

## ***ABSTRACT***

### ***DATA COMMUNICATION SYSTEM FOR FEMALE COW CONDITION MONITORING***

*Dairy farms are common today. The products of cow's milk have been widely used as food so dairy farming has become very important today. However, due to the absence of male cattle in dairy farms, getting new breeds of cattle on dairy farms becomes quite difficult. One way is by artificial insemination. However, this artificial insemination can only be done when a female cattle is in a state of heat so that it can only be done at certain moments. This is a new problem because the farmer can not supervise the cow at any time so that sometimes the period of heat is missed.*

*In this final project, the authors create a device that is expected to read the condition of the cattle during mating season so that the breeder can immediately know if there is a female cattle ready to mate. This device will detect if a cattle is in mating season by reading its tail movement pattern in specific duration. A sensor will be installed in the cattle's tail to read its tail movement pattern.. The output data will then be sent to the local server on the breeder's PC through the LAN network to make it easier for the farmer to monitor the condition of the cows. Data communication part will be done by writer while the sensor and processing program will be done by writer's teammate.*

*The result of the writer group's final assignment is a device that can detect if a cattle is in heat, complete with a communication data system to send the result to the user's PC. This device could detect cattles heatwave with 70% precision, with 40 meter maximum range in line of sight condition and 20 meter maximum range in not line of sight condition.*

***Keywords: Cattle Heatwave, Data Communication, LAN.***