Eight of the nineteen soya-bean meals tested had cresol-red absorptions in excess of 4·3 mg/g meal, corresponding to the 'overheated' meals of Olomucki & Bornstein. SB21 corresponds to a 'much underheated' meal and was indeed one of the poorer samples. The results suggest that acceptable limits for cresol red absorption are at least from 3·5 to 4·5 mg/g meal, and it is significant that most of these samples, all obtained commercially, fall within this range.

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Glucose entry rates in sheep given diets of barley, dried grass or hay.

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The rate of entry of glucose into the metabolic glucose pool and its rate of oxidation have been measured in three sheep given diets of barley (85% barley, 15% protein–mineral–vitamin supplement), dried grass or hay. A latin square design was used. All diets were pelleted and were given in amounts sufficient to maintain body-weight. Steady-state conditions were achieved by the use of a continuous-belt feeding device (Sutherland, Gupta, Reid & Murray, 1963; Ulyatt, 1967).

Glucose entry rates were measured by the isotope-dilution procedure of Steele, Wall, de Bodo & Altszuler (1956); D-(U–^{14}C)glucose was used as the labelling agent and was infused intravenously for 3–6 h. Expired CO_2 was collected by means of equipment similar to that described by Robbins & Bakke (1967). The steady-state specific activity of plasma glucose between min 60 and 180 of infusion and the 180 min specific activity of expired CO_2 were used to calculate parameters of glucose utilization (Bergman, 1963).

Despite large differences in the amounts of α-linked glucose polymer supplied by the diets there were no significant differences between treatments in plasma glucose concentration, in glucose entry rates, in the percentage of expired CO_2 derived from glucose or in the percentage of glucose oxidized to CO_2 (Table 1). Overall mean values for the total body pool of glucose and its apparent volume of distribution were 5·90±0·45 g and 24·7±2·7% of body-weight, respectively. The absence of any effect of diet on the rate of glucose utilization by sheep is in agreement with a recent report by Judson, Anderson, Luick & Leng (1968).

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Table 1

| Diet | Mean body-wt (kg) | Daily intake | | Plasma glucose concentration (mg/100 ml) | Glucose entry rate (mg/min kg) | CO_2 from glucose (%) | Glucose oxidized to CO_2 (%) |
		Digestible energy (kcal)	α-linked glucose polymer* (g)				
Barley	40·2	2080	331	57·7	1·24	3·55	16·7
Dried grass	40·0	2037	41	58·4	1·49	4·09	21·0
Hay	43·6	1965	78	57·5	1·37	3·86	16·5
SE of mean				1·80	0·12	0·22	1·69

*Expressed as glucose.

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Measurement of the flow of long–chain fatty acids into the duodenum of sheep. By AILEEN M. SCOTT, M. J. ULYATT* and R. N. B. KAY, *Rowett Research Institute, Bucksburn, Aberdeen*, and J. W. CZERKAWSKI, *Hannah Dairy Research Institute, Ayr*

Ulyatt, Czerkawski & Blaxter (1966) have described how two markers may be used to estimate the flow of solid and of fluid digesta through the rumen and abomasum and from these the flow of long-chain fatty acids was calculated. To test the technique directly two sheep fitted with rumen cannulas and re-entrant duodenal cannulas have now been used to measure and sample the flow of digesta into the duodenum by the method of Bruce, Goodall, Kay, Phillipson & Vowles (1966) and the duodenal flow was also estimated by the two-marker technique. Pelleted dried grass, 800 g daily, was given continuously from a moving belt apparatus and water, 3 l. daily containing 15 g polyethylene glycol (PEG), was infused continuously into the rumen. In one experiment the grass was given alone and in a second experiment an emulsion of linseed oil fatty acids was added to the rumen infusate.

The digesta were centrifuged at 2750 *g* and total long-chain fatty acids were determined in both the sediment and the supernatant liquid. The dried solids were analysed for lignin (Czerkawski, 1967) and the supernatant liquid for PEG (Smith, 1959). The dietary intake of lignin divided by its concentration in the solids gave an estimated flow of solids, and the amount of PEG infused divided by its concentration in the supernatant liquid gave an estimated flow of fluid.

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