

Key Success Factors of Thai Indigenous (Pradu Hangdam) Chicken Breeder Raising of Networking Farmers at Maesai Sub district, Rongkwang District, Phrae Province, Thailand

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ABSTRACT: The aim of this study was to identify the key success factors of Thai indigenous chicken breeder raising in Phrae province, Thailand. Data were collected from four small holder farmers in October 2013 to September 2014. The results showed that all farmers were raised parent stocks in semi-intensive system. They had loosed chickens form natural enemies more than other. The average hen day egg production percentage were 29.08%. The hatchability of natural and artificial incubation were 62.65% and 67.90%, respectively. The average total and cash cost of day-old chicks (DOC) production were 38.96 and 27.18 baht per head. The lowest cash cost per chick was 13.67 baht. The sale value of day old chick was 24 baht per head. Only one of farmer had income over cash cost 7.95 baht per chick. The factors that encouraged to successful in raised parent stocks were (1) personal knowledge and skill; farmers were applied raising method and farm management that suitable for them, (2) discipline and carefulness in raising; chickens were healthy and continuous produced products, (3) adequate area was available to ensure desired of chickens, and (4) using local materials for produced diet were reduced diet cost resulted to more income.

Keywords: Key Success Factors, Indigenous chicken Breeder, Pradu-Handdam

Introduction

Pradu-Handdam had performance were better than local indigenous chickens. They easiness raising, body weight at 16th week of age were 1,561 g/head, low mortality rate, average eggs were 135/hen/year, hatchability were 89.2% (Leotaragul *et al.*, 2011). The average cost of day-old chick (DOC) production were 13.83 baht per head and margin per unit were 4.22 baht per chick (Kiratikankul *et al.*, 2012). The production cost and margin of fattening chicken were 60.73 and 22.60 baht per kilogram, respectively (Malaithong and Supra udomleungtreerat, 2013). In addition, they had distinct trait which were different from broiler in term of nutrition and taste. In the present, there is a dramatic increase in Pradu-handdam meat demand but the farmers can't produce them sup-

plied those demand due to day-old chick for fattening are inadequate. The increasing of new breeder raiser will be increased the amount of Pradu-Handdam chicks and consequently its meat into the markets. However, the new raiser must had knowledge and skill about breeder management, proper egg incubation and hatchery, production cost and obstruction. Thus, this study were presented key success in breeder raising of farmers in Maesai Sub district, Rongkwang District, Phrae Province, Thailand.

Materials and Methods

This study was collected data by used questionnaire and participatory observation from four farmers in raising methods, breeder management, the problems and obstruction of raising. The data

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(breeder performance, cost and return) were reported in descriptive statistic. This study was conducted during October 2012 to September 2013.

Result and Discussion

Four farmers raised breeder produced chicks to sell to neighbor in Maesai Sub district and other area in Phrae province. They begin on raising 3 months of age Pradu-hangdam breeder in semi-intensive system. The first 3 month, they were fed with diet for young breeder (ME 2,800 Kcal., CP 18%). In production phase, they fed with breeder diet (ME 2,750 Kcal., 17%). Some of them also fed the roughage (such as banana stem and other kind of plant in local area). The key success factor of Pradu-Hangdum breeder raising as follow;

The production performance of breeder

The overall livability for entire rearing period were 58.50% as shown in **Table 1**. The livability calculated on Farmer II and Farmer IV was 80%

and 74%, respectively. The livability in this study consistent with the livability at raising of 79.9% by farmer as reported by Intharachote *et al.* (2008). The cause of low livability (28% and 52%) in this study were careless, died from disease and natural enemy and culling due to cripple.

The average eggs production were 29.08% (**Table 1**). Farmer II produced eggs were 39.69 eggs/hen/6 months and higher than Pradu-Hangdum were raised in village (35.2 eggs/year) which reported by Intharachote *et al.*, (2008) and consistent with eggs production from native hens reared in village (41.58 eggs/hen/6 months) reported by Tangtaweewipat *et al.*, (2008).

