Perinatal Vaccination Against Salmonellosis

Ted T. Kramer, DVM, PhD
Iowa State University, Ames, IA

Dr. Ted Kramer has investigated various aspects of swine salmonellosis since 1980. These investigations consisted of a search for virulence criteria, affecting the humoral and CMI immune systems (1-4). An immunohistochemical assay was developed for detecting Salmonella in swine tissues (5). The role of iron and iron-binding proteins was investigated in salmonellosis of pigs (6,7). A search was made for spontaneous mutants and Tn10 induced mutants as potential vaccine strains (8). A porcine neutrophil survivor clone was recognized as a good vaccine candidate against swine paratyphoid (9,10). The effect of S. choleraesuis and of LPS on physiologic and immunologic liver functions was investigated (11). A search was made for a suitable indirect ELISA assay to detect carrier pigs (12).

Recently, the factors affecting vaccination of perinatal pigs with an experimental Aro A vaccine was investigated (Kramer and Stocker, manuscript in preparation). It was found that the presence or absence of maternal (colostral and milk) antibodies was the most important factor affecting perinatal immunity and the success of vaccination. The importance of this observation is twofold: (1) it points to the importance of preexisting maternal antibody in active immunization against salmonellosis of newborn pigs; and (2) it suggests that humoral immunity may be important in swine salmonellosis, contrary to the generally held view that immunity to salmonellosis is primarily cell-mediated. These points will be illustrated in the presentation.