

Linseed or soya oil in a fattening diet: 1. degradability in the rumen. A Clinquart, L Istasse, A Mayombo, C Van Eenaeme, I Dufrasne, JM Bienfait (*Faculty of Veterinary Medicine, Dept of Animal Nutrition, University of Liège, Sart Tilman, B 43, 4000 Liège, Belgium*)

Linseed or soya oil when introduced separately in a fattening diet improved animal performance of growing-fattening bulls (Istasse *et al.*, 1990). The aim of the present paper was to assess the degradability in the rumen of these 2 foodstuffs and the changes in fatty acids.

The first fat supplement (LB) was a mixture of 50% linseed and 50% barley; it was used either ground, steam flaked or extruded. The second fat concentrate (MSO) was a mixture of 80% middlings and 20% purified soya oil. Disappearance from the nylon bag of dry matter (DDM), nitrogen (DN) and ether extract (DEE) of the 2 foodstuffs was measured after 2, 4, 8, 16, 24 and 48 h of incubation in the rumen according to the technique described by Mehrez and Ørskov (1977). The measurements were repeated on 3 Friesian steers. Fatty acid composition was determined before and after an 8-h incubation.

DDM, DN and DEE of the LB mixture after an 8-h incubation were 66.7, 76.4 and 67.1% re-

spectively. Steam-flaking and extrusion did not alter DDM but reduced ($P < 0.001$) DN at 66.0 and 65.6% respectively. DEE was only reduced with extrusion (59.5%, $P < 0.001$). The DEE of the MSO mixture was high at 85.1%. Steam-flaking and extrusion slightly reduced the proportion of desaturated fatty acids as compared with grinding. Hydrogenation of the fatty acids in the flaked or extruded LB by the rumen was not modified to a large extent. These changes were greater for MSO in which no C18:2 and C18:3 were detected after an 8-h incubation.

In conclusion, since it is rapidly available to the microflora, fat supplement offered in the form of purified oil was degraded and modified to a larger extent than in seed form. On the other hand, treatment of the seed did not influence changes by rumen microflora.

Acknowledgment

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References

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