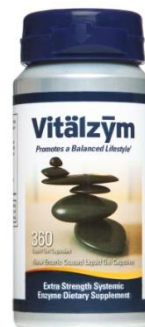


# Are You Choosing the Right Enzyme?

## Explore the Enzyme Market



### *3 Types of Oral Delivery Systems & What They Mean for Enzyme Activity*

#### **1. Powder Filled Capsule**



Powder filled capsule technology is suitable for contents that are not susceptible to the acidity of the stomach. The capsule and its enzymes are dissolved prematurely in the stomach, resulting in up to 100% destruction of the enzymes within 30 minutes in the extremely low pH environment.



#### **2. Enteric Coated Tablet**



Enteric-coated tablets are able to withstand stomach acids, however, they must be introduced into a high pH environment for extended periods before dissolving. Since individual pH levels vary, the tablet may dissolve very late in the small intestine or bypass it completely. Many users also complain of the synthetic coating.



#### **3. Enteric Coated Liquid Gel Capsule**



The all-natural protective coating prevents the enzymes from being destroyed by the stomach acids. The pancreatic juices break down the coating in the duodenum. This makes 100% of the enzyme contents available for absorption into the bloodstream.



The world's #1 vegetarian liquid-gel systemic enzyme formula.

# Vitalzym

Total System Support

- Vegetarian Liquid Filled Formula
- Enteric Coated Soft Gel Technology
- No Activity Loss
- Higher Potency & Purity
- Optimal Disbursement of Enzyme Activity
- Great Consumer Compliance
- Minimal Dosage Required for Maximum Benefit



Breakfast Lunch Dinner

Capsules/Day: 12  
Ave. Cost/Day: \$5.80

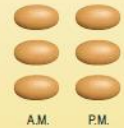
**POWDER FILLED CAPSULES CAN RESULT IN PREMATURE ACTIVITY LOSS.**



Breakfast Lunch Dinner

Tablets/Day: 30  
Ave. Cost/Day: \$4.50

**TABLETS CAN STAY FULLY INTACT THROUGH THE DUODENUM WHICH RESULTS IN VIRTUALLY NO ABSORPTION.**



A.M. P.M.

Soft gels/Day: 6  
Ave. Cost/Day: \$2.75

**VITALZYM LIQUID GEL CAPSULES**

- NO ACTIVITY LOSS
- NEARLY 100% ABSORPTION
- PROPER DISINTEGRATION



# *Enzyme Manufacturers in the Market*

## **World Nutrition, Inc. Vitalzym & VitalzymXe**

### **1. Delivery System: Enteric Coated Liquid Gel Capsule**

- A. No activity loss in acidic regions of the stomach.
  - 1) Less capsules to take.
  - 2) Better compliance.
- B. 100% of enzyme activity available for complete absorption into the bloodstream.
  - 1) Faster results.
  - 2) Less cost/day with more benefits.

### **2. Vegetarian Based**

- A. Key ingredient: Serrapeptase
  - 1) Consistent quality of enzyme everytime.
  - 2) Research shows Serrapeptase to be 17 times stronger than Trypsin and Chymotrypsin.
- B. Opens up the options to enzyme users who do not want bovine derived enzymes.

### **3. Liquid Filled**

- A. Liquid enzyme blends provide a more uniform dose consistency because the mixing of liquids allows for optimal particle distribution. In powder formulations, each particle of a different enzyme is different in size, causing greater friction between particles during mixing. Excipients are introduced to powder formulations to increase the mixability, but liquids still provide far more even distribution of ingredients, allowing for more consistent dosages in each capsule.\*
- B. Enzymes always retain some amount of moisture when they are produced. Enzymes, as proteins, are more susceptible to denaturation at higher moisture. Enzyme powders typically have lower (5-10%) moisture. However, even with lower moisture, enzyme powders will lose some of their activity over time, resulting in a loss of up to 20% of activity over a 12-month period. Vitalzym contains enzymes with a higher degree of purity and less moisture that, when combined with Medium-Chain Triglycerides (MCT), then decompressed during the manufacturing process, removes the moisture completely. As a result, loss of enzyme activity over time due to moisture will not occur after Vitalzym is produced. Vitalzym is manufactured to have a 5-year shelf life with no loss of activity when properly stored in a cool, dry place

### **4. Available Capsule Count**

- A. Retail Vitalzym 180 & 360 Count Bottles
- B. Pharmaceutical Grade VitalzymXe 180 Count Box (18 blister packs of 10 liquid gel capsules)

# Garden of Life

## Wobenzym

### 1. Delivery System: Enteric Coated Tablet

**(We agree that Enteric Coating is Important!)**

- A. Must be introduced into a high pH environment for extended periods before dissolving.
  - 1) Tablets may dissolve very late in the small intestine.
  - 2) Tablets may bypass the small intestine completely.
  - 3) High dosage required to experience benefits.
- B. Contains a synthetic coating.
  - 1) Reports of adverse reactions to coating.

