Dairy Goat Production in Thailand

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Abstract The distribution of goat population in Thailand is associated with the areas where Thai Muslims live; the southernmost region and outskirts of Bangkok. The dairy goat sector is relatively new and small compared to other species. The number of dairy goats is estimated below 10% of the total number of goats of approximately four hundred thousand heads. Importation of exotic dairy goat breed of Saanen was in 1948 and other dairy goat breeds were imported by private companies and government agencies. Saanen is the most popular among dairy goats due to its high milk yield, mainly found in central and southern regions. Other dairy breeds found in small numbers are Toggenburg, Alpine and Anglo-Nubian and their crossbreds with Thai native goats. The number and popularity of dairy goat have been slightly increased in the ten years. The average of dairy goat farm size is around 15 - 20 goats per farm. The sizes of dairy goat farm are different in different regions. The majority of the goat milk producers have other main occupations in crops such as rubber or oil palm plantations and fruit orchards. The goats feed on natural grass or weed plants in garden plots. Annual goat milk production in Thailand is estimated very low ranging from two to five thousand tons per year compared to approximately a million tons of cow milk. Goat milk production is only 0.35% of cow milk. The price of raw goat milk in 2013 was around 60 Baht (2 US$) per kg which was approximately 3.3 times higher than that of cow milk (18 Baht). Market demand of goat milk consumption is expanded. Cosmetic and other value added products have been created as an alternative to drinking milk. There is a potential to improve dairy goat raising in Thailand through genetic and breeding improvement together with feeding, reproduction and biotechnology. Emphasis is on increasing body weight, improving reproductive efficiency and reducing losses due to mortality through better nutrition and breeding.

Keywords Thailand, Dairy Goats, Production

1. Current status of dairy goat farming in Thailand

1.1 Dairy goat population. Goat raising has long been associated with Thai Muslim communities. The distribution of goat population is associated with the areas where Thai Muslims live; the southernmost region and outskirts of Bangkok. The dairy goat sector is relatively new and small compared to other species including meat goat. The distribution of goats is rather related to demographic than climate conditions. The number of dairy goats is estimated below 10% of the total number of goats in Thailand of approximately four hundred thousand heads. Importation of exotic dairy goat breed of Saanen for the first time was in 1948. However, goat milk was not popular during the time of first introduction. Later, the Department of Livestock Development (DLD) imported Saanen goats from Australia and Netherlands to the country in 1984-85 and other dairy goat breeds were imported by private companies. The number and popularity of dairy goat have been slightly increased from the last decade. According to the livestock population survey by the center of information technology DLD [1], Fifty-four percent of the total 440,277 goats were in the Southern part of Thailand, most of which were the Thai native goats. However, Central Thailand recorded a rapid increase over the last decade, primarily as a result of the development of commercial goat farms to cater for the demand in around Bangkok areas. The latest statistic shows that about 36% of goats in Thailand are found in the central with the remaining 10% located in the Northern and Northeastern regions. Dairy goat production has been quite small and stable with a possibility to grow slowly.

1.2 Breeds of dairy goats. Goats in Thailand are predominantly used for meat (more than 90%). Milk production is a relatively small industry (less than 10%). Native goats are genetic resources that can be crossed with exotic breeds to produce rangeland goats for more extensive production. There are eleven existing goat breeds in Thailand: two native and nine exotic breeds. There are
four meat type breeds and four dairy type breeds. The two local goat breeds are the Northern Native Thai goats referred to as ‘Bangala’, which has a large but thin body, long pendulous ears and a straight face profile, and the other is the Southern Thai Native goats which are small in size with short upright ears. Five dairy goat breeds are Saanen, Alpine, Toggenburg, Shami and Laoshan. Saanen is the most popular among dairy goats due to its high milk yield, mainly found in central and southern regions. Other dairy breeds are found in small numbers.

Performance data of dairy goats of Saanen, Toggenburg, Alpine and Anglo-Nubian and their crossbreds with Thai native from one of the Government farms reported from 1438 records of year 2004-6 the average overall milk per day was 0.9 kg, starting from 1.10±0.43 kg in the first month of lactation to 1.05±0.41 and 0.89±0.34 kg in the 2nd and 3rd months, respectively [2]. Thepparat also reported quite low average milk produced per day from different breed combination groups raised in a state owned livestock breeding station in the Southern part of Thailand ranging from 0.79 kg per day in a Thai Native – Anglo Nubian crossbreds to 1.38 kg per day in Toggenberg crossbred group [3]. The weaning weights of purebred Saanen, Anglo Nubian, and Thai native goats were 16.4, 14.6 and 8.5 kg, respectively. A private organic dairy goat farm in Phuket province reported a higher daily milk production of 2-3 kg for a lactation period of 200 days.

