Culturing Excellence
in Animal Nutrition

AO

Aspergillus OryzaeFermentation Extract

Aspergillus Oryzae (AO) fermentation extracts were tested to gauge potency retention at elevated temperatures. Xylanase is the principal fiber digesting enzyme produced by AO, and its stability in temperature extremes is important to preserve all of the fiber-digesting capabilities of the AO.

Samples of two AO products were heated in a drying oven until reaching 180º F. The oven maintained constant temperature for 6 minutes and then cooled to room temperature.

The samples were Amaferm®* and Nature's Mill AO. The microscopic photos show differences in their basic makeup. Both products start as a liquid extract of AO fermentation. About 25% Amaferm® is dried on 75% wheat bran carrier. Nature's Mill AO is a richer extract comprising 100% fermentation solubles with no bran carrier.

Amaferm®

Nature's Mill AO

These differences can also be seen by rinsing samples through a filter with water. Rinsing Amaferm® dissolves the 25% extract, leaving the 75% bran carrier on the filter. Because Nature's Mill is pure dehydrated fermentation extract, it completely dissolves and passes through the filter.

As expected, the initial Xylanase activity of the Nature's Mill AO was richer. However the percent degradation of the active Xylanase fraction was similar. The decay for both samples was low and below the analytical variation of the assay which is plus or minus 5%.

	Amaferm®	Nature's Mill
Initial Xylanase, IU/g	16,894	188,766
Heat-induced losses	389 (-2.3%)	8,306 (-4.4%)
Final Xylanase, IU/g	16,505	180,460

The minimal percent decay shows there is an appreciable element of stability in the Xylanase from both products. The advantage to Nature's Mill AO is its sheer potency, which is a function of greater purity.

*Amaferm® is a registered trademark of Biozyme Inc. St. Joseph, Mo.