DORB	271
3.	Soya Meal	234
4.	GNC	167
5.	Maize	124
6.	Jowar	99
7.	Wheat	94
8.	Rice Polish	87
9.	Bajra	80



## Anti-Nutritional Effects of undigested residue & Applications of Enzymes in Fencer ENZ

### 1. Soluble NSPs

- Increases gut viscosity there by reducing digestion of feed.
- Modify gut physiology to reduce internal secretion of water, proteins, electrolytes & lipids.
- Bind bile salts, lipids & cholesterol there by changing digestive & absorptive dynamics of the gut
- Increases retention time of digesta in the intestine thus decreasing oxygen tension to favor growth of anaerobic toxigenic micro flora causing deconjugation of bile.

All these interactions results in:

Poor feed conversion | Loose droppings | Chronic deficiencies and other health related problems in poultry.

**2. Galactosides:** Interfere with the gut physiology leading to flatulence and poor assimilation of nutrients

**3. Phytates:** Chelate minerals like Ca, Fe, Mg, starch, amino acids etc. making them biologically unavailable hence there is an extra supplementation of inorganic phosphorous in feed to maintain mineral levels which again increases the feed cost.

### 4. Other Anti Nutritional Factors:

- Hampers digestion by interfering with endogenous enzyme present in the digestive track
- Inhibit action of trypsin, tannins, lectins etc

### Benefits & Advantages of Fencer ENZ

- Optimizes the use of conventional and non conventional feed ingredients
- Improves FCR & increases weight gain in broilers & number of eggs in layers.
- Reduces wet droppings, odor and improves litter quality (Less microbial contamination) leading to cleaner eggs
- Improves absorption efficiency of antibiotics, methionine & lysine etc

### Application of Enzymes in Fencer ENZ

- **$\alpha$ -Amylase:** Hydrolyzes  $\alpha$ -1, 4-glycosidic bonds from starchy material liberating metabolizable sugar
- **Xylanase:** Hydrolyzes arabinoxylans in simple sugar.
- **Cellulase:** Hydrolyzes  $\beta$ -1, 4-glycosidic bonds randomly from cellulosic fraction of Soya, maize, SFC, DORB etc. to release easily metabolizable glucose.
- **Pectinase:** Hydrolyzes pectic acid randomly from SFC, DORB to release metabolizable galacturonate sugars.
- **Phytase:** Hydrolyzes phytic acid to myo-inositol & phosphoric acid to reduce antinutritional effect and release bioavailable phosphorus, amino acids & minerals.
- **Protease:** Acts on proteins to liberate peptides & amino acids.
- **Lipase:** Breakdown of vegetable & animal fats to free fatty acids, triglycerides & glycerol to give ME.
- **Hemicellulase:** Acts on  $\beta$ -1, 4 linked xylanopyranosyl residues of arabinoxylans & mannans releasing pentose sugars & metabolizable hexose sugars from SFC, wheat, DORB, causing reduction in internal digesta viscosity.
- **$\beta$ -Galactosidase:** Hydrolyzes galacto-oligosaccharides from Soya like raffinose & stachyose into sucrose & galactose to reduce antinutritional effect and release metabolizable sugars.
- **Glucanase:** Decreases the viscosity of beta glucans in high barley and wheat diets to release metabolizable sugars.

**Recommended Usage Levels:** 250 gm per metric ton of feed or as recommended by a nutritionist

**Presentation:** 25 Kg Paper bag with outer lining

## Catalyst LifeSciences Pvt. Ltd.

An ISO 9001:2015, ISO 14001:2015, HACCP Certified Company

Corporate Office: # 5, 301, 3rd Floor, Greenwood Plaza, Sector 45, Gurugram - 122003, Haryana

Customer care #: +91 892 988 1235; Email: support@catalystlifesciences.in | support@acecatalyst.in

For more information please visit: [www.catalystlifesciences.in](http://www.catalystlifesciences.in)



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