

Norasuthi Bangphoomi 2007: Administration of Thai Mixed Medicinal Plants to Decrease Leptospira Reservoir in Periparturient Dairy Cows. Master of Science (Animal Physiology), Major Field: Animal Physiology, Department of Physiology. Thesis Advisor: Assistant Professor Siriwan Prapong, Ph.D. 115 pages.

To evaluate actions of Thai mixed medicinal herbs containing *Andrographis paniculata* (Burm.f) Nee, *Curcuma longa* (Linn), *Phyllanthus amarus*, *Zingiber cassumnar* (Roxb.) and *Euphorbia hirta* (L.), in periparturient dairy cows, twenty five dried off dairy cows were assigned into 2 groups; dairy cows with no herb treatment (No herb) and dairy cows with Thai mixed medicinal herbs (Herb) orally fed during 5 weeks before parturition to 4 weeks after parturition. Hematologic physiological changes, renal safety, milk production, metabolic diseases incidence (dystocia [with/without abortion], mastitis and laminitis) and cytokines level, IFN- γ and TNF- α , were evaluated. Antimicrobial activities to leptospira of these herbs were also investigated in all experimental cows by subdividing all cows 4 subgroups by Leptospira reservoirs status. Calves, born from experimental dairy cows, were evaluated medicinal herbs actions on them too. Experimental results showed that cows from Herbs and No herbs groups had similar hematologic profile except WBC, lymphocyte and monocyte level, which their levels were high in Herb group. Serum creatinine, BUN, urine pH and milk productivity were similar in cows from both groups. The mixed medicinal herbs showed effects on reducing incidence of dystocia [with/without abortion], mastitis on treated cows. However, it did not reduce laminitis incidence. The cytokine IFN- γ and TNF- α levels tend to be reduced in herbs treated cows during parturition days. The mixed medicinal herbs showed to decrease number of spirochete in urine culture from Leptospira reservoir cows, especially during 1 week prepartum to 2 week postpartum. Herbs were not affected to calves. In conclusion, Thai mixed medicinal herbs were safe for dairy cow health, renal safety, and non disturbing hematological profile and milk production in herbs treated cows. Cows treated with these herbs had higher number of lymphocyte and monocyte which these cells involve in immune response system. Serum IFN- γ and TNF- α levels in cow on parturition day were also reduced. Their antibiotic action in this study is bacteriostatic level to Leptospira.

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Thesis Advisor's signature

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