Buletin Peternakan Tropis
Bulletin of Tropical Animal Science
Doi: https://doi.org/10.31186/bpt.5.1. 55-62

Bul. Pet. Trop. 5(1): 55-62, 2024
e-ISSN: 2722-0788
p-ISSN: 2722-1733

Populasi, Produksi, dan Skenario Pengembangan Ayam Hutan Merah Endemik Rejang Lebong

(*Rejang Lebong Endemic Red Jungle Fowl Population, Production and Development Scenarios*)

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Dikirim (*received*): 19 Maret 2024; dinyatakan diterima (*accepted*): 12 April 2024; terbit (*published*): 31 Mei 2024. Artikel ini dipublikasi secara daring pada
https://ejournal.unib.ac.id/index.php/buletin_pt/index

ABSTRACT
The chicken endemic in Rejang Lebong Regency, Bengkulu Province, called burgo chicken, is the result of a cross between red jungle fowl and native chickens. The research aims to evaluate the production potential, population and population development scenarios of burgo chickens. The research was conducted in Rejang Lebong Regency, Bengkulu Province for 3 months. Fifteen breeders obtained using the snowball sampling method were used in this research. Data was obtained through interviews, filling out questionnaires, and observation; namely egg production, chick production, and population. Data is tabulated, discussed descriptively, and population development scenarios are prepared. The results of the research showed that the burgo population was 92 hens, 55 roosters, 17 hens, and 20 chicks. The productive hen was 13, producing 43.76 eggs/hen/year, a total of 744 eggs/13 hen/year, 386 (51.88%) were incubated by the hen, and 340 eggs (88.08%) hatched. In conclusion, egg production per individual is quite high, chick production is low, and population development is slow due to the low number of eggs laid, high chick mortality, being eaten by predators, sold and consumed by breeders. The scenario for increasing population and production is to increase the number of hens, the number of eggs laid, reduces mortality, protects chickens from predators, and improves rearing management.

Key words: Burgo Chicken, Production and Population, Development Scenarios

ABSTRAK
Ayam endemik di Kabupaten Rejang Lebong, Provinsi Bengkulu yang disebut ayam burgo merupakan hasil persilangan antara ayam hutan merah dengan ayam kampung. Penelitian bertujuan untuk mengevaluasi potensi produksi, populasi dan skenario pengembangan populasi ayam burgo. Penelitian dilakukan di Kabupaten Rejang Lebong, Provinsi Bengkulu selama 3 bulan. Lima belas peternak yang diperoleh dengan metode *snowball sampling* digunakan dalam penelitian ini. Data diperoleh melalui wawancara, mengisi kuisioner, dan observasi; yaitu produksi telur, produksi anak ayam, dan populasi. Data ditabulasi, dibahas secara deskriptif, dan disusun skenario pengembangan populasi. Hasil penelitian, populasi burgo adalah 92 ekor ayam terdiri dari ayam jantan 55 ekor, induk ayam 17 ekor, dan anak ayam 20 ekor. Induk ayam produktif berjumlah 13 ekor, menghasilkan telur 43,76 butir telur/induk ayam/tahun, total 744 butir telur/13 induk ayam/tahun. Jumlah telur dieram induk ayam adalah 386 (51,88%) dan 340 butir telur (88,08%) menetas. Kesimpulan, produksi telur per individu cukup tinggi, produksi anak ayam rendah, dan perkembangan populasi lambat yang disebabkan oleh rendahnya jumlah telur dieram, tingginya kematian anak ayam, dimakan predator, dijual dan dikonsumsi oleh peternak. Skenario peningkatan populasi dan produksi adalah

meningkatkan jumlah induk ayam, jumlah telur dieram, menurunkan angka kematian, melindungi ayam dari predator, dan memperbaiki manajemen pemeliharaan.

Kata kunci: Ayam Burgo, Produksi dan Populasi, Skenario Pengembangan.