### 2. Animal-Derived Enzyme Blend

- A. Key ingredients: Trypsin & Chymotrypsin
  - 1) Bovine or Animal Derived enzymes come from a different source each time.
  - 2) Research shows Serrapeptase to be 17 times stronger than Trypsin and Chymotrypsin.

### 3. Tablet

- A. In tablet formulations, each particle of a different enzyme is different in size, causing greater friction between particles during mixing.
- B. Enzymes always retain some amount of moisture when they are produced. Enzymes, as proteins, are more susceptible to denaturation at higher moisture. The disadvantage of these blends is the amount of heat created with compressing the ingredients into a tablet. Enzymes are susceptible to high temperatures and may begin to degrade during the manufacturing process.

### 4. Available Tablet Count

- A. 100, 200, 400, 800 Count Bottles

# **AST Enzymes**

## **Exclyzme**

### **1. Delivery System: Powder Filled Capsule**

- A. Powder filled capsule technology is suitable for contents that are not susceptible to the acidity of the stomach.
  - 1) Capsule and enzymes are dissolved prematurely in the stomach.
  - 2) Up to 100% destruction of the enzymes within 30 minutes in the extremely low pH environment.
  - 3) High dosage required to experience benefits.
  - 4) Not fully enteric coated, buffer style around Serrapeptase.

### **2. Vegetarian Based**

- A. Key ingredient: Serrapeptase
  - 5) Consistent quality of enzyme everytime.
  - 6) Research shows Serrapeptase to be 17 times stronger than Trypsin and Chymotrypsin.
- B. Opens up the options to enzyme users who do not want bovine derived enzymes.

### **3. Powder Filled**

- A. Enzyme powders typically have lower (5-10%) moisture. However, even with lower moisture, enzyme powders will lose some of their activity over time, resulting in a loss of up to 20% of activity over a 12-month period.
- B. In powder formulations, each particle of a different enzyme is different in size, causing greater friction between particles during mixing. Excipients are introduced to powder formulations to increase the mixability, but liquids still provide far more even distribution of ingredients, allowing for more consistent dosages in each capsule.\*

### **4. Available Capsule Count**

- A. 450 Count Bottle

# Arthur Andrew

## Neprinol

### 1. Delivery System: Powder Filled Capsule (Not Enteric Coated)

A. Powder filled capsule technology is suitable for contents that are not susceptible to the acidity of the stomach.

- 1.) Capsule and enzymes are dissolved prematurely in the stomach.
- 2.) Up to 100% destruction of the enzymes within 30 minutes in the extremely low pH environment.
- 3.) High dosage required to experience benefits.

### 2. Vegetarian Based

A. Key ingredients: Serrapeptase & Nattokinase

B. Opens up the options to enzyme users who do not want bovine derived enzymes.

### 3. Powder Filled

A. Enzyme powders typically have lower (5-10%) moisture. However, even with lower moisture, enzyme powders will lose some of their activity over time, resulting in a loss of up to 20% of activity over a 12-month period.

B. In powder formulations, each particle of a different enzyme is different in size, causing greater friction between particles during mixing. Excipients are introduced to powder formulations to increase the mixability, but liquids still provide far more even distribution of ingredients, allowing for more consistent dosages in each capsule.\*

### 4. Available Capsule Count

A. 300 Count Bottles

# **Dr. Wong's Essentials**

## **Zymessence**

- 1. Delivery System:** Tablet (Shaped like a capsule – Caplet) with Enteric Matrix Technology
- A. Must be introduced into a high pH environment for extended periods before dissolving.
    - 1.) Tablets may dissolve very late in the small intestine.
    - 2.) Tablets may bypass the small intestine completely.
    - 3.) High dosage required to experience benefits.
  - B. Contains a synthetic coating.
    - 1.) Reports of adverse reactions to coating.

### **2. Plant & Animal-Derived Enzyme Blend**

- A. Key ingredients: Serrapeptase, Trypsin and Chymotrypsin
- B. Bovine or Animal Derived enzymes come from a different source each time.
- C. Research shows Serrapeptase to be 17 times stronger than Trypsin and Chymotrypsin.

### **3. Tablet**

- A. In tablet formulations, each particle of a different enzyme is different in size, causing greater friction between particles during mixing.
- B. Enzymes always retain some amount of moisture when they are produced. Enzymes, as proteins, are more susceptible to denaturation at higher moisture. The disadvantage of these blends is the amount of heat created with compressing the ingredients into a tablet. Enzymes are susceptible to high temperatures and may begin to degrade during the manufacturing process.

### **4. Available Capsule Count**

- A. 180 Count Bottle