

# PROSIDING INTERNATIONAL SEMINAR

*"The Role and Application of Biotechnology on  
Livestock Reproduction and Products"*

Hotel Pusako Bukittinggi, West Sumatra  
June 28-29, 2009



**Organized By:**

**Livestock Services of West Sumatra Province  
Jln. Rasuna Said No. 68 Padang  
June, 2009**

## SEMINAR PROGRAM

**Day-1 (Sunday, June 28, 2009)**

**Room: 1**

Time	Activities	Moderator/ Coordinator
14.00-19.00	Registration	Desrianti, Ir, Eka Syawalia (MC)
20.00-22.00	Wellcome Party	Edwardi, Ir., MM

**Day-2, June 29, 2009**

**Room : 1**

Time	Activities
09.00-09.05	Opening Speech of Chaiman OC Seminar: DR. Ir. Sarbaini, MSc
09.05-09.10	Opening Speech Head of Livestock Services of West Sumatra
09.10-09.25	Opening Speech Governor of West Sumatra
09.25-09.50	Opening Speech Ministry of Agricultural of Indonesia
09.50-10.05	Coffee Break
10.05-12.00	Plenary Session I Moderator: Sarbaini, Dr, MSc, Ir. Chairman Malaysian IMT-GT Delegation Chairman Thailand IMT-GT Delegation Prof. Dr. H. Harimurti Martojo, MSc (IPB, Bogor) Prof. Jothy Malar Panandam, Ph.D (UPM, Malaysia)
12.00-13.00	Lunch Break/Praying/Poster Viewing
13.00-14.15	Plenary Session II Moderator: Prof. Dr. Ir. Yose Rizal, MSc Dr. drh. Fachruddin (IPB, Bogor) Dr. Frank Muller Schloser (Minitube Germany) Prof. Dr. Suheimi Mustafa (UPM Malaysia) Prof. Drh. Hj. Endang Purwati, MS., Ph.D (Unand)
14.15-15.15	Plenary Session III

Day-2, June 29, 2009

Room : 2

Time	Activities
15.30-16.30	Paralel Session Moderator: DR. Ir. Hendri, MS
	Fridarti, S.Pt., MP dan Irwandi (UNITAS) ~
	Johan Setianto, Warnoto and Nurmeiliasari (UNIB) ✓
	Warnoto and Johan Setianto (UNIB) ✓
	Feri Lismanto (Unand)
	Rusfidra (Unand)
16.30-17.00	Paralel Session Moderator: Dr. Ir. Jaswandi, MS
	Hermon (Unand)
	Zulkarnaini, Mardiaty Zain, N. Jamarun (Unand)
	Rusmana WSN and Khasrad (Unand)
	Khasrad and Rusmana WSN (Unand)
	Rusfidra (Unand)

## The Phenotypic Characteristic, Population and The Ecological Factors of Bengkulu's Burgo Chicken

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### ABSTRACT

This research was conducted to study the characteristic of phenotype, population and the environment of Bengkulu's Burgo chicken. Bengkulu's Burgo Chicken represent the crossmating result between the Red Forest Cock (*Gallus gallus*) with the nature Hen (*Gallus domestica*). Burgo chickens are mostly found in District of Rejang Lebong, so that the society called Burgo chicken as "Ayam Rejang" (Rejang's chicken). The data were collected by survey method and analysed descriptively. The survey results showed that the phenotypic characteristic of Burgo Chicken are as the followings; wide ear and white coloured, feather colour are mostly red to yellow and black to blue, black to silver leg, smaller body size than nature chicken in common and bigger body size than the Red forest chicken. Besides compact body form, mature Burgo Cock have piercing crow and ornamental beautiful feather's colour. Burgo chicken population which were found in each village with different macro environment, altitude, temperature, rainfall, farming system in each sub-district. This indicates that Burgo chickens are very adaptive to various ecological factors. It is revealed that the population of Burgo chickens in Village/area near the city has been increasing. It is assumed that social-economic and culture/interest of the society are the determinant factors.

