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**A STATISTICAL STUDY ON VARIATIONS OF BLOOD
PROPERTIES ASSOCIATED WITH PARTURITION
IN PRIMIPAROUS DAIRY COWS**

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Ten blood properties—total protein, cholesterol, zinc turbidity test, leucine amino peptidase, alkaline phosphatase, lactate dehydrogenase, hemoglobin, hematocrit, red blood cell count and white blood cell count—were measured in primiparous cows at three different stages near parturition, 260 days of pregnancy, 5 days and 35 days after parturition. The measurements for the former 7 properties were undertaken by a rapid blood analyzer-system (RaBA-System, Chugai-seiyaku Co. Ltd., Tokyo). The experiments were performed in two seasons, winter (January to April) and summer (June to September), using 11 cows in each seasonal group. The values of these properties were treated by the discriminant analysis. The results obtained are summarized as follows:

1) The degree of inclusive variation of the 10 blood properties by the discriminant analysis was small in winter and very large in summer between 260 days of pregnancy and 5 days after parturition. It was large in both seasons between 5 days and 35 days after parturition. In addition, in the comparison between the corresponding stages in the two seasonal group, the degree was larger in summer than in winter. The discrepancy in the seasonal patterns seemed to occur by the differences in environmental factors, such as temperature, feeding conditions, etc., in addition to stresses due to pregnancy, parturition and lactation.

It was verified that the discriminant analysis, one of the multiple variance analyses, was useful for an inclusive, objective judgment on data of multiple clinical examinations in dairy cows.

2) The measurement values of the 6 properties excepting leucine amino peptidase obtained by RaBA-System were also analyzed by the discriminant analysis. As compared with the results of the analyses of 10 properties, however, a marked increase in the false classification probability was observed in those with 6 properties. So, it seemed that the analyses of 6 properties were insufficient for evaluating the inclusive variations of these blood properties due to parturition in dairy cows.