

The Use of Recommended Goat Husbandry Practices by Farmers in Southern Thailand

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ABSTRACT: The extent to which farmers use the recommended husbandry practices by farmers raising goats in southern Thailand was investigated. Base-line data was collected by interviewing 297 farmers and the constraints to the use of recommended husbandry practices were examined for these farmers in the Chana district, Songkhla province of southern Thailand. The number of farmers using the various recommended

husbandry practices was low. An extension program is needed to encourage the use of recommended goat husbandry practices in target areas of southern Thailand to provide a better understanding of the most effective goat husbandry practices.

(**Key Words:** Goat, Small-Farmer, Recommended Practices, Southern Thailand)

INTRODUCTION

Goats are widely distributed across all agro-ecological zones and their importance is reflected by their degree of adaptation, functional contribution (meat, milk, fibre and skin), socio-economic relevance (security, income generation and human nutrition) and their association with the rural poor in developing countries (Devendra, 1994). In southeast Asia the largest concentration of goats is found in Muslim communities (FAO 1991; Saithanoo and Huq, 1992).

Most goats in Thailand are raised in the southern region where the Thai-Muslim population is relatively high, especially in the area near the Thai-Malaysian border (Saithanoo and Pichaironarongsongkram, 1990). In this area, goats are traditionally raised by small farmers as a secondary enterprise in association with crop production or aquaculture (Saithanoo, 1992). However, there is also some large-scale commercial, intensive goat farming in southern Thailand. Goats are raised for home consumption and for additional cash income. They are mainly grazed on locally available natural grasses and weeds, with minimum inputs and health care.

Although research and development programs concerning goats are relatively few compared to those for other species, some government agencies have gradually put more emphasis to promote goat production in southern Thailand during the past decade (Saithanoo, 1991). However, little is known about farmer adoption of recommendations on goat husbandry practices to improve

production. This study provides base-line data on the problems and constraints to the use of recommended husbandry practices by farmers in order to develop effective extension programs on goat production in southern Thailand.

MATERIALS AND METHODS

The Chana district in the Songkhla province of Southern Thailand was selected as the study area because there is a greater number of farmers raising goats in this area in comparison to other districts. In addition, the district has an organized goat market each weekend.

For data collection, the names of a number of farmers who raised goats were collected and listed. Personal interview was employed as the method of data collection. Questionnaires were developed and tested. Interviews started at the end of September 1994 and lasted until the end of December 1994. Of the 522 farmers who raise goats, 297 were interviewed, representing 56.9 percent of the total population of farmers raising goats.

RESULTS AND DISCUSSION

Experience and reasons for raising goats

Most of the farmers involved in raising goats were relatively inexperienced. It was found that 50 percent of the farmers had three years of experience or less in raising goats; 30 percent had between four and eight years; and the remaining 20 percent had more than eight years. In terms of breeds, all of the farmers raised native

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goats. Some raised cross-breeds and exotic breeds in addition to the native strain. However, the number of farmers with cross-breeds was quite low. Most herds were rather small with 59 percent of the herds being three goats or less. Those who raised the large herds (six or more goats) also raised cross-breeds and exotic breeds. Most respondents raised the goats for sale, although a sizable percentage raised them for use in religious ceremonies and for home consumption (table 1). Raising goats was considered a minor occupation and a means of supplemental income.

Table 1. Experience and reasons for raising goats in the Chana district of southern Thailand

Attribute	Number (n=297)	Percentage
Years raising goats		
3 yrs or less	148	49.8
4-8 yrs	90	30.3
more than 8 yrs	59	19.9
Breed *		
Native	297	100.0
Cross-breed	6	2.0
Exotic breed	6	2.0
Herd size		
1-3	175	58.9
4-6	71	23.9
more than 6	51	17.2
Reasons for raising goats *		
For Sale	237	79.8
Use in religious ceremonies	140	47.1
Home consumption	113	38.0
Pleasure/hobby	26	8.7
Family reasons (given goat/s by relatives)	13	4.4

* More than one answer could be given.

Availability of shelter and slatted flooring

Most farmers did not have shelters available for their goats. Reasons for the lack of such shelter varied amongst farmers, with one-half of the respondents indicating they had too few goats to warrant providing shelter. Of concern was the 12 percent of respondents who indicated that they did not consider that shelter is necessary. Nearly three quarters of the farmers did not construct a slatted floor for goats to sleep on during the night. The reason given for not constructing slatted floors was that it was not

considered necessary, as "goats can sleep anywhere." In fact, a slatted floor for goats to sleep on during the night is quite important in providing better ventilation and sanitation.