The average day-old chicks production were 745 bird/farm with average natural and incubator hatchability of 62.65% and 67.90%, respectively. The used of incubator increased approximately 5% more chick than natural incubation. Besides, it's found that the average fertile egg of breeders were 81.33%.

Table 1 Production performance of Pradu-hangdam

Variable	Farmer I ^{1/}	Farmer II	Farmer III	Farmer IV	Total/average
Breeders (head)	50	100	100	100	350
Livability (%)	28	80	52	74	58.50
Eggs production (eggs)	-	3,175(29.07)	2,112(29.23)	2,771(28.93)	8,058/2,686
Hatchability by hens (%)	-	64.17	-	61.13	62.65
Hatchability by incubator (%)	-	78.59	70	55.12	67.90
Fertility (%)	-	84	84	76	81.33
Day-old chicks	-	1,670	70	1,240	2,485/745

^{1/} Non available data because hens ate eggs

The cost of day-old chick production

The average total cost and cash cost of DOC production were 38.96 and 27.18 baht per head, respectively. The most of production cost were variable cost at 96.20% (**Table 2**). Three important

costs structure were feed at 49.68%, labor at 24.42% and purebred breeder at 7.59%. The analysis of cash cost showed that the feed cost of each farmer were different due to the use of their own feedstuff and local roughage in the diet.

Table 2 Cost structure in chick production

Cost structure	Farmer I		Farmer II		Farmer III		Farmer IV		Average
	Baht	%	Baht	%	Baht	%	Baht	%	
1. Fixed cost	1,360	2.58	3,243	5.61	2,025	3.44	1,975	3.58	3.80
2. Variable cost	51,432	97.42	54,570	94.39	56,764	96.56	53,168	96.42	96.20
2.1 breeder	1,050	1.99	6,000	10.38	4,650	7.91	5,550	10.06	7.59
2.2 feed	24,638	46.67	23,576	40.78	27,847	47.37	35,232	63.89	49.68
2.3 labor	18,250	34.57	18,250	31.57	13,688	23.28	4,563	8.27	24.42
2.4 misc..	7,494	14.2	6,744	11.66	10,580	17.99	7,824	14.19	14.51
Total cost	52,792	100	57,813	100	58,789	100	55,143	100	100
Cash cost	33,548	63.55	28,716	49.67	44,357	75.45	49,712	90.15	70.47
Total cost per head			34.61				44.47		38.96
Cash cost per head			13.67				40.09		27.18

Income

The total income from selling egg, DOC and manure had lower than total cost. All of them had average economic loss at 18.42 baht per head

(ranged from 9.23 to 18.42 baht/head, **Table 3**). However, the cash income of farmer II was higher than each other with profit at 13,284 baht or 7.95 baht/head.

Table 3 Return in chick production

	Farmer I (Baht)	Farmer II (Baht)	Farmer III (Baht)	Farmer IV (Baht)
Total income (eggs, chicks, manure)	400	42,400	8,536	32,296
Cash income	-	42,000	8,136	31,896
Economic net profit (or loss)	(-52,392)	(-15,413)	(-50,253)	(-22,847)
Cash income profit (or loss)	(-33,548)	13,284	(-36,221)	(-17,816)
Economic net profit (or loss) per head	-	(-9.23)	-	(-18.42)
Cash income profit (or loss) per head	-	7.95	-	(-14.36)

Conclusion

Key success from this study by participatory observation and focus group showed that:

1) Knowledge and skill; the farmers had knowledge and more experience in indigenous chicken raising from training and practice. They can applied knowledge and technique from training to their own farm management that suitable for them.

2) Discipline and carefulness in raising; the farmers maintained house for strength and protect chickens from enemies, included with discipline and carefulness in raising, checked regularly chickens health, fed adequate diet and they must had vaccination program.

3) Adequate raising area (3-5 m² per head) was available to ensure desired of chickens. The suitable house and fence could be help control the spread of disease, and protect natural enemies.

4) Using locally available materials for construction and feed reduced the cost of production and consequently increased more income. Such as farmers II were used bamboos and wood from old house for building and repairing the house, they also were used by-products from planting or local feed ingredient to mixed the diet.

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