

Wanwisa Chumngoen 2009: Effect of Dietary *Leucaena leucocephala* Supplementation on Milk Quality and Conjugated Linoleic Acid Content in Early Lactation Dairy Cows. Master of Science (Food Safety), Major Field: Food Safety, Department of Animal Science. Thesis Advisor: Associate Professor Kanchana Markvichitr, Dr.Med.Vet. 111 pages.

The effect of leucaena forage supplementation at different levels on milk production, milk quality, milk composition and CLA content were studied in 12 heads $\geq 87.5\%$ HF multiparous dairy cows and age range of 4.0 ± 1.0 years, using Repeated Measurements in Completely Randomized Statistically Designs. All cows were fed *ad libitum* with fresh pangola grass with different supplementations; group 1: supplemented fully with concentrate at 4 kg/head/day (no supplement with fresh leucana leaves, as PC). Group 2: supplemented with concentrate at 2 kg/head/day and fresh leucaena leaves at 4 kg/head/day (replacement concentrate with 50% fresh leucaena leaves, as PCL) and group 3: supplemented with fresh leucaena leaves at 8 kg/head/day (replacement concentrate with 100% fresh leucaena leaves, as PL). The feeding period was assigned from 30 days prepartum throughout 100 days in milk postpartum. The data was collected in 100 day for milk yields. For milk quality, milk samples were collected to analyze the milk composition every 10 days. (10, 20, 30, ..., 100 days in milk) and CLA content every 20 days (20, 40, 60 and 80 days in milk). The result revealed no significant different among groups was found on milk yield and 4% FCM. However, milk fat of PCL and PL groups were higher than PC group (3.93, 3.96 and 3.60%, respectively) significantly ($P < 0.05$). Milk protein of PCL group was higher than PL and PC groups (3.05, 2.85 and 2.77%, respectively) significantly ($P < 0.01$). The SCS in PL group was lower than PCL and PC groups (4.03, 5.00 and 5.08, respectively) significantly ($P < 0.05$). Finally, the CLA content in PL group was the higher than PC and PCL groups (4.46, 2.62 and 2.58 mg/g fat, respectively) significantly ($P < 0.05$).

Therefore, as the significant results, fresh leucaena leaves could be used to replace concentrate at levels of 50 and 100% in early lactation such moderate yielding dairy cows (100 days postpartum) without any reduction effects in milk production. It also increased the levels of milk fat, milk protein, total solids and solids not fat. The lower SCS values of supplemented group (PL) indicated the ability to reduce the risk of subclinical mastitis prevalent in dairy cows. In addition, replacement concentrate with 100% fresh leucaena leaves could increase CLA content in milk significantly adding to a better milk quality, benefit: cost of production and also consumer health benefit.

Student's signature

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