Feeding practices

Few farmers used improved pastures or concentrates to enhance the nutrition of their goats (table 2). Approximately 59 percent used legumes, and 78 percent used tree leaves for feed. Farmers made use of improved pastures and/or concentrates as livestock feed in much lesser proportions than they used legumes and leaves.

Table 2. Use of feeding practices for goats in the Chana district of southern Thailand

Attribute	Number (n = 297)	Percentage
Feeds used *		
Improved pasture	11	3.7
Legumes	175	58.9
Leaves	231	77.8
Concentrates	21	7.1
Reasons for not using improved pasture (n = 286)		
Very difficult to grow	146	51.0
Too few goats	62	21.7
Insufficient grazing area	54	18.9
Sufficient native grass	24	8.4
Reasons for not feeding legumes (n = 122)		
Adequacy of native grass	75	61.5
Too few goats	16	13.1
Insufficient grazing area	15	12.3
Lack of time	10	8.2
Difficult to grow	6	4.9
Reasons for not feeding leaves (n = 66)		
Considered not necessary	40	60.6
Lack of interest and/or time	17	25.7
Very difficult to collect	9	13.7
Reasons for not feeding concentrate (n = 276)		
Considered not necessary	141	51.1
Lack of knowledge concerning "safety"	95	31.9
Cause diarrhoea?	3	1.0

* More than one answer could be given.

For those who did not use improved pastures, one-half considered that such pastures were very difficult to grow as they had no access to irrigation; 22 percent considered that they had too few goats to justify pasture improve-

ment; 19 percent felt they had insufficient grazing area for pasture improvement; and eight percent indicated that they had sufficient native grass, so pasture improvement was not necessary.

For those who did not use legumes, nearly two-thirds of the respondents indicated that they had adequate native grass, so there was no need to use legumes; 13 percent indicated that they had too few goats to justify using legumes; and 12 percent felt that they had insufficient grazing area for legumes. Leaves of trees such as the mango, jackfruit or luceana can also be used for feeding. This practice is quite widespread because farmers find it easy to obtain leaves of plants grown near their houses or on their farms.

For those who did not use leaves, approximately 60 percent mentioned that it was not necessary; 26 percent lacked time to collect leaves; and 14 percent indicated that leaves were too difficult to harvest. The perception that leaves were not necessary as feed is incorrect since leaves are generally a good source of nutrients including minerals and can enhance the health of goats. This should be clearly explained by district veterinary officers to those who raise goats so these people have a better understanding of the advantages of leaves as a feedstuff.

The majority of the farmers did not use concentrates a feedstuff (table 2). About one-half of these believed concentrates were not necessary as they are not "standard" goat feed, and about one-third did not know whether goats should or could eat concentrates. Farmers who either believed that concentrates were not "standard" goat feed or did not know whether goats should or could consume concentrates indicated that they had little understanding of the usefulness of concentrates. Thus, a crucial point in the task of extension officers is to provide a better understanding of the role of concentrates so farmers can gain a better appreciation of goat nutrition and the value of concentrates in raising goats.

Use of health improvement practices

The use of appropriate health management practices is a very important aspect of recommended practices for raising goats. However, most farmers in the study did not apply proper health improvement practices for raising their goats. Only about 10 percent of the farmers interviewed controlled either internal or external parasites. Less than 20 percent vaccinated their goats or supplied a mineral supplement (table 3). Of those farmers who did not use internal parasites control 81 percent considered that it was not necessary as their goats were in "good health"; 11 percent believed that their goats had no parasites; and eight percent were not interested in parasite

control. Approximately 90 percent of the farmers did not use external parasite control. There were various reasons for this: 59 percent said it was not necessary, as their goats were in "good health"; 30 percent were not interested in parasite control; and 11 percent believed that their goats had no parasites. Most of the farmers did not vaccinate their animals and the reasons given for not vaccinating roughly mirrored those to explain the lack of internal or external parasite control. Farmers in southern Thailand continue to have a negative perception about vaccinating goats and a number of farmers lack knowledge of vaccination procedures and techniques.

