



PHYSICAL, ANATOMICAL AND CARCASS DIVERSITY OF SUPERIOR NATIVE CHICKEN SENSI AGRINAC AND KUB MAINTENANCE IN FARMERS

Nyoman Suyasa, dan Ida Ayu Parwati

Bali Assesment Institute of Agriculture Technology (BPTP)
Jl , By Pass Ngurah Rai - Pesanggaran , PO BOX 3480th , Denpasar

nbagussuyasa61@gmail.com

Abstract. Native chicken is one of the producers of animal protein that has a high taste and is in demand by many consumers. The decline in the population of native chickens are causing the Central Agricultural Research and Development Agency has begun to make a breakthrough by producing superior types of native chicken, namely Sensi and KUB, which are expected to be able to increase the interest of farmers. The study was conducted in Jehem Village, Bangli Regency, For observations of the anatomical and carcass characteristics performance, 60 chickens, consisting of male and female Sensi 1, as well as male and female KUB, each had 15 tails, The results obtained showed that the male live weight of Sensi was 1,72 while male KUB was 1,71 kg / head, while female Sensi was 1,30 higher than female KUB 1,14 kg / head, The length of male KUB legs reach 19,33 and Sensi 20 cm, while for female KUB 15,17 and Sensi 16,67 cm, