การพัฒนาประสิทธิภาพการผลิตโคเนื้อของเกษตรกรรายย่อย ในอำเภอชาติตระการ จังหวัดพิษณุโลก

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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาสถานภาพในการผลิตและกำหนดแนวทางในการผลิตโคเนื้อของเกษตรกรรายย่อยในกลุ่มผู้เลี้ยงโคเนื้อ ตำบลบ้านดง อำเภอชาติตระการ จังหวัดพิษณุโลก จำนวน 60 รายจากการเลือกกลุ่มตัวอย่างแบบเฉพาะเจาะจง โดยใช้แบบสอบถามในการเก็บข้อมูลสถิติที่ใช้ ได้แก่ ค่าเฉลี่ย ค่าร้อยละ ค่าสูงสุด ค่าต่ำสุด และค่าเบี่ยงเบนมาตรฐาน ผลการศึกษาพบว่าเกษตรกรผู้ที่เลี้ยงโคเนื้อ มีอายุเฉลี่ย 48.90±8.02 ปีส่วนใหญ่สำเร็จการศึกษาในระดับชั้นประถมศึกษา (75.00%) และใช้แรงงานในครัวเรือน (100%) โคเนื้อที่เลี้ยงส่วนใหญ่เป็นพันธุ์ลูกผสมชาโรเล่ส์ (90.00%) เกษตรกรส่วนใหญ่ (92.00%) ใช้การผสมเทียมจากเจ้าหน้าที่กรมปศุสัตว์ และไม่มีการจดบันทึกภายในฟาร์ม (75.00%) รายได้หลักมาจากการเลี้ยงสัตว์ (87.00%) เกษตรกรผู้เลี้ยงโคเนื้อมีต้นทุนการผลิตเฉลี่ยตั้งแต่แรกเกิดและรายได้จากการจำหน่าย เท่ากับ 3,925.00±1,075.25 และ 20,000±9,123.86 บาทต่อตัว ตามลำดับ ดังนั้นจึงทำให้เกษตรกรจะมีกำไรจากการเลี้ยงโคเนื้อเท่ากับ 16,075±7,523.74 บาทต่อตัว สำหรับการกำหนดแนวทางในการพัฒนาการผลิตโคเนื้อ โดยทำการประเมินผลเกษตรกรโดยใช้แบบทดสอบวัดความรู้และวิธีการปฏิบัติในการผลิตโคเนื้อ พบว่าเกษตรกรส่วนใหญ่ (51.80%) มีระดับความรู้และวิธีการปฏิบัติในการผลิตโคเนื้อ อย่างไรก็ตามความรู้และวิธีการปฏิบัติในการผลิตโคเนื้อของเกษตรกรต้องได้รับการส่งเสริมปรับปรุงแนวคิดและการปฏิบัติที่ถูกต้อง ซึ่งจะช่วยให้เกษตรกรสามารถเพิ่มผลกำไรในการผลิตโคเนื้อ และนำมากำหนดแนวทางในการพัฒนาการผลิตโคเนื้อโดยภาครัฐและเอกชน ควรมีการส่งเสริมและสนับสนุนในการผลิตโคเนื้อดังกล่าวด้วยเช่นกัน

คำสำคัญ: การผลิตโคเนื้อ การพัฒนาประสิทธิภาพ เกษตรกร

EFFICIENCY DEVELOPMENT OF BEEF CATTLE PRODUCTION OF SMALL SCALE FARMERS IN CHATTRAKAN DISTRICT, PHITSANULOK PROVINCE

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Abstract

The objectives of this research were to study the current status of beef cattle production and to study the approaches, and to evaluate the effectiveness of process on beef cattle production. The purposive samples used by a questionnaire were 60

farmers in Tambon Ban Dong, Chat Trakan District, Phitsanulok Province. The used statistical techniques were arithmetic mean, percentage, minimum, maximum and standard deviation. Results showed that the farmers' average age was 48.90±8.02 years, most farmers (75.00%) had primary school educational level and used only family members labour (100%). The primarily types (90.00%) of beef cattle were Charolais crossbred. Most farmers (92.00%) preferred to breed their cows by artificial insemination from government officials. Most farms (75.00%) did not keep records in this population. The majority of beef cattle farmers (87.00%) depended on their beef cattle business as the sole source of income. An average cash cost and income of beef cattle production was 3,925.00±1,075.25 baht per cattle and 20,000.00±9,123.86 baht per cattle, respectively. So that income compensation of farmers in selling beef cattle was 16,075.00±7,523.74 baht per cattle. The guidelines in developing of beef production were derived from questionnaires asking farmers' know ledge and performance. Most farmers (51.80%) had the highest score of knowledge and performance. However, the results suggested that farmers' knowledge and performance on beef cattle production need to be promoted as a way to improve the accuracy of decision made by farmers because it could lead to increase compensation of beef cattle production. The approaches in developing beef production should include government and organization supporting trainings on beef production.