Table 3. Use of improved health practices for goats in the Chana district of southern Thailand

Attribute	Number (n = 297)	Percentage
Improved health practices used*		
Control of internal parasite	30	10.1
Control of external parasite	30	10.1
Use of vaccinations	36	12.1
Use of mineral supplements	49	16.5
Reasons for not controlling internal parasites (n = 267)		
Considered not necessary - "goats in good health"	218	81.6
Belief that goats do not have parasites	29	10.9
Not interested	20	7.5
Reasons for not controlling external parasites (n = 267)		
Considered not necessary - "goats in good health"	158	59.2
Not interested	80	29.9
Belief that goats do not have parasites	29	10.9
Reasons for not vaccinating goats (n = 261)		
Considered not necessary - "goats are in good health"	110	42.1
Drugs are not available	95	36.4
Lack of knowledge of proper use	56	21.5
Reasons for not using mineral supplements (n = 248)		
Considered not necessary - "adequate grass for feeding"	115	62.5
Lack of knowledge concerning "safety"	66	26.6
Do not have the minerals	27	10.9

* More than one answer could be given.

Most farmers did not use mineral supplements to enhance their goats' nutrition. Nearly two-thirds of the farmers mentioned that it was not necessary to provide mineral supplements, as there was adequate grass for the goats to eat; one quarter did not know whether minerals should be given; and the remaining 10 percent did not have access to minerals (table 3). Overall, it was clear that farmers in southern Thailand still have a low level of use and understanding of internal and external parasite control, vaccinations, and mineral supplements.

Goat selection and breeding

Goat selection and breeding are major issues for successful commercial production. One-half of the farmers in the study selected goats for breeding, but one-half did not. The main reason given was that natural mating was less complicated, so it was better than selective breeding. A lack of good breeding stock and the misconception that if one has good breeding stock that breeding outside of one's own herd or selective breeding within a herd is not necessary were also cited as obstacles to selective breeding. Obviously, most farmers surveyed did not understand the advantages of selective breeding. Most farmers used year-round mating systems, while only a

few used the recommended seasonal method. Of the farmers who used year-round mating, two-thirds mentioned that the time of mating depended on the estrous period, and one-third felt that natural mating would yield more kids (table 4). Although year-round mating might yield more kids than seasonal mating, it has a negative effect on the long-term growth and reproductive capacity of the female.

Knowledge of goat husbandry

Most farmers showed a good understanding of some of the fundamental aspects of raising goats. This was indicated by their responses to the questionnaire (table 5). For example, more than 80 percent responded that a slatted floor was a necessary part of the structure used to house goats during the night. The responses also indicated that most farmers knew that ill goats should be separated from the herd. Most also mentioned that vaccinations and the culling system were necessary. However, they often expressed the misconception that goats should be mated any time when they were in oestrus. It may be that the farmers think that to mate goats at any time will produce more kids over a year mating than them only during a restricted breeding period. Only one-third mentioned that kids should be mated when they were more than one year old. These last two responses suggest that most farmers did not appreciate that if kids are mated at less than one year of age, or at any time when they are in oestrus, this can adversely affect growth and reproductive capacity.

Table 4. Use of selection and breeding methods, Chana district, southern Thailand

Attribute	Number (n = 297)	Percentage
Goat selection		
Do not select for breeding	150	50.5
Select animals for breeding	147	49.5
Reasons for not selecting (n = 150)		
Natural mating is less complicated	117	78.0
Do not have breeding bucks and does	16	10.7
Belief own breeding stock is adequate	13	8.7
Herd is too young for selection	4	2.6
Goat breeding		
Year-round mating	266	89.6
Seasonal mating	31	10.4
Reasons for using year-round mating (n = 266)		
Depend on fertility status of goats	180	67.7
Belief that it will yield more kids	86	32.3

Extension and planning for farm expansion

Farmers tended to use personal local sources of information rather than personal external sources to obtain information on farm practices. This is quite common in rural societies in Thailand (Pattamarakha, 1986; Saleegaset, et al., 1994). Less than 10 percent of the respondents had experience to disseminate new knowledge they may have acquired. This could be the result of remoteness, where farmers live relatively far from each other, which coupled with low education could make farmers less confident and more reluctant to advise other farmers.