INTRODUCTION

Red jungle fowl is a biological resource that lives in nature and is found in several regions in Indonesia, such as Java, Bali, West Sumatra, South Sumatra (Rahayu, 2002) and Bengkulu (Sutriyono *et al*., 2016). Secondary forests, plantation crops, transitional areas or agricultural cultivation areas are their habitats. Some of the plantation crops that are favored by red jungle fowl are oil palm plantations, tea plantations and coffee plantations, but they prefer to live in secondary forest areas that are converted to agricultural land (Collias and Collias, 1967). In their habitat, the red jungle fowl has eaten whole grains, insects, larvae, worms, leaves, fruit, roots, and tubers (Rahayu, 2002), tapioca roots (Collies and Saichuae, 1967) bamboo flowers and palm nuts and grasshoppers (Nishida *et al*., 1975), and rubber nuts (Abdullah and Babjee, 1982). The parts of plants eaten by the red jungle fowl are the soft shoots and fleshy leaves and young fruit. The parts of plants eaten by the red jungle fowl are the soft shoots and fleshy leaves and young fruit (Arshad *et al.*, 2000). While the animals eaten by red jungle fowl are beetles, earwigs, spiders, leeches and isopods (Arshad *et al.*, 2000), termites and ants (Medway and Wells, 1976; Arshad *et al*., 2000).

Red Jungle Fowl are threatened by habitat destruction, poaching, egg collection, predation, and genetic hybridization (Peterson and Brisbin, 1999). Some of the red jungle fowl predators include leopards, mongoose, bobcat, hawks, owls, lizards and snakes. Snakes, lizards, rodents, small carnivores consume eggs and chicks (Subhani *et al.*, 2010). In addition, the threat of extinction of red jungle fowl is genetic contamination by interbreeding with domestic chickens and pure red jungle fowl (Setianto *et al.*, 2015; Anonim, 2009). Red Jungle Fowl are classified as least concern (LC) in the IUCN Red List of 2007 (Setianto *et al.*, 2016). Conservation of red jungle fowl has not been carried out, both in situ and ex situ so that the preservation of the red jungle fowl is not guaranteed. Conservation of red jungle fowl has not been implemented either in situ or ex situ, but the community has domesticated and raised red jungle fowl. The red jungle fowl has been domesticated several thousand years ago (West dan Zhou, 1988). Domestication has led to phenotypic changes that affect behavior, performance, physiology and reproduction (Belteky *et al.*, 2016) changes in morphology and produces several new species in a relatively short time (Price, 1999). Two important things related to behavior are the frequency and intensity of behavior. Domestic animals, especially domestic chickens, are less active and less exploratory compared to their ancestors, but crow more (Schutz *et al*., 2001; Vaisanen *et al*., 2005). Currently, domesticated chickens have been bred and directed for production, such as laying hens (Rauw *et al*., 1998; Setianto *et al*., 2015b). Chickens are reared to maximize the ratio between egg production and feed consumption (Kerje *et al*., 2003). Laying hens can produce about 300 eggs per year, while a red jungle fowl can produce 15-20 eggs per year (Romanov and Weigend, 2001). In Bengkulu, the domestication of red jungle fowl was carried out by the community by taking red jungle fowl from the forest by hunting in the forest by using tools such as nets and racit and catches the form RJF male (Setianto *et al.*, 2015c). Domestication is one red jungle fowl utilization, in which

there are elements of utilization and protection. Protection was done by feeding, prevention and eradication of diseases, provide a cage for chickens to live in, and protection from predators (Sutriyono *et al.*, 2016). Meanwhile, the benefits of red jungle fowl for people who raise red jungle fowl and their offspring are as genetic resources, food sources, ornamental animals, and as attractive chickens in hunting (Sutriyono *et al*., 2016a). In Rejang Lebong Bengkulu, domestication of red jungle fowl has produced offspring of red jungle fowl called burgo chickens or Rejang chickens, which are the result of cross breeding between male red jungle fowl and female native chickens (Setianto *et al.*, 2014). Burgo chicken is one of an endemic fauna in Sumatra island especially Bengkulu province. The Burgo chicken is a descendant of the red jungle fowl, and the chicken is found in Bengkulu province, South Sumatra and Jambi provinces (Putranto, *et al.*, 2017). Chickens resulting from cross breeding are raised by the community for economic purposes, hunting chickens and ornamental chickens. In order to provide a higher benefit to the community, the Rejang chicken or the burgo chicken needs to be increased in population and production. Several limiting factors for developing local chickens are slow growth, high mortality and low production (Hidayat and Asmarasari, 2015; Nataamijaya, 2000; Ketaren, 2010).

Until now, the condition of the population and production of chicken burgo or chicken Rejang is not known with certainty. However, it is suspected that population development is very slow and production is low. This study aims to evaluate the conditions of the population and production and compile a population development scenarios.

