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Effects of chromium supplementation on finishing pigs under thermoneutral or heat stress conditions[1,2]

A research trial, conducted at Iowa State University, determined the effect of chromium supplementation during the finishing phase of pigs experiencing thermoneutral or heat stressed conditions. Pigs (n=96) were fed dietary treatments that were either the control diet (no chromium) or 200 ppb chromium from chromium propionate. In addition to being fed different diets, the pigs were assigned to thermoneutral conditions (70.3 °F) or progressive cyclical heat stress conditions (80.6-87.8 °F).

Research has shown that pigs kept in the thermoneutral zone have optimal performance in growth parameters[3]. Results from this study revealed benefits from supplementing chromium during thermoneutral conditions. Figure 1 shows chromium had an impact on feed intake, final body weight, average daily gain, and feed efficiency in thermoneutral pigs. Final body weights were increased by 5.07 lbs when supplemented with chromium[1,2]. Chromium supplementation is beneficial in thermoneutral temperatures in which pigs already have optimal growth performance.

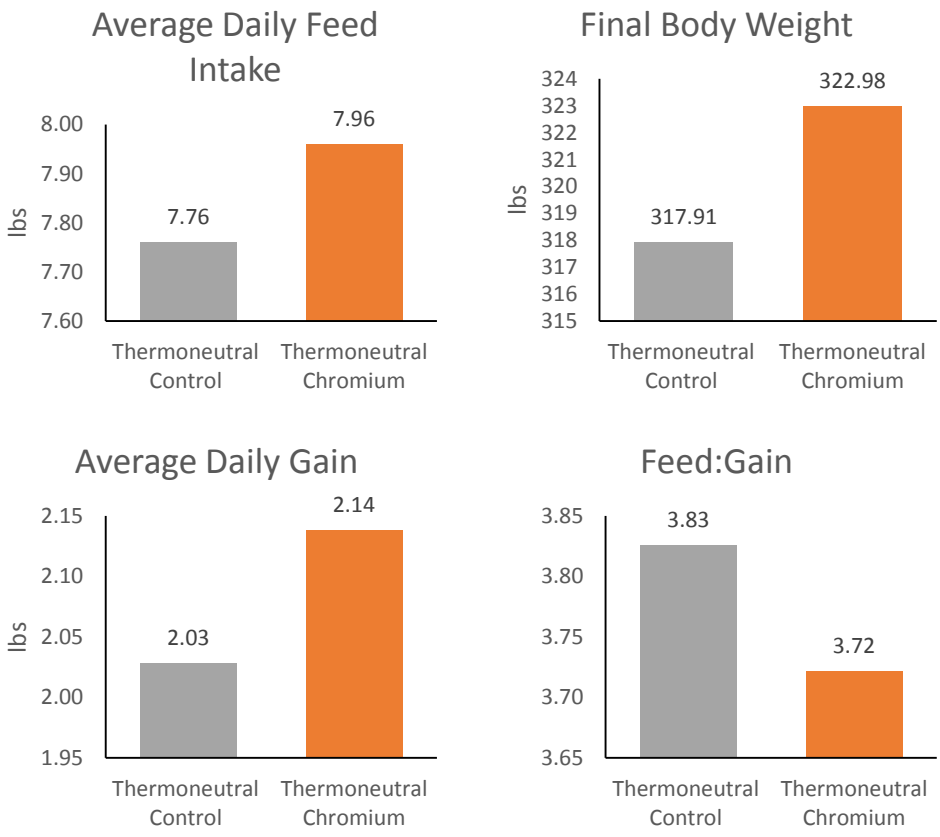

Figure 1. Effect of chromium propionate supplementation on growth performance in pigs in thermoneutral conditions.

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Decreased or inconsistent growth, inefficient feed utilization, and other negative effects in pigs can be attributed to heat stress. Economic losses in the U.S. pork industry due to heat stress are approximately $1 billion each year[4,5]. Figure 2 displays the performance differences between the control and chromium supplemented diets of the chronically heat stressed pigs. Chromium supplemented pigs had a final body weight 5.95 lbs heavier than pigs fed the control diet[1,2].

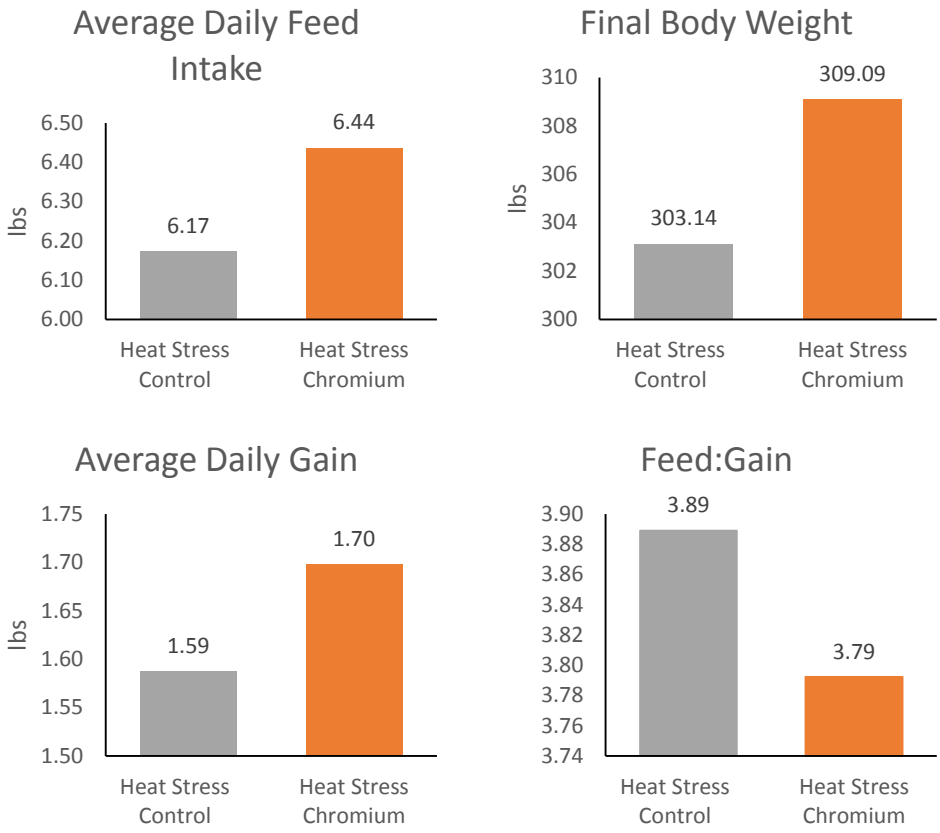

Figure 2. Effect of chromium propionate supplementation on growth performance in pigs in heat stress conditions.

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