Planning for farm expansion is an aspect of development for commercial purposes, and fewer than one-half of the farmers interviewed had made plans for expansion. The main reasons cited in support of planning for farm expansion were that it would be easy to manage an expanded area, market accessibility would be improved and better prices could be gained because greater numbers of goats would be sold. Thus, price incentives were a major factor in promoting farm expansion. Limited areas, a lack of time and insufficient labor were cited as the

Table 5. Knowledge of preferred goat husbandry practices in the Chana district of southern Thailand

Statement	Number (n = 297)	Percentage	Statement	Number (n = 297)	Percentage
1. Is construction of shelter necessary?			6. In goat breeding, it is recommended to mate animals:		
(A) *Necessary	290	97.7	(A) *During oestrus periods	62	20.9
(B) Not necessary	1	0.3	(B) Anytime when goats are in oestrus	235	79.1
(C) No opinion	6	2.0			
2. Goat housing at night is best:			7. With goat selection, it is recommended to select only:		
(A) On the ground	8	2.7	(A) No need for selection	49	16.5
(B) *On a slatted floor	267	89.9	(B) *Healthy goats	248	83.5
(C) Anywhere	22	7.4			
3. During gestation:			8. For buck selection, it is recommended to use		
(A) *Grass or supplements should be fed	236	79.5	(A) Within a herd	78	26.3
(B) Nothing extra needs to be fed	35	11.8	(B) *Outside a herd	219	73.7
(C) No opinion	26	8.7			
4. Sick goats in the herd:			9. Are vaccinations necessary?		
(A) Can be kept with the herd	18	6.1	(A) *Necessary	259	87.2
(B) *Should be separated from herd	265	89.2	(B) Not necessary	14	4.7
(C) No opinion	14	4.7	(C) No opinion	24	8.1
5. For good management, is deworming necessary?			10. At what age should female kids be mated:		
(A) Not necessary	17	5.7	(A) Less than one year	102	34.3
(B) *Necessary	255	85.9	(B) *More than one year	101	34.0
(C) No opinion	25	8.4	(C) Any time when they are in season	94	31.7
			11. Is a culling system necessary?		
			(A) *Necessary	254	85.8
			(B) Not necessary	43	14.2

* Correct answer.

major constraints to farm expansion by those farmers who had no plans for expansion. The aspect of limited areas cannot easily be solved, as rural people have relatively large numbers of children, approximately four to five per couple, and as a result, their land may have to be subsequently sub-divided into smaller pieces. Regarding a lack of time, farmers are usually poor and obtain only a small income from their farms, and thus sometimes work outside their village. This results in little or no time for raising their goats. Insufficient labour is primarily a result of the migration of the younger adult family members to cities and towns in search of employment. This leaves many farms in the care of the older adult members of the family with insufficient labour to manage expansion activities.

Marketing

Most goats are sold directly from the farm, with less than 10 percent sold at the market. Of those farmers selling from the farm, 62 percent mentioned that it was convenient because local merchants had approached them

at their farm, and 38 percent who had small herds indicated the high costs of transportation to take goats to market was a problem. For those who sold at the market, over three quarters mentioned that they received the best possible price, as they were able to strike the best deal with local merchants; the remaining farmers gave proximity to the market as the main reason.

CONCLUSIONS AND RECOMMENDATIONS

Most farmers who raise goats are small farmers and the main reason given for raising goats was for additional income. Little use is made of technically sound modern goat husbandry practices. Access to markets for goats is possible at all times, but most goats are sold from the farm rather than at the market, often for the sake of convenience. Farmers are able, but are somewhat reluctant to pass on what new knowledge of goat husbandry they have to other farmers. Relatives and neighbors are the primary source of information on raising goats.

In order to communicate and encourage the use of

modern sound goat husbandry practices, the following recommendations are made:

1. Group meetings should be organized, covering all areas in the district, so farmers can exchange ideas to improve goat husbandry practices. Ideas can then diffuse through the process of contact during participation in group meetings.

2. Extension programs on the use of recommended farm practices should be organized to provide more opportunities for farmers to learn about raising goats for commercial purposes.

3. Farm demonstrations should be established to compare product yields from the application of recommended husbandry practices to yields obtained under current husbandry practices. Interested farmers should be given the opportunity to participate more in farm demonstrations.

4. Appropriate health medical materials and seeds for pasture establishment should be provided to those who need them and are prepared to improve their goat husbandry and management practices.

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