Study Objective

Determine dietary zinc requirement of channel catfish using both zinc sulfate and ZINPRO® zinc methionine, while comparing bioavailability of both mineral sources, using either a purified or practical diet.

Animals

2700 newly-hatched channel catfish, *Ictalurus punctatus*, sourced from a single egg mass; Fed five weeks prior to start of study.

Treatments

**Purified Diet**
(10 treatments; egg-white-based)
- Supplemented with 0, 5, 10, 15, or 30 ppm zinc from zinc sulfate (ZnSO₄) or ZINPRO

**Practical Diet**
(8 treatments; soybean-meal-based)
- Supplemented with 0, 5, 10, 20, or 80 ppm ZnSO₄ or ZINPRO

Study Duration

Fish were fed purified diet for two weeks prior to start of study and experimental diets for 10 weeks.

Location

Auburn University, Auburn, AL

Results Summary

Feeding supplementary zinc to channel catfish showed:
- Dietary Zn requirement varied with Zn source
- ZINPRO was approximately 3x more bioavailable than ZnSO₄ when a purified diet was fed
- Zn bioavailability was 4 to 5x higher for ZINPRO when a practical diet (soybean-meal-based) was fed

Feeding ZINPRO® in an aqua diet provides a highly bioavailable mineral, at a lower requirement level, allowing for improved weight gain.

**Weight Gain Response**

![Weight Gain Response Graphs](image)

**Dietary Zinc Requirement for Weight Gain and Relative Bioavailability**

![Dietary Zinc Requirement Graph](image)

- Breakpoint in regression line (quadratic response \( P < 0.01 \)) considered to be the minimum dietary concentration for optimum response
- Relative bioavailability calculation: Ratio of the slope of zinc methionine regression line to the slope of zinc sulfate regression line \( \times 100 \)

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