Keywords: beef cattle production, efficiency development, farmers

Introduction

Thailand is a tropical country in Southeast Asia (53° 7′ to 20 °27′ North latitude, and 97 °22′ to 105 °37′ East longitude). The weather in this country generally has high temperature (23.1°C to 29.6°C) and high humidity (66% to 81%) (Thai Meteorological Department, 2013). According to Department of Livestock Development (2012), the main beef cattle region is the Northeast where 50% of the whole country, followed by Central, Northern and Southern, respectively. However, Northern Thailand had an estimate of 1,143,794 cattle (18% of the whole country) raised in 109,344 cattle households (11% of the whole country).

Under the current economic and social situations, which they have full of competitions, increasing efficiency in beef cattle production with high quality and quantity of meat by using low cost of production would create more profit to the farmers. According to this, efficiency development of beef cattle production is necessary. It would help the farmers to manage their limited resources and opportunities to be suitable for their beef cattle production more efficiently. This information would help the government or organizations provide supports to the

farmers more appropriately and effectively. Thus, these studies were created in order to study the current status of beef cattle production, to study the approaches, and evaluation of the effectiveness process in beef cattle production in the Northern part of Thailand.

Materials and methods

A total of 60 farms are located in Phitsalulok Province, Northern part of Thailand. Farms are in Amphor Chat Trakan (16° 31′ 23″to 17° 44′ 31″ North latitude and 99° 52′ 27″ to 101° 04′34″ East longitude). The total studied area is 1,586.2 km^2 and consists of 39,759 people (average 25.0 people/ km^2). Seasons are winter (cool and dry; November to February), summer (hot and dry; March to June), and rainy (hot and humid; July to October).

A questionnaire covering the areas of beef cattle production, reproduction and selection of sire and dam, feeding and nutrition of animals, educational experiences, and income and expenses of farms was written by experts from the Major of Animal Science, Faculty of Food and Agricultural Technology, Pibulsongkram Rajabhat University, Phitsanulok province, Thailand in April of 2013. The questionnaire contained three types of questions of 1) multiple choices, 2) fill in the blank, and 3) choose all that apply. The questionnaire was pre-tested randomly in twenty beef cattle farms in the studied area. After changes made for improving its clarity, copies of each questionnaire were made and randomly distributed to the beef cattle farmers. The questionnaires that filled with answers from the farmers (60 farms) were collected. The answers of the questionnaires got from individual farms were transformed to a numeric format and then recorded that could be used for data analyses in an Excel spreadsheet.

Descriptive statistical analysis was applied to describe the characteristics of beef cattle production systems. The data were analysed using the Statistic Package for Social Sciences SPSS-PC (SPSS Inc., 1999). The data from analysis were transformed according to the problems and the need of beef cattle farmers. The guidelines in developing of beef production were derived from questionnaires asking farmer's knowledge and performance.

Results and discussion

Farmers and farm characteristics

In this study, the average age of famers was 48.90±8.02 years, ranging from 31 to 72 years old, and 61.67% of those famers were males. The level of education was mainly primary school (75.00%). These values were close to those of the beef cattle farmers in Northeast Thailand reported by Lambertz et al. (2012). Farmers used only family members labour (100.00%). These results were similar to the studies of Lambertz et al. (2012) ;

Suppadit et al. (2006), which indicated that the labour management on the farms, a shortage of labour force was a major problem and constraint of small-scale livestock farms nowadays. This is mainly caused by the migration of employees to peri-urban and urban areas, especially the young generations. Therefore, the different household activities on livestock farms are widely carried out by women, children and older people (Skunmun et al. 2001). The main incomes of most famers were from livestock production (86.67%), followed with horticulture or agronomy (10.67%), and else (1.66%), respectively (Table 1).

Table 1 Farmers and characteristics of beef cattle farmers

Variable	Number	Percentage
Household		
- Male	37	61.67
- Female	23	38.33
Education of farmers		
- No education	2	3.33
- Primary school	45	75.00
- High school	13	21.67
- Bachelor degree or higher	0	0
Labour		
- Hired people	0	0
- Family member	60	100
Main income		
- Livestock production	52	86.67
- Horticulture or agronomy	7	10.67
- Others	1	1.66

