

A - 24 **RELEASE OF ALKALINE PHOSPHATASE FROM BUFFALO SPERMATAZOA DURING STORAGE AT 4°C**

R. Sivakanesan, Jayaluckshmy Murugesapillai

and

R. Rajamahendran

(Department of Biochemistry and Department of Animal Husbandry, University of Peradeniya)

One of the constraints to artificial insemination is the preparation of semen which will preserve the membrane stability and structural integrity of spermatazoa. The degree of membrane damage can be assessed from the extent of release of enzymes and other intracellular constituents.

The present study on the effectiveness of two diluents, namely Tris egg yolk (TEY) and Milk egg yolk (MEY) on the preservation of buffalo sperms at 4°C reveals that TEY is a better medium than MEY, as assessed by the release of alkaline phosphatase. When MEY was used as the diluent, the alkaline phosphatase level in the seminal plasma increased by 57-62% as soon as dilution was completed, suggesting membrane damage and leakage of the enzyme. Little or negligible release of alkaline phosphatase was observed when TEY was used as the diluent.

The activity of alkaline phosphatase in seminal plasma prepared from samples taken at regular intervals preserved with both MEY and TEY was found to decline gradually. However, enzyme activity measurements carried out in sperm free plasma preserved in both diluents showed that alkaline phosphatase was stable for 2 days. Therefore, the decline in activity observed could be due to the release of substances from spermatazoa, upon storage, which possibly inactivate or interfere with the enzyme.

In the absence of any diluents, activity of alkaline phosphatase in sperm free plasma was found to decline by 20-25% in 2 days.