BIOCHEMICAL CHANGES IN THE BLOOD OF WORKING BULLOCKS

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C E R T I F I C A T E

This is to certify that the thesis entitled, **"BIOCHEMICAL CHANGES IN THE BLOOD OF WORKING BULLOCKS"**, submitted in part fulfilment of the requirements for the degree of **MASTER OF VETERINARY SCIENCE IN LIVESTOCK PRODUCTION AND MANAGEMENT** to the Tamil Nadu Veterinary and Animal Sciences University, Madras is a record of bonafide research work carried out by **Thiru L.CHANDRASEKARAN**, under my supervision and guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journal or magazine.

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ABSTRACT

BIOCHEMICAL CHANGES IN THE BLOOD OF WORKING BULLOCKS

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A study was conducted on the physiological responses and the important biochemical constituents in Kangayam and cross-bred work bullocks at various stages viz. before work, after work and after rest during ploughing and carting operations; thereby to find out (a) the actual changes taking place in the blood when the animals are put to work, (b) the extent to which these changes take place and (c) the time required for these changes to obtain original level. Six Kangayam and 12 cross-bred bullocks which were clinically normal of different ages under uniform management maintained at Livestock Research Station, Kattupakkam were used for this study. Blood samples were collected once in a week for a period of three months from these work bullocks.

The physiological responses showed a highly significant ($P < 0.01$) differences between the breed, between the type of work and between the periods of work. However, it was noticed that the rectal temperature showed a significant effect during carting. But all the physiological responses were of greater magnitude in cross-breds than Kangayam. Except the respiratory rate neither the pulse nor the rectal temperature did not attain normalcy after rest equivalent to the period of work. Regarding the biochemical changes glucose and creatinine showed an insignificant decrease and increase respectively due to work. Cholesterol showed a highly significant ($P < 0.01$) difference during ploughing operation. However a non-significant decrease in cholesterol was observed during carting operation. The S-GOT level revealed a significant ($P < 0.05$) difference during both operations. A study on the length of utility of the cross-bred bullocks will throw light to decide whether the cross-bred draught animal power can replace the local draught animal power effectively.