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JINTANA YHOUNG-AREE : RELATIONSHIP BETWEEN HOUSEHOLD STRUCTURE, HOUSEHOLD RESOURCES AND DAIRY FARM PRODUCTION : A CASE STUDY IN NAKHON PATHOM. THESIS ADVISORS : PHILIP GUEST, Ph.D., BOONLERT LEOPRAPAI, Ph.D., SUREEPORN PUNPUING, Ph.D.
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The survey was conducted in two hundred and four active dairy farms (DFs) under administration of the dairy cooperatives of Nakhon Pathom and Kamphang Saen. The objective was to determine the relationship between household structure, household resources and DF production. Quantitative and qualitative data collection techniques were employed using semi-structured questionnaire, interview guide and observation checklist as research tools. The study focused on two aspects of DF production, namely cleanness of raw milk indicated by total plate count (TPC) and income from DF. Ordinary least square regression analysis was employed to test two main models. The model of the cleanness of raw milk determinants was undertaken prerequisite to those of determinants of annual income from DF. The findings showed that the TPC indicator had a median value of 8.5×10^5 colony forming units. Overall, 55 per cent of raw milk was rated as a poor grade. The median of DF income was 110,500 Baht per year. This farm income comprised 61.4 per cent of total annual median income 196,500 Baht.

In the model of the cleanness of raw milk determinants, there were two sets of independent variables encompassing farming resources and management. In the former set, open well and underground/municipal water have strong effects on the cleanness of milk. This effect is shared by child labor which indicated a significant negative relationship between number of child workers and grade of milk yield. In performance of the DF, farmers who were able to implement knowledge taught by stock technicians produced significantly cleaner yield than those who relied on informal sources. The latter set of factors indicated that, in reference to using mixed techniques, farms that milked cows by a single method, either hand or machine, were significantly more effective in depressing bacterial growth. The recognition of hygiene in the areas of troughs, floors of milk spaces and drainage systems has a strong effect on the improvement of milk cleanness. Ignorance of quality control showed a weak effect on the level of TPC. Finally, the longer the time elapsing from finishing milking to milk transporting, the poorer the grades of milk yield. The model pointed out that existing technical knowledge was inadequate to improve farming skills to the level that can explicitly result in an acceptable cleanness of milk.

In the model of determinants of annual income from DF, household size had negatively significant relationship with DF income. Families whose workers worked in only DF or in DF plus other agricultural job had significantly higher income than those who also worked in non-farm jobs. Under the constraints of land and initial capital, small farmers were able to increase total income by working in farm and non-farm jobs. The higher the total income, the higher the DF income. In relation to available resources, DF return was significantly affected by open well water. The model showed a significant positive relationship between herd size and DF income. Including the participation of child labor there were 3.1 workers per farm. This number did not strongly affect DF income. The number of child laborers tended to improve DF income in this model. The cleanness of milk yield illustrated adverse effect on DF income because TPC levels most frequently fell into the poor qualities. Overall, the managerial variables have weak effects. This was due to insufficient quality of human capital. The model indicates that under the constraints of capital and land, dairy farmers maximized dairy farm returns through sectoral patterns of labor as a fundamental strategy in order to acquire capital for inputs. It was also suggested that the quality of water supply and human capital were two crucial factors affecting the dairy farm return which urgently need to be improved.