

## Availa®Cu Improves Growth Performance, Intestinal Health, and ROI in Pacific White Shrimp, *Litopenaeus vannamei*



### Study Objective

Evaluate use of dietary copper sources in Pacific white shrimp, *Litopenaeus vannamei*



### Animals

360 juvenile Pacific white shrimp, *Litopenaeus vannamei*, of approximately 1.86 initial weight, stocked at 30 shrimp/tank

### Treatments

Four supplemental Cu diets:

- Control, no supplemental Cu
- CuSO<sub>4</sub>, 30 ppm Cu
- CuSO<sub>4</sub>/AvCu, 15 ppm Cu each from copper sulfate and Availa®Cu
- AvCu, 15 ppm Cu from Availa-Cu



### Study Duration

2-week acclimation period to experimental conditions and commercial diet;  
8-week feeding study



### Location

Ningbo University,  
Ningbo, China

All trademarks herein are property of Zinpro Corp.  
©2020 Zinpro Corp. All rights reserved.

IS-A-003



### Results Summary

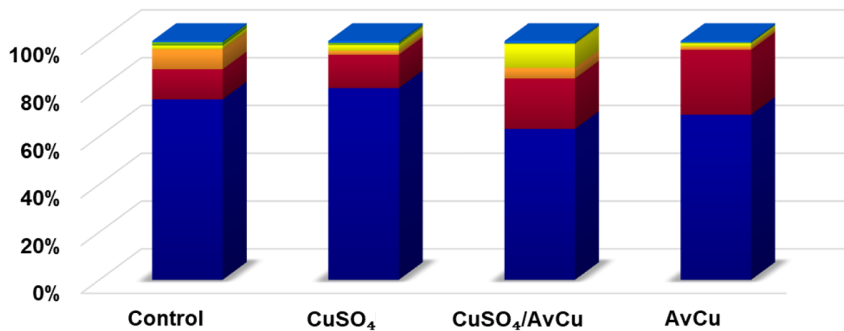
Partial or complete replacement of CuSO<sub>4</sub> with Availa-Cu at a half-rate of supplementation:

- Improved growth performance
- Decreased intestinal distribution of *Vibrionaceae* and *Mycoplasmataceae* bacteria

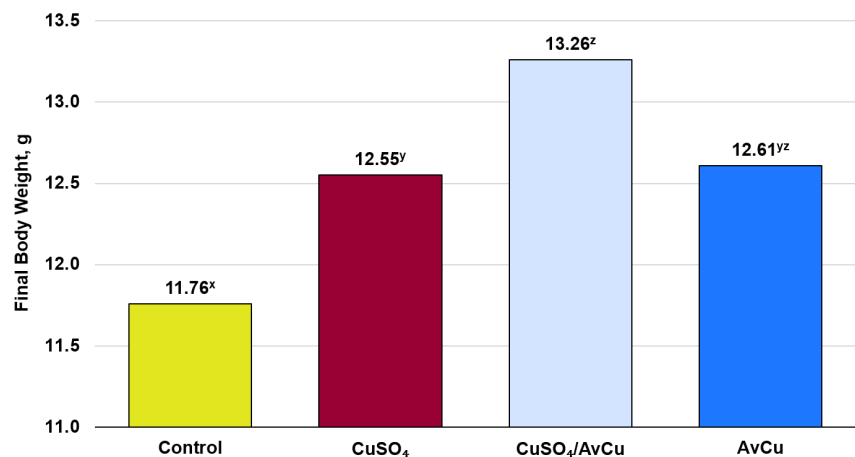
ROI was 9.6% greater when shrimp consumed CuSO<sub>4</sub>/AvCu compared to no supplemental Cu

### Distribution of Intestinal Bacteria by Phyla

■ Proteobacteria ■ Bacteroidetes ■ Tenericutes ■ Fusobacteria ■ CKC4 ■ Other bacteria



### Final Body Weight



[DOWNLOAD ABSTRACT/FULL PAPER](#)

Yuan, Y., M. Jin, J. Luo, J. Xiong, T. L. Ward, F. Ji, G. Xu, M. Sun, and Q. Zhou. 2019. Effects of different dietary copper sources on the growth and intestinal microbial communities of Pacific white shrimp (*Litopenaeus vannamei*). *Aquac. Nutr.* 00:1-13.