

FOOT HEALTH OF SOWS AND DIETARY BIOTIN SUPPLEMENTATION

W.L. BRYDEN*, E.B. GREER**, R.E. MACOUN*** and JANE LEIBHOLZ*

In recent years the overall incidence of leg weakness and lameness in pigs appears to have increased. This has coincided with intensification of the industry and the confinement of animals on a variety of flooring surfaces. Foot lesions in sows may result in an impaired gait and a reluctance to walk and mate. These effects will decrease productivity and may lead to the premature removal of sows from the herd. Many factors are involved in the aetiology of lameness in pigs (Penny and Johnston 1983) and one of these is biotin deficiency which causes severe foot lesions in young pigs (Kopinski et al. 1982). Moreover, evidence is now accumulating that the supply of biologically available biotin may be sub-optimal in commercial diets for sows (Brooks et al. 1977). The present trial was established to examine the influence of dietary biotin supplementation over 18 months on sow reproductive efficiency and foot health.

Three intensive commercial piggeries, each of approximately 120 sows have been used in the trial. At each piggery sows are individually stalled and feed is home mixed. Prior to the commencement of the trial half of the sows on each farm were randomly allocated to a group receiving a supplement of 500 µg biotin/kg diet. The remaining sows served as untreated controls. Piggery C had been supplementing sow diets with biotin for the 12 months preceding the trial. At the commencement of the trial and at six monthly intervals each claw of every sow was individually examined for hoof lesions. Body condition scores were also recorded. Preliminary results after the first six months of the trial are presented in Table 1.

TABLE 1 Claw and body condition scores of sows fed diets supplemented with 0 or 500 µg biotin/kg (mean ± SEM)

	Biotin (µg/kg)	Months	Claw score †		Body condition †	
			0	6	0	6
Piggery A	0		0.19 ± 0.03	0.13 ± 0.02	2.41 ± 0.22	2.76 ± 0.07
	500		0.28 ± 0.04	0.13 ± 0.02	2.98 ± 0.08	3.19 ± 0.07
B	0		0.15 ± 0.02	0.16 ± 0.02	2.60 ± 0.08	2.81 ± 0.08
	500		0.15 ± 0.03	0.13 ± 0.02	2.58 ± 0.66	2.94 ± 0.09
C	0		0.10 ± 0.01	0.13 ± 0.03	3.00 ± 0.07	3.10 ± 0.08
	500		0.11 ± 0.02	0.12 ± 0.02	3.01 ± 0.07	3.27 ± 0.10

† Assessed on a scale from 0 to 5.

Previous field reports of biotin supplementation of sow diets (see Kornegay and Bryant 1981) have been evenly divided between those that show a positive response and those that show a negative response. After six months of the present trial biotin supplementation had not reduced the incidence of claw lesions, although on Piggery A there was a significant improvement ($P < 0.05$) in foot health in both treatment groups. Biotin supplementation was without effect on body conditions.

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* Dept. of Animal Husbandry, University of Sydney, Camden, N.S.W. 2570.

** Agricultural Research and Veterinary Centre, Orange, N.S.W. 2800.

***Roche Products Pty. Ltd., Inman Road, Dee Why, N.S.W. 2099.