VEGETARIAN ENZYMES vs ANIMAL ENZYMES

Many digestive and systemic enzyme supplements on the market today contain enzymes derived from animal sources. Examples of these animal enzymes include pepsin, pancreatin, trypsin and chymotrypsin. However, dietary supplements containing enzymes obtained from non-animal, vegetarian sources have become increasingly more popular. These vegetarian enzymes are derived from either plant or microbial sources. The two plant-derived enzymes most frequently used are bromelain and papain extracted from pineapple and papaya, respectively. The microbial enzyme category contains several highly-purified enzymes concentrated from non-genetically modified microorganisms, primarily *Aspergillus oryzae/niger*, with a long history of safe and effective use.

Vegetarian enzymes from microbial sources have several major advantages over animal enzymes and, in some cases, even plant enzymes.

Vegetarian enzymes can be concentrated more than animal enzymes, so more activity can be included in each capsule or tablet. In general, this means vegetarian enzymes require fewer capsules or tablets than animal enzymes to provide equivalent enzymatic activity.

Vegetarian enzymes from microbial sources provide a broader spectrum of digestive activity working on all of the main food components (protein, carbohydrates, fat and fiber) for more complete digestion. Animal enzymes focus primarily on digesting protein with minimal (pancreatin) or no (pepsin, trypsin and chymotrypsin) starch and fat-digesting capabilities. Plant enzymes are also limited to protein digestion, offering no assistance with carbohydrate, fat and fiber digestion.

Vegetarian enzymes, in the right combination, are active over a broad pH range (pH 2.0 to 10.0) so they are capable of working throughout the entire digestive tract. Animal enzymes are active in narrow pH ranges.

Vegetarian enzymes are stable in the acidic environment of the stomach, whereas, pancreatin, trypsin and chymotrypsin can be destroyed in the acid conditions of the stomach before ever reaching the small intestine. For this reason, manufacturers of products containing these animal enzymes will often enteric-coat either the enzymes themselves or the entire tablet with synthetic polymers that don't dissolve in the digestive tract.

Vegetarian enzymes from microbial sources are cultivated in a controlled environment, free of contaminants including pesticides like those used on pineapples and papaya. Animal enzymes are commercially obtained from slaughterhouse pigs or cows, which have received steroids, antibiotics, etc. and have been fed pesticide-containing, genetically-altered feed.

Considering the many advantages of microbial enzymes over animal enzymes and even plant enzymes, a dietary supplement providing these vegetarian enzymes is the best choice.

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