

PORK SAFETY

Title: Productivity and Economic Impacts of Feedgrade Antibiotic Use in Pork Production - **NPB #02-094**

Investigator: Paul E. McNamara

Co-Investigator: Gay Y. Miller

Institution: University of Illinois at Urbana—Champaign

Date Received: October 31, 2003

Abstract: Antibiotics have been used in animal production for several decades. Antibiotics are used routinely now in pork production (NAHMS 2000). There is increasing concern about the use of antibiotics in animal production. There is no hard evidence supporting the link of antibiotic use in animals to observations of antibiotic resistant infections in humans. Nonetheless, a careful examination of the value of continued antibiotic use in agricultural, and in pork production, in particular, is warranted. Therefore, our study measures the productivity and economic impacts of antibiotic use for pig producers at the farm level. We use data from the NAHMS 2000 swine survey. We estimate the combined effects from antibiotics used for growth promotion (AGP) and antibiotics used from disease prevention (ADP) on four productivity measures (namely, average daily gain, feed conversion ratio, mortality rate (MR), and lightweight rate (LR)). We also estimate the economic impact of AGP and ADP for individual pork producers. We estimate these four productivity relationships using seemingly unrelated regression analysis. To help understand the economic impact on producers of alternative public policies regarding animal antibiotic use in pork production, we evaluate the impact of a ban on AGP and ADP, and we use a synthetic firm partial budget to estimate these economic impacts.

Our research results show that pig productivity is improved with AGP, but ADP is associated with lower profits since it is correlated with poorer herd health. Producers have higher profits when AGP and ADP are applied at optimal levels. In this case, producers gain \$4,146 for each 1,020 head barn compared to no antibiotic use.

These research results were submitted in fulfillment of checkoff funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer reviewed

For more information contact:

National Pork Board, P.O. Box 9114, Des Moines, Iowa USA

800-456-7675, **Fax:** 515-223-2646, **E-Mail:** porkboard@porkboard.org, **Web:** <http://www.porkboard.org/>