MATERIALS AND METHODS

This research was conducted for 3 months in Rejang Lebong Regency, Bengkulu Province, Indonesia. At that location, many people raise Burgo Chicken. In addition, research related to burgo chicken has never been carried out in that location. Respondents in this study were all people who raise burgo chicken. Respondents were selected using the "snowball sampling" method. The first stage is to select one of the respondents whose address is already known, then their identity is recorded. The next respondent was obtained based on the first respondent, then visited and recorded their identity. The third respondent and so on were obtained based on this method. Based on the survey, respondents obtained 15 breeders of burgo chicken. The data collected includes primary data and secondary data. Perimer data collected were population, egg production, chicks production. Secondary data is respondent characteristics, number of chickens raised and population structure, burgo chicken rearing techniques, and general condition of the research location. Data were collected through in-depth interviews and filling out questionnaires and location observations. Data from the survey locations were tabulated and presented in tabular form, then scenarios were compiled to increase the population growth rate, and discussed descriptively.

RESULTS AND DISCUSSION

General Condition of Research Sites

Rejang Lebong District, Bengkulu Province, Indonesia is located at 2°22’07’’-3°31’ SL and 102°19’-102°57’ EL, and consists of 15 sub-districts and 156 villages. The area of Rejang Lebong Regency is approximately 1550.28 square kilometers, and the capital of Rejang Lebong Regency is Curup. Wavy land conditions with a land slope of 0-40% (BPS, 2024). The physical condition of the land is flat to bumpy.

Based on the Rejang Lebong Regency RPJMD Plan for 2021-2026, Rejang Lebong Regency is in the hilly area of the Bukit

Barisan Mountains, 72.82% is at an altitude of 0-1000 m above sea level, and the rest is at an altitude of above 1000 meters above sea level. Land in Rejang Lebong district is used for plantations (68.78%), natural forests (24.81%), dry land agriculture (4.65%), rice fields (2.09%), settlements (1.94%) and the rest is open land, bushes, water bodies. Rejang Lebong Regency is influenced by two seasons, namely the rainy season which occurs in December-March and the dry season which occurs in June-September. Meanwhile in April-May and October-November is a transition or transition period with an average rainfall of 233.75 mm/month, with an average number of rainy days of 14.6 days/month in the dry season and 23.2 days/month in the rainy season. In general, Rejang Lebong Regency is an area with a wet tropical climate with an average air temperature of 23.9°C. Rejang Lebong Regency has a minimum air temperature of 22.9°C and a maximum air temperature of 24.8°C with air humidity ranging from 80 percent up to 92 percent. In these conditions, various types of poultry can be found growing and breeding, including red jungle fowl and their offspring.

Respondents Characteristics

Respondents in this study were 15 burgo chicken breeders and were found in 4 sub-districts, namely South Curup sub-district, East Curup sub-district, North Curup sub-district, Central Curup sub-district. Respondents less than 50 years old are 73.33% and more than 50 years old 26.67%, with 40% undergraduate education, 33.33% graduating from senior high school and the rest are graduating junior high school and elementary school. The livelihoods of the respondents are civil servants as much as 46.6% and the rest are private jobs. Respondents raised burgo chickens for hobby and ornamental chickens (60%), for breeding burgo chickens (26.67%), and business (13.33%). Respondents raised burgo chickens on the perch (33.33%), chickens were released during the day and night (26.67%), chickens were kept in cages at night and released during the day (20%), and chickens were caged day and night (6.67 %). In relation to raising chickens, some respondents chose the perch method. Raising chickens by perching is only done on ornamental chickens and roosters and roosters for hunting. Rearing like this is more secure and controlled, food and drinking are easily provided, prevention and treatment of disease is easy. On the other hand, some breeders choose how to raise chickens by releasing them in their yards. Some of their reasons are (1) chickens can look for and choose feed, so that by releasing the chickens will get enough feed according to taste, (2) Chickens still have wild characteristics, according to their natural habitat, the chickens are more free to carry out activities and foraging for food, (3) not having adequate cages. Breeding chickens by releasing them in nature, the safety of chickens is not guaranteed, it is difficult to control and feed is not provided by the farmer.

