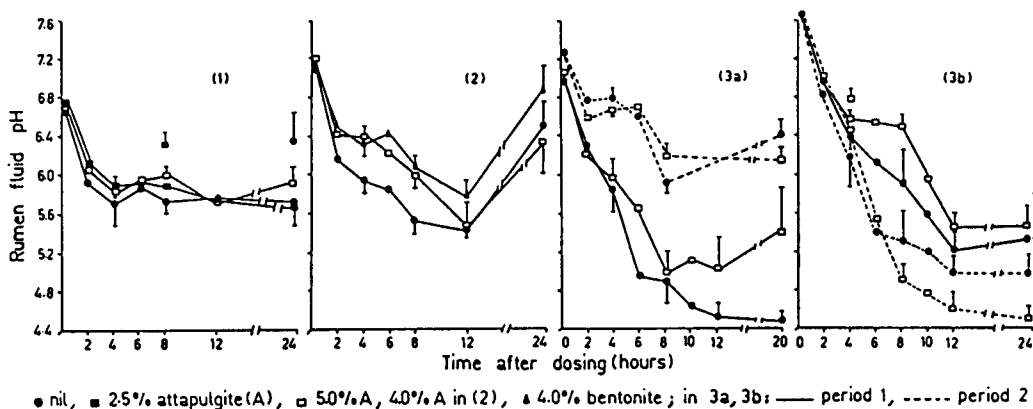


EFFECTS OF ATTAPULGITE ON RUMEN FLUID PH
IN SHEEP DOSED WITH CEREAL GRAINS

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Attapulgitite and bentonite, are structurally different clay minerals that are used as pelletising and binding agents in stock-feed manufacturing. Bentonite reduces the incidence of acidosis-related deaths in sheep during adaptation to high grain diets (Dunn et al. 1979) and the same benefit has been claimed for attapulgitite but data are lacking. Three experiments (1), (2) and (3), were conducted to monitor changes in rumen pH in sheep dosed with cereal grains.

Ground cereal grain was introduced through a fistula into the rumens of individually penned wethers weighing 38-43 kg, maintained on hay but not fed for 24 hours preceding dosing or during monitoring. In (1), three wethers were dosed at 0900 hours with 75g barley/kg ^{0.75} alone and with the addition of 2.5% or 5.0% attapulgitite (A) in a 3 x 3 latin square with 8 day intervals between periods. Similarly, in (2) six wethers were dosed with 50g wheat/kg ^{0.75} alone and with the addition of 4.0%A or 4.0% bentonite (B) in a replicated 3 x 3 latin square with 12 day intervals. In (3a), 10 weeks later, the same wethers were dosed with 60g wheat/kg ^{0.75} alone or with 5.0% A in a cross-over design with a 9 day interval. In each experiment, a preliminary dosing was carried out at the appropriate interval prior to the first period. Because of a significant period effect in (3a), this experiment was repeated four months later (3b) with a 30 day interval (no preliminary dosing). Mean responses are given in the Figures.



A and B tended to reduce ($P < 0.10$) depression of rumen fluid pH between 4 and 8 hours in (2) but the effects of A in other experiments were small and not significant. In 3(b), significant period ($P < 0.01$) and diet x period interactions ($P < 0.01$) occurred. Despite this, in (3a) and (3b), attapulgitite did not prevent pH falling below 5.2 in four of the six sheep.

It is concluded that attapulgitite does not offer reliable protection against acidosis where sheep are introduced too rapidly to cereal grains.

DUNN, B.H., EMERICK, R.J. and EMBRY, L.B. (1979). *J. Anim. Sci.* 48:764.