**Economic efficiency of milk production farms in Hanoi Suburbs, Vietnam**

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Dairy production has presented in Vietnam since 50 years, but these dairy farms really developed from 2001. In the period 2001 – 2010, the average growth rate of dairy herds was up to 30% per year. However, fresh milk production satisfies about 20-25% of milk consumption. The rural areas of Hanoi Province are large for dairy production. This province builds the 7 agro-ecological sub-regions for the development of dairy farming, in which Ba Vi District is a most of sub-regions for dairy production development. But the average size is about 2.5 cows per farm. This research aims to better understand how the factors in milk sector adapt to current economic conditions in Hanoi suburbs through analyzing farming systems. These studies were conducted from January to August 2012 on 43 dairy farms with different production scales at Ba Vi District to characteristic of dairy farming systems. The data were collected by interviewing and keeping records at the farms that have milk production. The results showed that three dairy production systems in these zones: (1) Dairy small farming system has from 1 to 3 cows per farm; (2) The medium farming system has from 4 to 5 cows per farm; and (3) The dairy intensive farming system has more 5 cows per farm.

The economic activities were really diversified with landless per household farm such as rice production, gardens, grass production and sylviculture. Land resources per farm of intensive farming system were largest including 9,239 m² for garden around the household; 2,574 m² for rice land; 563 m² of grass area and 3,325 m² for sylviculture. While the small farming system has the lowest potential land, each household has only 2,815 m² of garden; 1,795 m² of rice land; 2,095 m² of grazing land. The medium farming system has about 3,150 m² of garden; 2,220 m² of rice land and 3,891 m² of grazing land.

Milk production cycle was quite long with intensive farming system, up to 324 days comparing with 299 days per cycle with medium farming system and to 306 days per cycle with small-scale farmers. This difference was not statistically signification (P> 0.05).

Average milk production yield per cow was high with medium farming system (16 kg per cow per day) in comparison with 15 kg per day at intensive and small farming systems (P> 0.05). Milk production yield has been improved in the past years with crossbreed cows such as Holstein-Friesian 50% and 75%. But this productivity was still considered to be lower than the milk production yield with dairy cows raised in Moc Chau District under Son La Province with 20.5 kg per cow per day and 6,250 kg of milk per cow per cycle).

In addition, in the period from 2006 to 2012, fresh milk prices at farm gate have continued to rise for the farmers, while feed prices increased in the period from 2006 to 2010 and these feed prices were stable between 2011 and 2012. In the period of 2006 to 2012, fresh milk prices at farm gate increased from 0.17 USD per kg in 2006 to 0.60 USD per kg in 2012 and feed prices were from 0.15 USD per kg in 2006 increasing to 0.39 USD per kg in 2012.

The net incomes were calculated per a cow per year reached 1,274 USD with the small-scale farming households to 1,476 USD with medium farming system. The net income per kg of fresh milk at farm gate obtained from 0.28 USD with small farming system to 0.31 USD with medium farming system.

The net household income was high from dairy production, from 2,437 USD per farm per year with small farming system to 5,487 USD per farm per year with intensive farming system. The net labor family income gained from 997 USD per active per year with small farming system to 2,757 USD per active per year with intensive farming system.

Thus, dairy production farms in recent years in Hanoi Suburbs provide very high economic efficiency for farmers in comparison with other agricultural activities at the farms. This explains why the rate of dairy family farming has grown very fast in the studied zones in the period from 2009 to 2012. This trend will continue to grow in the future. This research was also showed that the price of fresh milk plays a crucial role for profitable at farm level. But medium farming system with the size from 4 to 5 dairy cows per farm is more profitable with current economic conditions at farms.

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