The average area in each farm was approximately 26.45±12.71; ranging from 6 to 60 acres. The average number of beef cattle in each farm was 18.48±9.95; ranging from 5 to 60 cattle. The largest group of beef cattle presented in these farms was crossbreds contained Charolais crossbreds (90.00% of the whole population) and other crossbreds (10.00% of the whole population) (Figure 2). Other breeds fractions presented in this population were Brahman, Tak and Thai Native. Most farmers (92.30%) preferred to breed their cows by artificial insemination from government officials rather than private organization (7.70%). Most famers in this population (75.00%) did not keep farm records, while only 25.00% of famers kept farm records. Most of the farmers (86.50%) had areas for grasses or legumes. Feeding and nutrition management of the farms varied among seasons. Grasses presented in this region were *Brachiaria mutica* (para grass), *Brachiaria ruziziensis* (ruzi grass), *Pennisetum purpureum* (napier grass) and *Panicum maximum* (guenni grass). Most farmers (57.00%) cut and carried these forages

for their cattle and also prepared pastures for grazing. The other farmers did only cut-and-carry (39.00%), or prepared pasture for grazing (4.00%). During dry seasons (winter and summer), when green roughage was limited normally by lack of irrigation, then rice straw, hay, and silage were used as supplements. The farmers used concentrate that consists of cereal, grains, rice bran, mung bean, soybean meal, minerals, vitamins, and the by-products of various milling and industrial plants (i.e., cotton meal, oil palm meal, and coconut meal). Concentrates were from home-mixed (6.30% of the farmers) or purchased ready-mixed feeds (90.60% of the farmers).The dairy cows were vaccinated against Foot and Mouth Disease (FMD), and drugs were given against parasites twice a year.

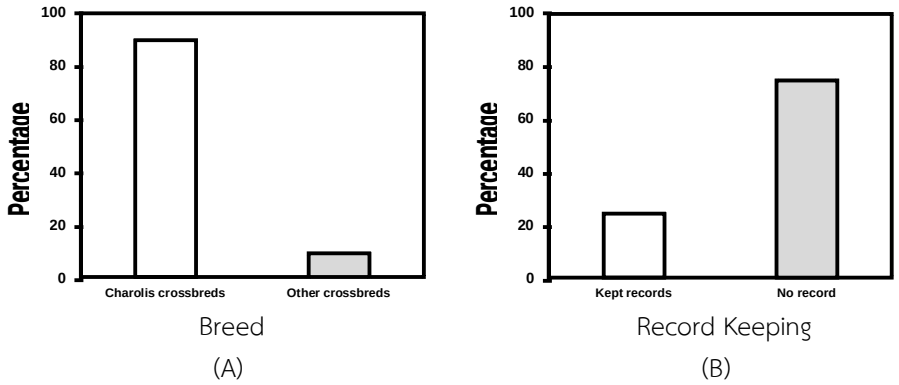

Figure 2 Percentage for breed (A) and record keeping (B) of beef cattle farmers

The majority of beef cattle farmers (87.00%) depended on their beef cattle business as the sole source of income. An average cash cost and income of beef cattle production were 3,925.00±1,075.25 baht per cattle and 20,000.00±9,123.86 baht per cattle, respectively. So that income compensation of farmers in selling beef cattle was 16,075.00± 7,523.74 baht per cattle.

Determination developing and training beef cattle farmers

The analysis of the data from the survey and questionnaire of farmers found that most beef cattle farmers in this population lacked knowledge and incapability of managing beef cattle farms so that beef production efficiency was relatively low. Therefore, in order to improve the production efficiency of beef cattle farmers, training and technology in beef production, and management should be transferred to beef production. These findings suggested that the approaches in developing beef production should include government-supported trainings on beef production.

Moreover, the guidelines in developing of beef production were derived from questionnaires asking farmers' knowledge and performance. The results showed that

knowledge and education on how to treat the farmers in the production of beef cattle. By the level of knowledge and practical way to produce beef were as follows: those who got the highest score is 17-20 points, Much is 13-16 points, Moderate is 9-12, Less is 8-5 and the lowest score is 4-0. Most farmers had the highest score of knowledge and performance (51.80%), following with most (43.90%) and moderate (4.30%). The average of knowledge and performance was 16.31±1.40 and ranging from 12.00 to 20.00. However, results suggested that farmers' knowledge and performance of beef cattle production need to be promoted as a way to improve the farmers' accuracy of decision making, which could lead to increase the compensation of beef cattle production.

Conclusion

The average age of beef famers was 48.90 years. Most of the farmers had primary school educational level and used only family member labour. The primary types of beef cattle were Charolais crossbred. Most farmers preferred to breed their cows by artificial insemination from government officials. Most farmers did not keep records. The majority of beef cattle farmers depended on their beef cattle business as the sole source of income. An average cash cost and income of beef cattle production was 3,925.00±1,075.25 baht per cattle and 20,000.00±9,123.86 baht per cattle, respectively. So that income compensation of farmers in selling beef cattle was 16,075.00±7,523.74 baht per cattle. These findings suggested that the approaches in developing beef production should include government supports on beef production trainings. Most farmers had the highest score of knowledge and performance. However, results here suggested that farmers' knowledge and performance of beef cattle production need to be promoted as a way to improve the accuracy of decision made by farmers because it could lead to increase the compensation of beef cattle production. In order to improve farmers' livelihoods and develop sustainable farming systems in Thailand, the changing economic circumstances of beef cattle production should receive more attention from researchers, governmental institutions and stakeholders.

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