

Development and technology transfer of goat production for small farmers in the Northeast of Thailand

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Summary

A feasibility study on goat production for small farmers in the Northeast of Thailand was made. Selected farmers were trained in the principles of goat production technology. Three females and one male were introduced to 40 trained families in the Northeast. The goats were raised by farmers using either cut and carry or grazing system. Number of goats of each family was estimated. The total cost and income were also evaluated based on the number of goats. After 3 months, each farmer was also evaluated concerning ability for goat management. The results showed that the farmers had an income higher than inputs at the beginning of the second year. Each family had a net income which was 622.18 \$ per year after two years. Farmers seemed to have the ability to take care of their goats. The overall performance of goats, feeds and feeding and management were categorised from fair to good. The health condition of the goats was good. It can be concluded that goats can be an alternative ruminant for farmers in the Northeast region. More training and close advice should be given to improve the quality of goat production at small farmer level.

Keywords: goat production, small farmers, northeast of Thailand

Introduction

Goats are small ruminants, which have a high potential to utilize low quality roughage. Goats can adjust well and consume natural feedstuffs. Currently goats are raised by the Muslim people in the southern part of Thailand, but the number of goats in the country is still low and goat meat production is lower than the requirements of the consumers. Northeast of Thailand is classified as a hot and dry region of the country. Many researchers have recommended an introduction of goats to the farmers in the northeast region based on the high productivity per year and high ability to utilise low quality roughage which is available in this region. The objective of this on-farm trial was to study the feasibility of goat production in small farms in the northeast of Thailand.

Training and technique development

Small farmers in Nong Lue (40 km west of Khon Kaen) were interviewed and selected based on their potential ability to manage goat production. Using criteria such as availability of land, labour and feeds, 40 families were selected to participate in the project. Farmers were trained in the principles of goat production. The training course was done in the village and included principles of goat production, feeds and feeding, physiology and reproduction, health and health care and marketing. After the training course, each farmer prepared housing, equipment and feeds prior to receiving 3 females and 1 male goat. Project staff visited and gave advice once a week during the study period. The condition of the goats was evaluated after 3 months. Economic return was also evaluated and discussed between farmers and project staff.

Results and discussion

General information

Rice was the major crop of the farmers. All selected farmers also had other animals such as native chickens, ducks, pigs, buffalo or cattle. There were approximately 5 people in the family. None of the selected families had raised goats, before but showed an interest in this new

alternative ruminant. Farmers know that goat has a ability to utilise low quality roughage, and most farmers raised their goats by grazing or cut and carrying natural grass or plants.

Evaluation of goat performance

Goat production in each family was evaluated after 6 months. The goat house, performance, feed availability, pasture condition and health were evaluated using a score of 1 to 4 (4=excellent; 1=poor). Overall condition of the goat houses was between fair and good (average 2.3) Feed availability score was approximately 2.3, while roughage availability was between 1 and 1.8 and feed supplement 2.1. Pasture and pasture management score was 2.4. Male goats were healthier (score 3.3) compared to females (score 2.7). Kid condition score was between fair and good (2.7). The farmers need to give more attention to feeds and feeding management to increase the number of kids/litter.

Possibility of economic returns

Numbers of goat produced per family was evaluated (Table 1) under the assumption that one female produces 2-3 litters per year and each litter has 2 kids. The number of goats from Table 1 was used to evaluate costs and incomes for production (Table 2). After discussion between the farmers and the project staff, each family was recommended to keep the female kids and sell all males at 6 months of age (50 kg live weight). According to the land, labour and roughage availability no more than 12 female goats were recommended for each family. Farmers were also recommended to replace the male goat every third year.

The total annual cost of goat production in each of the first 3 years was \$810, \$711 and \$799, respectively. Total cost of production was the same after two years. Net income for the first three years was \$652, \$78 and \$622, respectively, and net income was the same (\$622 per year) after two years. The price of a male goat was approximately \$39 (\$0.7 per kg and 50 kg live weight). According to this assumption, the farmer should have a higher income than input already in the second year.

Conclusions

Goat production technology could be introduced and transferred to farmers in Northeast Thailand with good results. The overall management and feed management were classified between fair and good. Health care was good. The feasibility study showed that each family had a net income of \$78 in the second year and \$622 after two years. More research is needed to evaluate the potential of the market and the acceptance of goat meat of the consumers in the region

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References

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Table 1. Average number of goats produced within 5 years

Number of goats	Year										To- tal
	1		2		3		4		5		
	a	b	a	b	a	b	a	b	a	b	
Parent stock											
males	1	1	1	1	1	1	1	1	1	1	1
females	3	3	8	8	12	12	12	12	12	12	12
On-farm production	4.5	4.5	12	12	18	18	18	18	18	18	141
Replacements	2	3	4	0	0	0	0	0	0	0	9
Goats for sale	2	2	8	12	18	18	18	18	18	18	132

a = first 6 months of the year; b = last 6 months of year

Table 2. Estimates of costs and incomes (\$) in goat production over 5 years (38 Bahts/\$)

Cost	Year 1		Year 2		Years 3 to 5		Total Year 1-5
	a	b	a	b	a	b	
Housing	18.4	-	-	-	-	-	18.4
Parent stock	242.1	-	-	-	-	-	242.1
Suppl. for parent stock, \$01/head/d	19.2	19.2	43.2	62.4	62.4	62.4	518.7
Suppl. for new born goats, \$0.01/head/d	21.6	21.6	57.6	57.6	86.4	86.4	577.2
Medicines, \$0.52/head	4.5	4.5	8.4	8.4	11.6	11.6	95.3
Vaccine (\$0.13/head)	1.1	1.1	2.1	2.1	2.9	2.9	23.8
Mineral block (\$0.73/block)	1.5	1.5	3.7	3.7	5.2	5.2	41.3
Labour (2h/d)	153.9	153.9	153.9	153.9	153.9	153.9	1539.5
Total cost	539.3	270.8	346.0	365.2	399.4	399.4	3156.2
Total income	78.9	78.9	315.8	473.7	710.5	710.5	5210.5
Net income	-460.3	-191.8	-30.2	108.5	311.1	311.1	2054.3

Goat price was \$39 per head (50 kg); a=first 6 month of the year; b=last 6 months of year

