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KemTRACE® Chromium Supplementation in Gilt and Sow Rations

Previous research has demonstrated production improvements when gilts and sows are supplemented with chromium. The predominant response has been an improved number of live pigs born per litter. Dependant upon the mothering traits of the sow herd, this may or may not result in a larger litter at weaning[1].

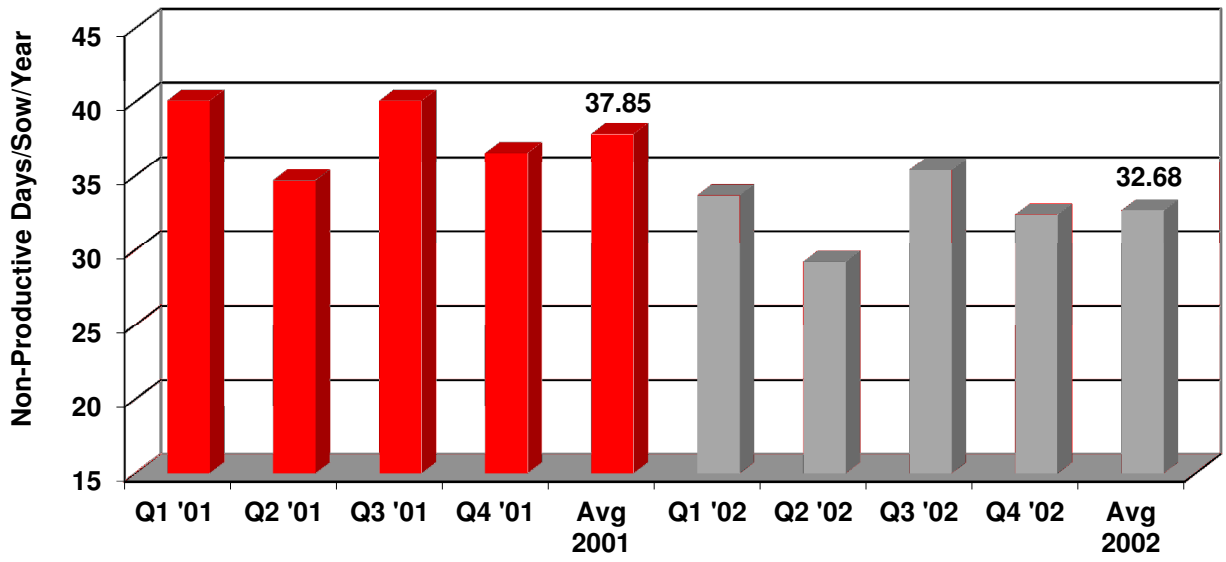
Introduction

A commercial study involving over 65,000 sows was initiated early in 2002 to study the effects of the addition of 200 ppb chromium from KemTRACE® Chromium[2] as a source of chromium to gilt and sow rations. Chromium propionate supplementation represented the only dietary change during that year. Production data generated during 2002 was then compared to data generated during a similar duration of time in 2001.

Results and Discussion

The most notable improvement was a 13.7% reduction in non-productive sow days (Figure 1). The average number of non-productive sow days (NPSD), were 37.85 vs. 32.68 days per sow per year during 2001 and 2002, respectively. By definition, nonproductive sow days are those days when a gilt or sow is not gestating or lactating. Considering the typical five-day weaning to first service interval, and 2.5 cycles per year, the lowest possible number of non-productive sow days is 12.5 days / sow / year.

Figure 1. Annual non-productive sow day (NPSD) rates per sow by quarter and yearly for 2001 and 2002.
(Red – No chromium, Grey – 200 ppb chromium from KemTRACE Chromium)



The total cost burden associated with a non-productive sow day is an extension of sow housing, feeding and management costs, which are known to vary between $2 and $2.50 per day. A five-day reduction in average non-productive sow days would reduce the cost of production by $10 to $12.50 per sow per year. Using an average cost for KemTRACE Chromium of $1.25 per sow per year, an expected return on investment (ROI) could be 8:1 to 10:1, depending on facility age and feed cost.

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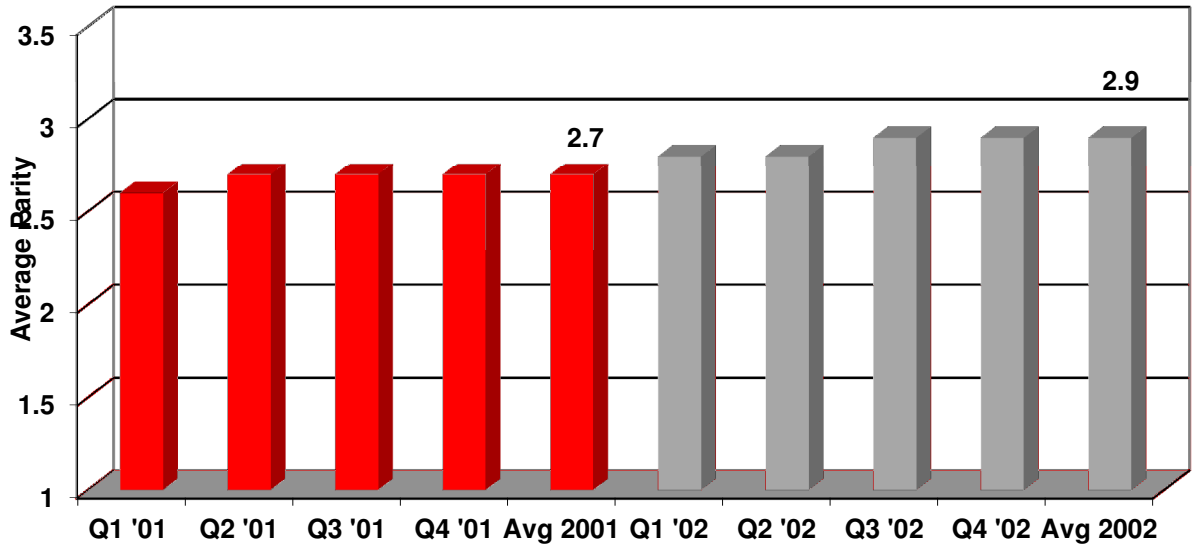
During the same period, sow production data showed a steady increase in the average parity in this herd (Figure 2). This response is an indication that sow longevity improvements are in progress.

Figure 2. Average herd parity by quarter and yearly for 2001 and 2002.
(Red – Control, Grey – 200 ppb chromium from KemTRACE Chromium)



Conclusions

Supplementing gilt and sow rations with 200 ppb chromium from chromium propionate demonstrated a substantial return on investment, due to reduced NPSD, in the first year of use in this herd. Further, due to the associated benefits of improved sow longevity, continued use of chromium propionate promises even greater returns in the future.

References

1. Matthews J. O., A. D. Higbie, L. L. Southern, D. F. Coombs, T. D. Bidner, and R. L. Odgaard, 2001. Effect of chromium picolinate and chromium propionate on glucose and insulin kinetics of growing barrows and on growth and carcass traits of growing finishing barrows. J. Anim. Sci. 79:2172-2178.
2. Letter of Non-objection for the use of chromium propionate as a source of chromium in swine diets to Kemin Industries, Inc., from U.S. Food and Drug Administration Center for Veterinary Medicine, August 4, 2000.