

***Identification of the Effect of Water Temperature and pH Levels in
Koi Fish Ponds with IoT-Based Fuzzy Methods***

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ABSTRACT

Koi fish cultivation in ponds requires actions in the form of feeding the fish and caring for the pond itself. Koi fish that are kept must pay attention to the temperature and pH levels of the water. Water quality in the ornamental fish cultivation process plays an important role in creating an environmental atmosphere that is in accordance with the needs of koi fish in order to be able to provide a comfortable atmosphere for the continued growth and development of koi fish. The quality of rearing water can deteriorate rapidly due to feed residues, faeces, and metabolite discharges. The pH level used expresses the level of acidity of a solution. The degree of acidity (pH) and water temperature are important factors in the growth of ornamental fish. A.Qur'ania and D.I in their research identified using three parameters, namely temperature parameters with optimal water temperatures between 25Co - 27Co, pH parameters with optimal water pH between 7.2 - 7.5 in mixed koi fish ponds. Where in his research, it was found that high water temperatures can cause fish growth to be slow. This is due to the very temperature. To create a water quality identification system to determine the value of water quality in koi fish ponds. Water quality identification can be done in real time using several tools including temperature sensors, pH sensors, Wemos D1 Mini ESP8266 Microcontroller, LCD, Arduino. In this study, researchers used the fuzzy tsukamoto method to identify water quality in koi fish ponds, because more accurate results were obtained.

Keywords: *Koi Fish, Water Quality Identification System, Fuzzy Tsukamoto*