EFFECTIVENESS OF ON FARM CONTROL OF INTESTINAL PARASITES

LeRoy G. Biehl* and Horace W. Norton
College of Veterinary Medicine, College of Agriculture
University of Illinois, Urbana, Illinois

State and national surveys have indicated that 85-87% of swine farms are infected with one or more internal parasites.

Over 54% of swine producers in the United States report administration of anthelmintics a mean of 1.8 times to hogs during the weaning-growing-finishing period at a cost of 28 cents per pig per treatment. If anthelmintics have been administered nearly twice to over one-half of the 90 million hogs slaughtered annually, more than 25 million dollars a year is spent on anthelmintics. As modern anthelmintics have been shown to be effective, better management of a parasite control program seems to be needed by most producers.

Feeder pig production is an important part of the southern Illinois livestock economy with feeder pigs exported to other parts of Illinois and to several states to be finished to market weight. Preliminary studies indicated a liver ascarid scar rate of 47% and a liver condemnation rate of 33% in southern Illinois slaughter age swine. The purpose of this study was to determine the incidence of internal parasites in southern Illinois feeder pigs and compare the effects of different management and treatment schedules.

Fecal samples were collected at a monthly feeder pig auction from 15-35 kg pigs raised on 84 farms in southern Illinois. Individual fecals were examined from 5 pigs of each group of pigs presented for sale. Information was obtained concerning the types of housing management and anthelmintic programs used on the pigs presented for sale. Internal parasite egg counts were determined using the modified McMaster technique. The data collected were statistically evaluated by the method of least squares.

Ascaris suum, Trichuris suis and Oesophagostomum spp. eggs and coccidian oocysts were identified. Pigs from 77 of the 84 farms (92%) were infected with at least one nematode and 55% were positive for coccidia. Month of the year had no effect on the incidence of infection.

Type of husbandry did affect the internal parasite infection rate as there were significantly fewer ($P<0.01$) infected consignments reared on confinement flooring than on dirt. Consignments raised on dirt or pasture were twice as likely as pigs raised on confinement to be infected with nematodes. Eighty-one percent of all consignments raised on dirt or pasture were infected with at least one nematode.

Statistically, anthelmintic treatment had no effect on the prevalence of nematodes. The percent positive groups between treated and untreated pigs were almost identical (72% vs. 70%).

The combination of dirt flooring and no anthelmintic treatment resulted in the highest percentage of nematode infections. The low percentage (26%) of nematode-positive fecals found in no anthelmintic treatment and confinement housed pigs was influenced heavily by two producers who consigned pigs 17 times without a positive fecal.

Before specific anthelmintic medication is recommended, fecal samples from a number of pigs should be analyzed. Since frequently only one fecal sample was positive, samples from at least five animals should be checked to evaluate the internal parasite status of a herd.

Anthelmintic treatment of feeder pigs may not always be necessary when good management practices are employed. Four farms in the study consigned unmedicated parasite-negative pigs up to 11 consecutive times. These pigs were housed on slotted floors until sold.

Continued infection in spite of efficacious medication indicates either improper administration of anthelmintics or reinfection or both. The apparent advantage of pyrantel tartrate against Ascaris and Oesophagostomum in the study is probably the result of daily drug intake with no opportunity for poor anthelmintic administration. If current anthelmintic management practices are not effective, broad spectrum continuous-feeding anthelmintics would be desirable for the swine industry.

TABLE I: INFLUENCE OF HOUSING AND ANTHELMINTIC TREATMENTS OF PREVALENCE OF NEMATODES IN FEEDER PIGS

	Raised on Concrete		Raised on Dirt†	
	Anthelmintic		Anthelmintic	
	Yes	No	Yes	No
% Positive	n*=43	n=31	n=106	n=61
Ascaris	33	19	40	77
Trichuris	40	19	59	64
Oesophagostomum	7	6	11	21
One or more nematodes	65	26	75	92

†significantly different, $P<0.01$
*n=one group of 5 pigs per consignment

TABLE II: COMPARISON OF ANTHELMINTICS ON THE PREVALENCE OF NEMATODES IN FEEDER PIGS

	Anthelmintic Administered			
	Piperazine	Dichlorvos	Levamisole	Pyrantel Tartrate
% Positive	n*=78	n=27	n=15	n=5
Ascaris	47	19	20	0
Trichuris	56	41	33	80
Oesophagostomum	13	11	7	0
One or more nematodes	74	56	60	80

*n=one group of 5 pigs per consignment

Selected References: Ames, E. et al. (1976) IPVS: 04.; Mamer, J. C. (1980) Hog Farm Mgt. Mkt. Profile.