

LETTER

SERUM ALKALINE PHOSPHATASE VALUES IN LAMBS IN RELATION TO  
PREPARTURIENT MATERNAL NUTRITION AND LITTER SIZE

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ABSTRACT

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Serum alkaline phosphatase (SAP) levels were investigated in lambs at birth and 24 hours, 48 hours and 4-6 weeks of age. The lambs were born to ewes which had been on two different planes of nutrition during the last 8 weeks of gestation. At this stage, maternal nutrition directly affects the rate of foetal growth and subsequent birth weight. At birth, lambs born to ewes on the higher nutritional plane had higher SAP values than lambs born to the other ewes. The values at birth reflected the greater intra-uterine growth and birth weight of lambs born to the better nourished ewes. Within the same nutritional group, lambs born in larger litters had lower SAP values than lambs in smaller litters, reflecting the slower foetal growth rate and smaller birth weight of the individuals in the larger litters. The trends in SAP levels present in the early stages were still evident at 4-6 weeks of age.

INTRODUCTION

Alkaline phosphatase is an enzyme which is capable of hydrolysing monophosphoric esters to yield inorganic phosphate and the organic moiety. It operates normally at pH 9.5 and is widely distributed in the body. A variety of isoenzymes of alkaline phosphatase are known which are derived from different parts of the body, such as the intestinal mucosa, kidney, liver and bone. The alkaline phosphatase of osteoblasts has its site of function outside the cell and contributes largely to the circulating alkaline phosphatase.