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# VITAZYME

## A BIOSTIMULANT BASED ON HARD SCIENCE

Vitazyme has produced excellent yield responses for all crops in a variety of soil and climatic conditions since first marketed in the early 1990s. Though its effects were well recognized at very low application levels, the active agents were at first not known. As efforts to isolate these active agents have continued, several well-recognized compounds have been discovered in the product and are described below.

**Brassinosteroids.** Called “a growth regulator of the 21st Century”, four of them have been isolated from Vitazyme. They are homobrassinolide, dolicholide, homodolicholide, and brassinone. All are effective at extremely low concentrations. They occur in Vitazyme at about 0.03 mg/ml. At the standard 1 liter/ha (13 oz/acre) application rate, 30 mg/ha are applied, which is well within the accepted active range of 20 to 50 mg/ha. (See V. A. Khripach, V. N. Zhabinskii, and A. E. de Groot, 1999, *Brassinosteroids, a New Class of Plant Hormone*, Academic Press, San Diego, California.) Effects on plants include:

- Greater seed germination
- Increased crop yield
- Improved flowering
- Enhanced stress tolerance (temperature extremes, salinity, drought, and pesticides)
- Increased leaf chlorophyll and photosynthesis

**Triacontanol.** This well-researched compound is found in relative abundance in Vitazyme, at about 0.17 mg/ml. It can

activate plant growth when applied at extremely low concentrations, less than 1 mg/ha. (See S. K. Ries, 1985, Regulation of plant growth with triacontanol, *CRC Critical Reviews in Plant Sciences*, Volume 2, Issue 1, CRC Press, Inc., Boca Raton, Florida.) Effects on plants include:

- Improved seedling growth
- Increased chlorophyll and photosynthesis
- Enhanced dry matter accumulation
- Increased crop yield

**Glycosides.** A major glycoside has been discovered in Vitazyme which has been shown in greenhouse studies by Vital Earth Resources to consistently increase dry matter yields of crops when applied at very low levels.

**B Vitamins.** Vitazyme contains about 0.45 mg/100 g of Vitamin B1 (thiamin), 0.03 mg/100 g of Vitamin B2 (riboflavin), and 0.19 mg/100 g of Vitamin B6 (pyridoxine). All of these stimulate plant growth and development, which lead to higher yields.

Research is continuing to uncover other active agents in Vitazyme, agents which may play a role in the growth responses that are noted. For research results on the product, contact **Vital Grow Distribution at 509-630-7400 or online at [www.vitalgrowdistribution.com](http://www.vitalgrowdistribution.com)**. There you will find hundreds of studies that verify the efficacy of this product across the world.

