ABSTRACT

ARIE NUR SYAMSI. Expert System for Colic Diagnosis of Horse using Fuzzy Logic. Under supervision YENI HERDIYENI and BUDHY JASA WIDYANANTA.

Colic is a term used to describe various kinds of abdominal discomfort, caused by a variety of reasons ranging from gut hooked up to the entrolit due to worm infestation. Signs of colic vary according to the severity of certain conditions. Very few horses show all the signs at one time. This research propose an expert system for colic diagnosis of horse using fuzzy logic. Colic is identified by heart rate, gut sound, gastric reflux and old incident of colic. This research designed an expert system to determine what type of colic and focus on three types of colic: impaction, tympani and twisted gut. This system is built using Fuzzy Inference System (FIS) with four fuzzy parameters: heart rate, gut sound, gastric reflux and old incident of colic. Rules as knowledge base had been built with 36 rules for each colic. Mamdani method is used as inference process. System gives the type of colic as output. The type of colic also divides into six categories: support tympani, very supportive tympani, support twisted gut, very supportive twisted gut, support impaction, very supportive impaction. Based on verification, system can produce levels of accuracy around 89.89 %, the experimental result shows that fuzzy logic can be used to detect colic. To be used in real condition, this system still develeope further, for example by adding other factors as parameters, such as anamnesa or examination of vital signs in horses.

Keywords: Expert System, Colic In Horses, Fuzzy Logic, Mamdani Method