INFLUENCE OF SUPPLEMENTARY BIOTIN ON THE BODY CONDITION OF SOWS DURING PREGNANCY AND LACTATION, AND ON THEIR FERTILITY

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Biotin is a cofactor in a number of enzyme systems and consequently is intimately involved in a wide range of metabolic functions (Brooks 1982). Improved fertility and foot health of sows in response to dietary supplementation with biotin are well documented overseas and suggest the supply of biologically available biotin in practical sow diets may be sub-optimal (Brooks 1982). Similar responses to added biotin may occur in Australia. In this experiment we examined the influence of biotin supplementation on the body condition and fertility of sows.

Half the sows on each of three commercial piggeries (each of approximately 125 sows) were fed home-mixed diets supplemented with 500 µg biotin/kg. The other half was untreated. Sows were randomly allocated to treatment on the basis of parity and reproductive state (weaned, pregnant, lactating) and were individually stalled. Body condition of the sows was scored on a scale of one (very thin) to five (overfat) (Gadd 1982) at the start of the experiment and then again at 6 and 12 months. Reproductive performance was recorded over 15 months.

Influence of biotin on body condition score† of sows at various stages of the reproductive cycle

Stage of cycle		Added biotin (µg/kg diet)		
		Nil	500	SEM
Pregnant	< 70 d	2.82	2.92	0.033
	70-90 d	3.03	3.15	0.050
	> 90 d	3.05	3.09	0.026
Lactating		2.50	2.91	0.065
Weaned		2.37	2.72	0.107

† On a scale of one to five.

Biotin improved the body condition of sows (see table) and this improvement tended to increase with parity. The major influence of biotin on body condition occurred during lactation and in the period from weaning to mating. Improved body condition at these times may be associated with the observed reduction of 0.70±0.18 d in the wean-to-effective service interval of the biotin supplemented sows (which had conceived within 25 d of weaning).

Contrary to other reports (Simmins and Brooks 1983; Hamilton and Veum 1984), our results show biotin improved the body condition of sows and that this may be reflected in better reproductive performance.

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