

THE DIGESTIBILITY OF RICE AND RICE-BASED PRODUCTS IN THE HORSE

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Rice-based pellets (Coprice "M"*) incorporating rice pollard and broken rice are used for horses, and the energy values are based on determinations made for rice by-products in pig, ruminant and poultry feeds (Farrell and Warren 1982). To obtain direct data, four standardbred geldings aged from 4 to 8 years were fed: oaten chaff (47.25kg/week); oaten chaff (31.5kg/week) plus broken rice (15.75 kg/ week); oaten chaff (31.5kg/week) plus rice pollard (15.75kg/week); and oaten chaff (31.5 kg/week) plus Coprice "M" (15.75kg/week) in a Latin square design. Each diet was fed twice daily at the maintenance level for a 450kg horse (NRC 1978) for three weeks, in the last of which faeces and feed residues were collected. Aliquots of pooled faeces were analysed for dry matter (DM), gross energy (GE) and ash. The apparent digestibility coefficients for DM, GE, organic matter (OM) and digestible energy (DE) of each feedstuff were estimated according to DM proportion in each diet (Table 1).

TABLE 1 Dry matter, organic matter and gross energy contents of feedstuffs, digestibilities, and estimates of digestible energy values (as fed basis)

Feedstuff	Proportion Eaten (%)	Analysis			Digestibility			
		DM (%)	OM (%)	GE (MJ/kg)	DM (%)	OM (%)	DE (%)	DE (MJ/kg)
Oaten chaff	100	92.0	87.6	16.8	60.6	63.0	60.3	10.1
Rice pollard	61	91.6	83.1	20.1	59.6	64.5	65.1	13.1
Broken rice	76	88.1	87.7	15.6	88.7	90.1	85.3	13.3
Coprice "M"	100	89.9	83.0	15.7	76.1	79.5	75.2	11.8

The results for rice pollard and broken rice were based on data from only two horses. Two horses did not eat all of the rice pollard, and while one refused the broken rice another was coprophagic. All horses ate the oaten chaff and oaten chaff/Coprice "M" diets. The mean (+SD) liveweights at the beginning and end of the trial were 434 + 60 and 438 + 43 respectively. The DE of oaten chaff was slightly higher than is generally accepted for oaten hay (NRC 1978). These results confirmed that rice milling by-products are high in energy for horses. Broken rice was highly digested, while rice pollard (although the GE was very high) had a much lower DE. This reflected its relatively low digestibility in these horses. These results suggest that the digestive tract of the horse may not be able to utilise the high oil content of rice pollard (21% as fed) as efficiently as carbohydrate sources. The digestibility of Coprice "M" was mid-way between that of broken rice and rice pollard, and the DE of Coprice "M" was lower than for broken rice and rice pollard. The digestibility coefficients for these rice-based feeds were higher than those reported for forages and feed cubes (ie. 0.60-0.90 vs 0.46-0.57; Gallagher et al, 1984; Vander Noot and Trout 1971).

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