

Factors Influencing Milk Yield, Quality, and Revenue of Dairy Farms in Southern Vietnam

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Abstract : Dairy production in Vietnam is a relatively new agricultural activity and milk production increased remarkably in recent years. Smallholders are still the main drivers for this development, especially in the southern part of the country. However, information on the farming practices is very limited. Therefore, this study aimed to determine factors influencing milk yield and quality (milk fat, total solids, solids-not-fat, total number of bacteria, and somatic cell count) and revenue of dairy farms in Southern Vietnam. The collection of data was at the farm level; individual animal records were unavailable. The 539 studied farms were located in the provinces Lam Dong (N=111 farms), Binh Duong (N=69 farms), Long An (N=174 farms), and Ho Chi Minh city (N=185 farms). The dataset included 9221 monthly test-day records of the farms from January 2013 to May 2015. Seasons were defined as rainy and dry. Farms sizes were classified as small (< 10 milking cows), medium (10 to 19 milking cows) and large (\geq 20 milking cows). The model for each trait contained year-season and farm region-farm size as subclass fixed effects, and individual farm and residual as random effects. Results showed that year-season, region, and farm size were determining sources of variation affecting all studied traits. Milk yield was higher in dry than in rainy seasons ($P < 0.05$), while it tended to increase from years 2013 to 2015. Large farms had higher yields (445.6 kg/cow) than small (396.7 kg/cow) and medium (428.0 kg/cow) farms ($P < 0.05$). Small farms, in contrast, were superior to large farms in terms of milk fat, total solids, solids-not-fat, total number of bacteria, and somatic cell count than large farms ($P < 0.05$). Revenue per cow was higher in large compared with medium and small farms. In conclusion, large farms achieved higher milk yields and revenues per cow, while small farms were superior in milk quality. Overall, milk yields were low and better training, financial support and marketing opportunities for farmers are needed to improve dairy production and increase farm revenues in Southern Vietnam.

Keywords : farm size, milk yield and quality, season, Southern Vietnam

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