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SOCIO-ECONOMIC STATUS AND ANIMAL DISEASE PREVENTION AND TREATMENT OF FARMERS IN CHIANG MAI

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Abstract : This report is a summary of the research disscussing the socio-economic condition of small livestock farmers in relation to their knowledge, understanding and health care of their livestock. Four villages in 4 districts in Chiang Mai Province, namely Sansai, Sankampaeng, Chomtong and Maetang were selected for this study during the production years of 1994-95. The research presents a clearer portrayal of the small livestock farmers, which it is hoped will be valuable for the promotion of livestock farming or livestock extension work conducted by the government as well as the private sectors in order to help increase the farmers' income as much as possible.

Index words : Socio-economic, Livestock production, Livestock farmer, Livestock disease

INTRODUCTION

Livestock production in Thailand has been significant to the country's economic system throughout the past two decades. Population expansion in Thailand has caused a greater demand for meat and dairy products. Expansion of the market abroad has also accelerated livestock production in the country (Thai Farmer Bank's Technical Section 1992 and Harrison and Tisdell, 1995).

Although household livestock production in the north has played an important role in the

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country's livestock production, the method of raising remained rather traditional and involved small investment, while farmers lacked technological knowledge and education, including adequate attention to tending of the animals. This resulted in an unfortunate loss of prospective income. The government was well aware of these problems and, therefore, encouraged setting up an Animal Health Programs to deal with prevention, reduction, control or eradication of livestock epidemic diseases.

In the previous years there was only a scant number of researches done on the relationship between the northern farmers' socio-economic condition and prevention and treatment of livestock diseases. Thus, it is truly essential to conduct a study of those aspects and it is expected that the knowledge gained from this research will be beneficial in planning related to production, livestock disease prevention and marketing.

MATERIALS AND METHODS

Primary data was collected during the production years of 1994-1995 through questionnaire applied to farmers in 4 districts in Chiang Mai Province which were Maetang in the north, Chomtong in the south, Sansai and Sankampaeng in the central. A village represented for each district was selected by the recommendation of district livestock officer. Animals that were of economic significance and were concerned in this study were beef cattle , pig, chicken and duck. Number of the sample households according to the groups of animals and districts are shown in Table 1.

Table 1 Number of the sample households.

District	No. of households who raised each type of animal			
	Beef cattle	Pig	Duck	Chicken
Sansai	2	1	5	10
Sankampaeng	2	2	2	11
Maetang	15	3	5	10
Chomtong	2	7	1	4
Total	21	13	13	35

In addition to primary data, this study also compiled information and data from various technical papers and article as well as from official documents. The major government information sources were District Livestock Office, Government Administration Agencies and Community Development Office in each district.

Descriptive analysis was to describe the general socio-economic condition, condition of the livestock and disease prevention methods was based on descriptive statistics. Also quantitative methods were used to show the relationship between the farmers' socio-economic condition and their animal disease prevention.

RESULTS AND DISCUSSION

Beef cattle / buffalo

Small group of cattle were raised in each household with the average of 2.7 animals/household (Table 2) . Only 2 households still had buffalos in a small number. In the past, cattle and buffalo were used for agricultural work. However, in the last few decades, the increasing in modern technology and mechanics has resulted in reduced demand for drought animals, particularly buffalo (Murphy and Tisdell, 1995a). Most farmers raised cattle for extra income and emergency reserved funds. They tended to feed their animals with roughage and seldomly with supplementary food (Table 3) which resulted in a low growth rate. The most common practical raising was to take cattle to graze in public places, namely along roadsides, public grazing land, crop fields after harvest time or in forest.

Problem in cattle raising of farmers included diseases, failure at insemination, slow growth and lack of food, especially in dry season. This was due to the farmers' lack of expertise and knowledge, particularly about how to treat their infected animals.The survey indicates that most farmers had their animal vaccinated in different frequency (Table 4) which serviced by livestock department. However, treatment of ill animals was still limited, only 57% of the illnesses were treated properly. Also, the number of livestock officials available to help the supervise them is still inadequate. Diseases found in cattle were Foot and Mouth disease, diarrhoea, fever and eye infection.

As for marketing, mostly the merchants would go to the farmers' houses to buy animals. The sale was usually agreed upon by selling the whole lot of animal, which put the farmers a some disadvantage as they did not know much about estimating the animal's weight. Statistical tests at the 95% significance level of reliability showed that the farmers' socio-economic status was related to their sources of knowledge on disease treatment. Thus, the thesis that if the farmers received proper knowledge from the right sources, their income from livestock sales should improve as well was accepted as true.

Table 2 Number of cattle and buffalo, objectives and duration of raising.