Key word : Burgo chicken, phenotype, population, ecological factors.

## Introduction

In Indonesia, there are many kind of Native Chicken that each of it had its own characteristic and some of them can be developed to Broiler, Layer and Decorative Chicken (Rasyaf, 1994). Native Chicken including Burgo Chicken has its potential to be both meat and egg production. This potential has not been used well yet, this fact was based on the management of Native Chicken which is still very simple / traditional. Its life depends on its natural environment (Kingstone, 1979 and Othami, 1995).

Burgo chicken represents the result of cross-mating between Red Jungle Cock (*Gallus gallus*) with Native Hen (*Gallus domestica*) (Warnoto, 2000). Burgo chicken was wide-spread in Bengkulu. It shows the variety of fowl in Bengkulu that could be a native asset of Bengkulu's Indigenous. In the province of Bengkulu, Burgo Chicken can be found mostly in the district of Rejang Lebong, so that the native society called Burgo Chicken in their language as *Ayam Rejang* (Rejang's Chicken). Some of the special quality of Burgo Chicken was Burgo Chicken have more resistance against many kind of disease. Burgo Hen had a higher rate of egg production. Mature Burgo Cock has specific hi-pitched crow and had a beautiful ornamental color of feather so that Burgo Cock could also become Decorative Chicken with high economic price. Burgo Chicken developing efforts still have many obstacles. It's caused by less information and knowledge about Burgo Chicken. In order to make Burgo Chicken as superior commodity, it needs more scientific investigation towards Burgo Chicken that will increase the potential of Burgo Chicken. Because of that, it needs to do more research and study, basically on morphology, population, and habitat. By knowing this basic information, the developing and breeding way can be formulated correctly.

The present research was aimed to obtain basic information about Burgo Chicken, especially about the characteristic of the phenotype, population and macro environment of Burgo Chicken in Bengkulu Province.

## Research Method

According to the pra-survey, it was known that Burgo Chicken mostly found in the District of Rejang Lebong. Therefore, the research location can be earlier determined (purposive). The research location was chosen based on the certain characteristic that have similarity with the location characteristic that was needed and known before. The villages that have been chosen were firstly ranked by its Native Chicken population rate. Those villages were divided into 3 groups of population, village with higher population, medium population, and village with lower population in the district where the data will be collected and determined based on relative standard. Research location were some villages in the sub-district of Lebong Selatan, Lebong Utara, Padang Ulak Tanding, Kota Padang, Curup and Kepahyang. This research was conducted by using survey



method (Singarimbun and Effendi, 1991). The data that have been taken were being taken from primary data record and secondary data record. Primary data record that was needed was taken by using questioners, interview, and direct observation. Secondary data record was taken by monograph data from related agency. Data obtained was analyzed descriptively.

## Result and Discussion

### Specific Characteristic of Burgo Chicken's Phenotype.

This research was conducted by observation towards some Burgo Chicken's phenotype. Observation was done towards 100 Mature Burgo Chickens (aged 6-12 month) consist of 50 Burgo Cocks and 50 Burgo Hens. Phenotype characteristic of Burgo Chicken that prominent is the ornamental color of its feather, body shape, shank color and beak, and white spot near its ear lobe looks similar to Red Jungle Chicken. The research result can be seen in table 1 :

Table 1. Phenotype Characteristic of Burgo Cock and Burgo Hen.