1.3 **Farm size.** The overall average of dairy goat farm size in the Thailand is around 15 - 20 goats per farm. The sizes of dairy goat farm are different in different regions. The larger and more modernized farms are found in the central part around Bangkok areas. According to 2011 survey, the farm sizes of dairy goats in the central part of Thailand are larger than the rest of the country. Dairy goat farms in Central Thailand averaged 43 heads/farm compared the North (24 heads/farm), Northeast (14 heads/farm) and Southern Thailand (ranging from 5 to 7 goats/farm). Larger farm size indicates the operation of the farm as well that is a larger farm size tends to adopt a more intensive farming system.

1.4 **National milk production statistic.** Goat milk production in Thailand is not as popular as that of cow milk. Its production estimated from the number of milking does each year is from two to five thousand tons per year compared to approximately a million tons of cow milk produced per year, goat milk production is only 0.35% of cow milk. The price of raw goat milk in 2013 was around 60 Baht per kg which was approximately 3.3 times higher than that of cow milk (18 Baht). The prices of goat milk range from 40 to 80 Baht per kg in recent years.

1.5 **Consumers’ preference.** A study by Kulsatapornchai revealed that consumers in Bangkok Metropolis preferred UHT sweet milk in plastic bottle of medium size (200-300 cc) [4]. One bottle/packet was bought at a time from a convenient store or a supermarket. They learned about the nutrition value of the product from the television and the radio. The study revealed that the significance level of factors encouraging the consumers to drink instant goat milk were the standard signs, while the price was moderately important. The convenience of buying was moderately important. The study also reported the four most favorite flavors ranging from highest to lowest were fresh, sweeten, chocolate, and honey goat milk. Types of dairy goat products ranking according to people preferences were UHT 54%, pasteurized 35% and yogurt 7%. Three top reasons not to buy and drink goat milk were; the taste, goaty flavor and high price.

2. **Production system**

2.1 **Production, feeding and housing.** Most goat milk producers have other main occupations in crops such as rubber or oil palm plantations and fruit orchards. The goats feed on natural grass or weed plants in garden plots. More advanced farmers have a better understanding of animal health and dairy farm management. Typically farmers raise 2 to 30 goats per family with a cut and carry method of feeding. In smaller farms with a few goats, goats are let out grazing and roaming freely
in the rubber plantations or areas around the house. Some feed stuff widely used for dairy goat feeding system are soy bean hush, soy tofu cake and palm kernel cake. Most dairy goat farmers have pasture of Pangola grass. Fresh oil palm leaves and silage are also widely used in the areas of palm plantations in the south. Since Thailand is located in a tropical area, especially the south, most farmers rear goats in high elevated wooden slatted lathe floor to keep goats away from dirt, moisture, droppings and parasitic worms. The house is mostly equipped with wind, rain, sun protection with good ventilation. The house is divided into farrowing stall, feeding stall, breeder goat, to make it easier for daily farm management applications.

2.2 **Health management.** Disease prevention in dairy goats in Thailand is provided by the department of livestock development (DLD). Vaccination against foot and mouth disease (FMD) is commonly practiced. Blood samples are taken routinely for brucellosis surveillance and prevention. The FMD vaccination and deworming program are recommended by DLD to prevent the disease. In addition to the vaccination program, DLD has been encouraging farmers to participate in standard farm project to apply for certification of good animal husbandry practices for dairy goat farm standard. The standard is for biosafety security and food safety to consumers.

2.3 **Challenges and solutions.** Goat milk is not a common part of the meal of most Thais except for some Thai Muslim and people with some health problem and wealthy people. Most people have aversion over the strong smell in goat milk. There is a limitation of suitable land and feed resources in some regions. Most farmers have inadequacy of knowledge and skills for dairy goat husbandry. Marketing is the weakness to be overcome by the promotion of goat product consumption and a variety of value added products to the market. In order to solve the problems mentioned above Thailand needs to increase the goat population both in quantity and quality. Establishment of effective goat breeding improvement programs is the key to success through the accuracy of identifying the best bucks and does through a well-planned breeding objective, selection and mating program specifically suitable for the environment and management in each region of the country together with the improvement of feeding, reproduction and biotechnology. Emphasis is on increasing body weight, improving reproductive efficiency and reducing losses due to mortality through better nutrition and breeding.

3. **References**


