

## Level of HSP70 Concentration on Artificial Insemination, Embryo Transfer, and Non Return Rate on 21<sup>st</sup> Day of Dairy Cattle (*Friesian holstein*)

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### ABSTRACT

*Heat Shock Protein* (HSP) 70 is stress protein which caused body temperature increased due excessive heat load, decrease feed intake, and changes in body metabolism. This study aims to prove that there is an increasing level of HSP70 concentration on Artificial Insemination, Embryo Transfer, and *Non-Return Rate* on 21<sup>st</sup> day of dairy cattle (*Friesian holstein*). Samples used 20 dairy cattle which not in heat, not pregnant, and ever produce. Blood samples were taken and collected due estrous synchronization, AI, ET and on 21<sup>st</sup> after AI applied. In the other hand, blood samples of control group were taken due natural heat. Blood serum used for ELISA (Enzyme-Linked Immunosorbent Assay) test using Bovine-HSP70 Test Kit then the result read by ELISA reader. Data were analyzed using ANOVA (Analysis of Variance) by SPSS (Statistical Programs for Social Scientific). The result showed that no significant differences between treatment group (P<sub>1</sub>, P<sub>2</sub>, P<sub>3</sub> and P<sub>4</sub>) but showed significant different between treatment group and control group (P<sub>0</sub>). It suggest that stress which experienced by treatment group is much higher than control group because beside environmental factors as the main factor caused stress, it does estrous synchronization, AI, ET and NR21. Conclusion, there is an increasing level of HSP70 on AI, ET, and NR21 of dairy cattle (*Friesian holstein*), so it suggested to restudy and discussion about HSP70 which support this result and recommended for further research about tracking an increase HSP70 level to early embryonic death, abortus, pregnancy and birth.

**Keywords:** HSP70, Artificial Insemination, Embryo Transfer, NR21, Dairy cattle