District	No.of sample	No.of cattle	No.of buffalo	Objective of raising					Duration of raising (Month)
				minor occupation	reserve capital	calve producing	field work	hobby	
Sansai	2	8	-	1	1	-	-	-	66
Sankampaeng	2	4	-	2	-	-	-	-	6
Maetang	15	10	1	8	1	4	1	1	28
Chomtong	2	35	7	1	1	-	-	-	126
Total	21	57	8	12	3	4	1	1	

Table 3 Feed for cattle raising.

District	No.of Sample	Food in rainy season					Food in summer				
		grass	straw or dried grass	com-plete feed	grass and straw	grass and com-plete feed	grass	straw or dried grass	com-plete feed	grass and straw	garss and com-plete feed
Sansai	2	1	-	-	-	1	-	-	-	1	1
Sankampaeng	2	-	-	-	2	-	-	-	2	-	-
Maetang	15	6	-	-	8	1	-	-	1	14	-
Chomtong	2	-	-	-	2	-	-	-	2	-	-
Total	21	7	-	-	12	2	-	-	5	15	1

Table 4 Cattle vaccine program.

District	No.of Sample	FMD				Haemorrhagic septicaemia			
		every 6 mo.	every 3 mo.	irregular	none	every 6 mo.	every 3 mo.	irregular	none
Sansai	2	1	-	1	-	1	-	1	-
Sankampaeng	2	-	-	1	1	-	-	-	2
Maetang	15	6	8	-	1	6	6	-	3
Chomtong	2	-	1	-	1	-	1	-	1
Total	21	7	9	2	3	7	7	1	6

Chickens

The native breed was the most popular beed (74.3% , Table 5) for smallholders because it was readily available, required little care and were preferred by consumers. 17.1% of farmers raised the native crossbred; bred from male native and female Rhode Island Red, and 5.7% of farmers raised the commercial crossbred. The native crossbred was promoted by the government as they tasted as good as the native and took a shorted period of raising. Among farmers interviewed, 45.7% raised chickens for income, 28.8% for consumption and 31.4% for both objectives (Table 5).

Table 5 Breed and number of chicken and objectives of raising.

District	No. of sample	Breed			No. of broiler	No. of laying egg chicken	No. of rooster	No. of hen	Objectives		
		native	native cross-bred	commer. cross-bred					in-come	consum-ption	both obj.
Sansai	10	7	3	-	51	-	9	59	8	-	2
Sankampaeng	11	8	1	2	27	26	2	5	4	5	2
Maetang	10	7	2	1	184	40	3	67	4	1	5
Chomtong	4	4	-	-	32	-	3	4	-	2	2
Total	35	26	6	3	294	66	17	135	16	8	11

Most of the investment involved feed and coop construction, and only a small amount on vaccination. This caused a large number of chickens became ill and died. 54% of farmers applied vaccine against some diseases, particularly Newcastle disease, but as many as 46.7% were still negligent in this matter (Table 6). Treatment for infected animals was often done by the farmers themselves based on their experience and advice of neighbors. Only 11% of the farmers had training on treatment of chicken diseases, which was arranged by government section about once a year. Ratanasethakul (1989) pointed out some important diseases of poultry in Thailand which were Newcastle disease, Fowl Cholera , Infectious Coryza, Fowl Pox and parasites.

Merchants would often come to the farmers' place to buy the chickens. Native breed chickens were usually sold for 40-45 baht/ kg., but the price tended to fluctuate. Statistical analysis showed that the amount of income from chicken sales was related to the frequency of farmer's training and his expenditure on chicken feed. Those who earned a lot received good training and provided better disease prevention and treatment to their chickens.

Table 6 Chicken vaccine program.

District	No.of sample	Newcastle			Fowl Pox			Infectious bronchitis		
		regular	irregular	none	regular	irregular	none	regular	irregular	none
Sansai	10	2	7	1	1	6	3	-	5	5
Sankampaeng	11	1	6	4	-	4	7	-	4	7
Maetang	10	3	3	4	2	2	6	2	2	6
Chomtong	4	-	3	-	-	-	4	-	-	4
Total	35	6	19	9	3	12	20	2	11	22

Ducks

Only 13 households in all survey villages raised ducks. The purposes of duck raising were egg and meat consumption and extra income. The most popular breed was Mandarin ducks as they could sell them for a better price than other breeds of ducks (Table 7). Duck feed was composed of rice hulls, rice bran, cracked rice, paddy rice and processed feed which could be obtained from local shops and mills and those outside the districts. The methods of raising were both by letting the ducks roam freely or by keeping them in their pens. Investment was basically on feed and facilities. The cost of feed was approximately 1,000-2,000 baht and facilities cost around 500-1,500 baht. Very little amount was spent on vaccination and medicine, only 7.69% of the farmers in Sansai district gave cholera vaccine to their duck (Table 8). This indicated that the farmers had no knowledge about disease prevention and the officials failed to disseminate knowledge about these matters. The problems commonly faced by duck raisers in the upper north were high cost of feed, their ducks destroyed their neighbors' vegetable gardens or got bitten to death by dogs, or death due to an unknown cause. These problems discouraged the villagers from duck farming. Most duck raisers sold their ducks to merchants from the same village or those from somewhere else; the buyers would come to their places. Mandarin ducks got a higher price than other breeds.

