

THE RELATIONSHIP OF SERUM IMMUNOGLOBULIN LEVELS WITH AGE,
SERUM TOTAL PROTEIN AND LIPEMIA IN THE CANINE NEONATE

by

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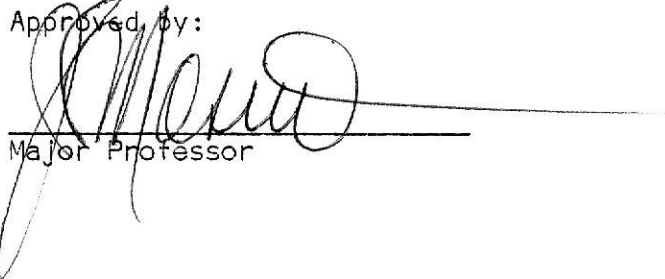
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INTRODUCTION

The study of the immune system and how it relates to health and disease has become a very important area of study in veterinary medicine. Much of the information available concerning the interrelationship between passive immunity and diseases of neonatal animals is concerned with the bovine, equine and porcine species. Death losses due to inadequate passive immunity or insufficient immune competence of the individual in these species can result in great economic loss to the breeder. Information concerning the level of passively received immunity and early immune competence in the canine is limited.

The purpose of this investigation was to gain information concerning serum immunoglobulin levels and their relationship to age in the puppy. The relationship of serum immunoglobulin levels to other factors such as serum total protein and the error in measurement caused by lipemia was also studied. The relationship of serum total protein and serum hemolysis was investigated.

Carnivores possess an endotheliochorial placenta whereby the canine fetus receives some degree of passive immunity before birth. Serum immunoglobulin levels of pups at birth consist of mainly IgG. The transmission of passive immunity by way of colostrum to the canine neonate is much greater than that transmitted across the placenta. In pups maximal absorption of colostrum immunoglobulins occurs approximately 8 hours after birth. No appreciable absorption occurs 24 hours after birth.

The developing canine fetus has been shown to have some level of immune competence. The fetus is able to respond to certain antigens only at a fixed stage of gestation. It has been shown that neonates are able to respond to certain antigens within 2 hours after birth.