Production and Population

The population of burgo chickens in the study location was 92 consisting of 55 roosters, 17 hens and 20 chicks. The average number of burgo chickens raised by the respondents was 6.13 chickens. Respondents who raise burgo hens are 6 breeders, with the aim of increasing the burgo chicken population. Based on the survey, the results showed that the total egg production of 17 hens was 744 eggs/year or 43.76 eggs/hen/year (Table 1).

Sutriyono *et al.* (2016) reported that the production of red jungle fowl offspring in North Bengkulu Regency was 19.11 eggs/hen/year. This difference was caused by the difference in the frequency of egg laying. In this study the egg laying

Table 1. Population and Production of Rejang Lebong Endemic Red Jungle Fowl

No	Variable	Value	Percentage (%)
1	Number of chickens burgo breeders	15	100
2	Respondents raise hens	6	40
3	The average hen raised per respondent	2.17	
4	Chicken burgo population	92	100
	a. Rooster	55	59.78
	b. Hen	17	18.48
	c. Chicks	20	21.74
5	Egg laying frequency per year	4.17	
6	Egg production per hen per year	43.76	
7	Total egg production per year	744	100.00
8	The eggs are hatched	386	51.88
9	Production of chicks per year	340	88.04
10	Production of chicks per hen per year	20	
11	Production of chicks from egg production	340	45.70

frequency was 4.17 times/year, while the egg laying frequency in Bengkulu Utara was 2.17 times/year. The low frequency of laying eggs could be caused by differences in the management of raising burgo chickens. Warnoto (2001) reported that traditionally raised burgo chickens will produce 14 to 18 eggs/hen/period. Putranto (2011) reported that the production of burgo chickens which are reared intensively with katuk leaf supplements have produced 15-26 eggs/hen/8 weeks. The level of egg production is influenced by the level of katuk leaf supplements, if the katuk leaf supplement in chickens is increased, the egg production will increase. Therefore, the rearing of burgo chickens, especially feed management, has an effect on egg production. The chicks production of 17 hens is 340 chicks/year or 20 chicks/mother hens/year. This value is low, which of the 43.76 eggs hatched only produces 20 chicks or 45.70% of the total eggs (Table 1). The low production of chicks is caused by the low production of eggs and the low number of eggs being hatched, namely 51.88% of the total eggs. Sutriyono et al. (2016) suggested that the low production of chicks in the offspring of red jungle fowl is likely due to (i) low egg fertility, (ii) the number of eggs hatched is small, and (iii) poor hatching. When viewed from the size of the existing population and the number of children produced, it can be seen that the development is very slow.

Burgo's Population Development Scenario

The burgo chicken population tends to be static, where the population does not show any development. Putranto *et al.* (2017) reported that the burgo chicken population in Rejang Lebong Regency in 2010 was 95 chickens, consisting of 64 roosters and 34 hens. At different times, in the study population of 92 chicken burgo, with details were 55 roosters, 17 hens, and 20 chicks. The population is not much different, but the composition based on sex and age level of the chickens has changed.When viewed from the production of chicks (340 chicks) and the current population (92 chicks), it shows that the live rate of chicks is low, and the mortality rate is high.

The scenario for the development of the burgo chicken population in this study was carried out based on the variables that determine the rate of population increase and factors or variables determining the rate of decline.The determinants of the rate of increase in this

study were the number of hens, egg production per hen per egg laying period, egg laying period per year, number the eggs hatched, and the number of eggs hatched. While the determining variable determines the rate of decline is death, cut and consumed, sold, and lost and eaten by predators. In this study, to improve the development of the burgo chicken population is compiled in 6 scenarios which can be explained as follows: (i) Without a scenario, population development follows the previous pattern, (ii) Scenario 1: Increase the number of hen and other variables fixed, (iii) scenario 2: increasing egg production and other fixed variables, (iv) scenario 3: increasing production chicks and fixed variables, (v) scenario 4: increasing number of hen and egg production and other fixed variables, (vi) scenario 5: increasing egg production and chicks production and other fixed variables, (vii) scenario 6: reducing the declining rate number and increasing the ascending rate number.

CONCLUSION

In conclusion, the production and population of burgo chickens in Rejang Lebong districts is very low. The number of hens is 17 with egg production is 744 eggs/year and chicks production is 340 chicks/year. The final population of chicken burgo is 92 chickens. Population development scenarios by increasing the number of hens, increasing the period laying eggs, increasing the number of eggs being hatched, reducing the slaughter of productive hens and chicken mortality, and reducing sales.

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