No problems concerning marketing of ducks were found. Relationship between economic conditions and disease prevention and treatment was found by the method of Cross-tab and variables that affected disease prevention and treatment were their major occupation and income from duck sales. Testing of the hypothesis that a good income farmer should have a better chance to acquire knowledge on prevention and treat-

ment of disease showed that the two had no relationship to disease treatment and prevention. This indicated that duck raisers in the study areas still lacked efficiency, which might be caused by their lack of knowledge about the prevention and treatment of diseases as well as funds to improve the unfavorable conditions for duck raising. Besides this, the relevant livestock promotion officials were not very competent and their methods might not have been very relevant to the socio-economic condition of the duck raisers.

Table 7 Breed and number of duck and objectives of raising.

District	No. of sample	Breed		No. of duck	Objectives		
		Mandarin	others		consumption	income	both obj.
Sansai	5	3	2	41	1	1	3
Sankampaeng	2	2	-	12	1	-	1
Maetang	5	4	1	96	1	2	2
Chomtong	1	1	-	35	-	1	-
Total	13	10	3	184	3	4	6

Table 8 Duck vaccine program.

District	No. of sample	Cholera vaccine		Duck plaque vaccine	
		yes	no	yes	no
Sansai	5	1	4	-	5
Sankampaeng	2	-	2	-	2
Maetang	5	-	5	-	5
Chomtong	1	-	1	-	1
Total	13	1	12	-	13

Pigs

The average number of pigs raised per household was 21.4±4.35. While the number of smallholders and number of pigs they raised were remained stable, pigs supplied by commercial piggeries have risen gradually (Murphy and Tisdell, 1995a). Crossbred pigs were the most popular (50%, Table 9) while native breeds were the second most popular (33.3%). The main purpose for pig raising was for sale. Most of them used processed feed bought in the villages. Major problems were diseases which caused death to their pigs. Over half of the farmers did not pay attention to vaccination (Table 10) or disease prevention (e.g. cholera, Foot and Mouth disease and worm treatment program). When disease occurred, they tended to give treatment by themselves and few of them consulted livestock officials or veterinarians. The most frequently occurring disease was Hog Cholera (38.98%), followed by Foot and Mouth disease (11.1%) and Pseudorabies (5.6%); the others (27.8%) were unidentified diseases. Murphy and Tisdell (1995b) reported that factors affected the spread of disease amongst pigs included an inability to identify the diseases, movement of sick animals, high density of pig population together with non-hygienic and poor sanitation.

Table 9 Breed of pig and objectives of raising.

District	No. of sample	Breed					Objectives	
		Landrace	Large white	crossbred	native	others	income	consumption
Sansai	1	-	-	1	-	-	1	-
Sankampaeng	7	-	1	5	-	1	7	-
Maetang	3	1	-	2	-	-	3	-
Chomtong	7	-	-	1	6	-	7	-
Total	18	1	1	9	6	1	18	-

As for marketing, merchants usually came to buy pigs at the farmers' places so there was little problem in this aspect. Most problems involved financial matters. Low prices usually resulted from pigs being under standard quality. However, farmers had a good attitude toward pig raising and 50% of them thought of expansion. Nevertheless, it also depended on the market prices of pigs.

An analysis of variables relationship showed that the expenditure on medicine and disease treatment was significantly related to the farmers' first occupation and amount of income from pig sales, and the number of infected animals. Therefore, solutions should be directed at their low levels of education and lack of proper understanding and interest in production.

Table 10 Pig vaccine program.

District	No. of sample	Foot and Mouth disease			Hog cholera			Deworm		
		regular	irregular	none	regular	irregular	none	regular	irregular	none
Sansai	1	1	-	-	-	1	-	-	1	-
Sankampaeng	7	2	2	3	-	4	3	1	4	2
Maetang	3	1	1	1	-	1	2	1	2	-
Chomtong	7	-	1	6	-	1	6	-	1	6
Total	18	4	4	10	-	7	11	2	8	8

SUGGESTIONS

Suggestions are given for domestic animals raising in the level of smallholders as follows :

1. Promotion of research and improvement of animal breeding to find the breeds that are suitable and efficiently raised in the area.
2. Providing knowledge and training about animal proper care, disease prevention and disease treatment to the farmers.
3. Development of livestock officials to enable to supervise the farmers.
4. Providing effective and low cost medicine to the farmers.
5. Promotion of government projects that encourage the farmers on livestock producing.

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