

## BIOTIN SYNTHESIS AND ABSORPTION IN THE PIG

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There is no information on the synthesis of biotin in the digestive tract of the pig but work with other species has shown its synthesis in the caecum of a number of species (Coates et al. 1968). The site of absorption of dietary biotin has not been studied so the present experiment was designed to quantify both the absorption and synthesis of biotin in the young pig.

Eight 2-3 kg Large White x Landrace pigs weaned at 5 d of age were individually fed a cornflour-casein diet (Kopinski et al. 1982) and biotin was added at 0 or 100 µg/kg. Indigestible marker (Ytterbium nitrate) was sprayed on diets given from 89-94 d of age. From day 92 feed was restricted to 80 g/h/pig. On day 94, pigs were sacrificed exactly 15 min after an hourly feed and the intestinal tract was removed, partitioned and digesta collected. All samples were analysed for biotin (Hood 1977) and Ytterbium. Preliminary results are shown in the table.

The concentration and flow of biotin in the digestive tract

	Biotin content (ng/g)			Biotin flow (µg/d)		
	Control	+ biotin	SEM	Control	+ biotin	SEM
Feed - intake	10.3	80.5	-	14.0	130	1.23
Stomach	8.3	68.3	5.26	13.5	112	5.05
SI 1*	4.6	29.8	4.22	6.1	38.8	6.27
SI 2	3.3	24.1	11.26	1.4	9.9	5.23
SI 3	30.8	56.8	22.68	5.8	13.1	4.87
SI 4	44.8	55.8	16.37	5.1	7.9	1.96
Caecum	213	148	45.2	25.0	17.9	6.12
LI 1†	371	369	68.0	38.6	35.3	7.09
LI 2	613	490	76.9	53.4	48.1	11.06
Colon	539	551	136.3	52.0	49.9	14.58

\* Small intestine divided into four equal sections.

† Large intestine divided into two equal sections.

There was considerable synthesis of biotin in the caecum and large intestine of all pigs as previously observed in other species, and there was no difference between the control and biotin-supplemented pigs. The pigs were housed in pens with slatted floors to reduce coprophagy. Under these conditions, the pigs were unable to benefit from this biotin synthesis as symptoms of deficiency were present in the pigs given the deficient diet (Kopinski et al. 1982). This agrees with observations in chicks (Coates et al. 1968).

The major site of absorption of the synthetic biotin in the diet was the first quarter of the small intestine.

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