

Teeraporn Makaroon 2012: Chemical Values of Water for Livestock Consumption in Thailand. Master of Science (Veterinary Epidemiology), Major Field: Veterinary Epidemiology, Department of Veterinary Public Health. Thesis Advisor: Assistant Professor Phitsanu Tulayakul, Ph.D. 107 pages.

The study of chemical quality of drinking water uses for livestock in various farming area in Thailand were investigated. Questionnaires and water samples for chemical quality include heavy metals analysis from sixty-eight pig farms, thirty-five chicken farms and nine duck farms were collected. There found that water for livestock consumption had pH, hardness, chloride and TDS were higher than standard limit for livestock. In the part of heavy metals, generally the median of manganese and iron levels in water for livestock were higher than 0.05 and 0.3 ppm, respectively, throughout the country.

The median of pH value in groundwater was 6.85 which significantly ($p < 0.05$) lower than in surface water of 7.23, while the median of hardness level of 169.5 ppm was significantly higher than surface water with the levels of 112 ppm. All of chemical quality values of both water resources were in the range of water chemical quality standard for livestock. The levels of manganese and iron in surface water were 0.183 and 0.506 ppm, of which both levels were significantly higher than groundwater and even over limits compared to standard of drinking water. The levels of pH, TDS and chloride in groundwater from pig farms were significantly higher than in poultry farms at 7.02, 448 and 170 ppm, respectively. The calculation for logistic regression model can be concluded that factors associated with excessive of manganese level in water was the water from farm located outside western region of Thailand and using surface water for their livestock consumption.

Student's signature

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