The Phenotype characteristic variable	Specific characteristic		Explanation
	Male	Female	
1. Body			
- Shape	Small, short, compact	Small, short, compact	Mature
- Weight	0,75 - 1,25 kg	0,60 - 1,25 kg	
- Height	15 - 25 cm	15 - 20 cm	
2. Feather			
- Chest Color	Black	Yellow with	Cock feather dominated by black, Hen feather dominated by yellow. Influenced by its mother Gallus-gallus characteristic
- Neck Color	Red to yellow	black spot	
- Wing Color	Black mixed	Yellow with	
- Tail Color	with red	black spot	
- Saddle Color	Black	Yellow with	
- Covering	Red to yellow	black point	
Feahter	Black	Black	
- Wing Amount	14 sheets	-	
- Tail Amount	18 sheets	Yellow 14 sheets 18 sheets	
3. Shank / Foot			
- Color	Black to grey	Black to grey	

- Shape	Short ( 5 – 10 cm ) Round and small	Short ( 5 – 8 cm ) Round and small	
4. Beak			
- Color	Black	Black	
5. Body skin			
- Color	Yellow	Yellow	
6. Ear Lobe			
- Color	White	White	Specific characteris-tic of Burgo Chicken and as the original indicator
- Shape and size	Round, with diameter of 2 cm	Round, smaller than Cock's	
7. Chicken's comb			
- Color	Sharp red	Sharp red	
- Shape	Single, wide, thin, Stand, 4 toothed	Small, toothed	
8. Wattle			
- Color	Sharp red	Sharp red	
- Shape	Relatively wide, Left and right	Small, left and right	

#### Population and the Spreading of Burgo Chicken

Burgo Chicken population according to the direct observation in some villages at each sub-district that consist of the sub-district of Lebong Selatan, Lebong Utara, Padang Ulak Tanding, Kota Padang, Curup and Kepahyang shown in table 2.

Table 2. The result of Burgo Chicken population observation in each villages at the sub-district of the district of Rejang Lebong .

Village	Sub-district	Burgo Chicken rate	Average rate / village
Sukabumi	Lebong Selatan	32	26,8
Tes	Lebong Selatan	28	
Limau	Lebong Selatan	20	
E. Panjang	Lebong Selatan	23	
P. Agung	Lebong Selatan	31	
<i>Total</i>		<i>134</i>	

Garut	Lebong Utara	36	
K. Jawa	Lebong Utara	27	
M. Aman	Lebong Utara	29	29,6
L. Palembang	Lebong Utara	23	
Lokasari	Lebong Utara	33	
<i>Total</i>		<i>148</i>	
Belumai	P.U. Tanding	34	
G. Agung	P.U. Tanding	30	
T.Aur	P.U. Tanding	16	25,4
Kasibun	P.U. Tanding	27	
Lubuk Alai	P.U. Tanding	20	
<i>Total</i>		<i>127</i>	
Kota Padang	Kota Padang	40	
Durian Mas	Kota Padang	21	
L. Tanjun	Kota Padang	24	28,7
Bedeng	Kota Padang	30	
<i>Total</i>		<i>115</i>	
Dwi Tunggal	Curup	31	
Air Rambai	Curup	22	
Sumber Urip	Curup	34	27,8
Air Bening	Curup	25	
Suban Ayam	Curup	27	
<i>Total</i>		<i>143</i>	
Kepahyang	Kepahyang	75	
Pg. Agung	Kepahyang	23	
Pekalongan	Kepahyang	24	38,4
P. Agung	Kepahyang	38	
Kb. Agung	Kepahyang	32	
<i>Total</i>		<i>192</i>	

The sample villages were 5 villages taken from each sub-district that's purposively chosen to represent other villages. It's seen that the amount of Burgo Chicken in villages in each sub-district had non-significant varieties. It's also happened to the amount of Burgo Chicken among villages, a village to another village inside and outside the sub-district shown relative similar varieties.

This condition shown that Burgo Chicken was spreads at villages in each sub-district in the territory of the district of Rejang Lebong. Average amount of Burgo Chicken is approximately around 25 to 38 chickens / village.

