

## Enzyme therapy and probiotics

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### **Ideal Enzyme**

- Omnivorous vs. Carnivorous Digestion

### **Avizyme**

- Omnivorous digestion
- Safe
- Tested in poultry, cattle, swine, dogs, cats
- Improves feed efficiency
- Improves palatability
- Immune enhancement

### **Enzyme Literature**

- Enzyme macromolecules actually pass intact from the gut into the bloodstream
- Gardner, gastrointestinal absorption of intact proteins, Ann. Rev. Nutr.,1988.
- Gardner, intestinal assimilation of intact peptides and proteins from the diet - A neglected field?, Biol. Rev.,1984.
- Warshaw, Protein uptake by the intestine: Evidence for absorption of intact macromolecules, Gastroenterology,1974.
- Udall, Walker, The physiologic and pathologic basis for the transport of macromolecule's across the intestinal tract, J. Pediatr.. Gastroenterology & Nutr., 1982.
- Loehry, Permeability of the small intestine to substances of different molecular weight. Gut, 1970.
- Hemmings, Williams, Transport of large breakdown products of dietary protein through the gut wall. Gut, 1978.
- Menzies, Transmucosal passage of inert molecules in health and disease, In Intestinal Absorption and Secretion, E. Skadhauge and K Heintze, eds., MTP Press, Lancaster, 1984.

### **Enzyme Literature**

- Oral enzymes are safe and effective alternatives to NSAIDs in osteoarthritis. Reutershealth.com, Feb. 9,2000m

**Avizyme**

- *Saccharomyces cerevisiae* dried yeast culture that is heat stable

**Avizyme Indications**

- Neonates
- Day 1 routine
- Crop problems
- Stunting
- Poor Digestion
- Hepatopathy
- Hepatopathy
- Inflammation
- Allergies
- Tissue Injury
- Abnormal Feathers
- Rhinitis/Sinusitis
- Inflammation/Allergy/Malabsorption
- Geriatric Birds
- Polyuria
- Hypercholesterolemia
- Soft shelled Eggs
- Ulcers      Dermatopathy

**Avizyme**

- Used for four years at The Bird Hospital without contraindication

**Avizyme**

- “When things could be better!”

## **Probiotics**

### **Lactobacillus**

- Benebac.
- Probiocin (Pioneer) AMPA p465,1994 removed from 2000 HBD edition.
- Parrot lactobacillus (Gerlach, Munich).
- Acetic acid (organic apple cider vinegar, non-pasteurized, non-filtered).

### **Apple Cider Vinegar**

- For use in birds that are asymptomatic, but have low, high or abnormal fecal Gram's stain.
- Most are also malnourished so need diet changed.
- Must be added to a water that supports life. USA = drinking water.
- Sig: 15 ml/ quart (960 ml).
- Use a minimum of 10 days.
- Periodic use: monthly, semiannual.
- Follow up fecal Gram's stain.

### **Parrot Lactobacillus**

- Loro Parque
  - Use in every baby and sick bird, has basically eliminated Enterobacteriaceae from the collection.
- Friedrich Janeczek
  - Use in babies on HBD from Philippines to Germany for 6 years, no losses.

