

THESIS TITLE : A STUDY ON PERFORMANCE, MANAGEMENT AND ECONOMIC
RETURN OF SAHIWAL-FRIESIAN CROSSBRED DAIRY COWS
RAISED BY SMALL HOLDERS IN IRRIGATED AREA OF
KHON KAEN PROVINCE

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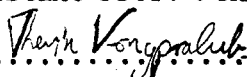
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ABSTRACT

The objective of this research was to study on performance and economic return of Sahiwal-Friesian crossbred dairy cows managed by small holders in irrigated area. The selected areas covered 10 farm families in Ban Nhonghin and Ban Don-Yang, Tambon Sila, Amphur Muang, Khon Kaen Province.

At the first lactation records, age at first calving, lactation period and milk yield were obtained from farmer's records. During the second lactation, the records of interval from calving to first estrus, insemination, calving interval, gestation period, retention of placenta and 8-grade cow scoring were collected by the researcher. Milk samples at day 22, 23, 24 ; 43, 44, 45 ; 64, 65, 66 after insemination were used for

pregnancy detection through progesterone levels which measured by radioimmunoassay (RIA). Daily management of the dairy cattle were obtained by observation, interview and recording. Expenditure and income from dairy raising were recorded for estimation of the economic return and were used to predict the economic outcome after 10 years of the dairy raising.

Sixty percents of dairy holders completed their education at Pratomsuksa (grade) 4. All of them were classified as medium to high income within the village. The average land holding was 13.40rai/family and the land price ranged from 30,000 to 50,000 baht/rai. Dairy cattle were allowed to graze on their pasture or public land. In the early stage of lactation cows were fed with the concentrate at a ratio of 1 kilogram (kg.) per 3 kg. of milk yield. The concentrate contained 16-18 percents of crude protein. Vaccination and artificial insemination services were provided by the provincial livestock division.

The body condition score was lowest in February ($\bar{X} \pm SD$) 4.16 ± 1.31 and highest in October 4.91 ± 1.19 . Average age at first calving was 829.94 ± 42.70 day ($n=50$), interval from calving to the first estrus was 39.84 ± 22.09 days ($n=31$), conception per service was 1.38 ± 0.59 ($n=25$), the average time for placental discharge was 4.40 ± 22.09 hours ($n=57$) with 9.09 percents of retained placenta and the average calving interval was 378.54 ± 51.02 days ($n=63$). The average first and second lactation periods were 283.20 ± 53.00 and 257.64 ± 45.19 days and milk yields were

1,212.19+594.08 and 1,461.00+37.32 kg. (n=48 and 25) respectively.

The average loan from BAAC was 220,000 baht/family with interest rate of 11.50% per year. In the first year, the farmers did not have to pay interest, in the second year they must pay 40 percent of their income from dairy production. They must pay back all their debt within 10 years. In the first year return to land and labor was 6,254.75 baht/year. In the second year, return to land and labor was 8,620.70 bath/year which was calculated after payment of 40 percent of interest to the bank. Estimated full cost of milk production was 13.02 baht/kg. After ten years of operation the farmers could not repay all their debt. However, they could pay their debt over the annual interest from the sixth year onward.