Burgo Chicken's population indicated a tendency of growth in villages near the district's central. For example, Kepahyang village had the population of Burgo Chicken at the amount of 75 chickens. This average amount is above the average amount of Burgo Chicken population in 5 villages in the sub-



district of Kepahyang (38.4 chickens / village). This situation illustrated that Burgo Chicken is raised by the native society as hobby or as decorative chicken. The field exploration result shows that Burgo Cock was raised intensively in cage as decorative chicken.

The tendency of Burgo Chicken's amount growth in the villages near the city central and the total amount Burgo Cock that's raised by native society indicate social and culture influence by the society in the city that inclined to raise animal as a pet to fulfill their tertiary needs. This situation is based on fact that hobby to pet will occur when the other needs is fulfilled. This fact can be seen on the raising of "Ayam Berkisar", "Burung Kicau", and Decorative Fish of Arwana that symbolized the social degree of the owner.

#### **Macro Environment of the Sample Villages.**

Macro environment of Burgo Chicken as a pet was taken from 10 villages in the sub-district of Kepahyang. These villages were chosen based on their altitude, temperature, and agricultural system that are the live environment of Burgo Chicken. Fully obtained Macro environment is in the attachment 1.

The population of Burgo Chicken had differences in 10 villages with different macro environment in the sub-district of Kepahyang. However, the population variability did not reveal a relation between altitude, rainfall, temperature, and agricultural system in those villages. Nurmeliastari (2001) reported that Burgo Chicken was very adaptive towards its live environment so that altitude, temperature, and another macro climate gave no effect towards the population of Burgo Chicken. The amount differences of Burgo Chicken between villages, a village to another village was influenced by human interaction such as social economic degree, culture and hobby.

This fact indicates that Burgo Chicken was capable to live in many different environments as Native Chicken's and also had a breeding capability just like Native Chicken's. There was a unique difference between Burgo Chicken's behaviors with the Native Chicken that was Burgo Chicken like to sleep in open environment on the branch of tree around its coop.

Different condition of ecology, vegetation variation that was dominated by coffee, rubber, coconut, durian, mango, guava, banana, and another plants did not determined the distribution of Burgo Chicken. Kinds of vegetation in research location gave no dominant influence towards the population of Burgo Chicken. The dominant factors are social-economic and culture of the native society.

#### **Conclusion**

Based on the result of the research, it can be concluded that Burgo Chicken had its phenotype characteristic that is close to the Red Jungle Chicken's phenotype rather than to the Native Chicken's. The development of Burgo Chicken is best to be decorative chicken and layer than broiler. Burgo Chicken population can be found in every village with different macro

environment such as altitude, rainfall, temperature, and agricultural system in every sub-district. These facts indicated that Burgo Chicken was very adaptive towards its environment. There was also a growth tendency of the amount population in the villages / area near the city central. These facts was determined by the factors of social-economic and culture / hobby of the native society.

#### References

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Attachment 1. Macro Environment of Sample Villages in the Sub-district of Kepahyang

Villages	Pop of Burgo	Resident	Altitude (m) a.s.l	Rainfall (mm <sup>3</sup> /year)	Temp. (°C)	Agricultural system (%)		
						Rice field	Dry land	Plantation
Ps. Kepahyang	75	5.198	500	2.400-3.000	26-32	10	60	30
Pagar Agung	23	989	500	2.400-3.000	26-32	5,0	75	20
Kebon Agung	38	2.073	500	2.400-3.000	26-32	0	50	50
Pekalongan	24	1.196	600	2.000-3.000	26-31	25	25	50
Bumi Sari	32	1.359	600	2.000-3.000	26-31	12	65	23
Nanti Agung	30	1.717	700	2.500-3.000	26-31	25	25	50
Tanjung Alam	12	300	800	2.000-3.000	25-30	5,0	20	75
Suro Bali	15	328	800	2.000-3.000	25-30	5,0	20	75
Tebat Monok	31	1.830	1.000	2.000-3.000	20-28	0	25	75
Pagar Gunung	36	912	1.000	2.000-3.000	20-28	0	30	70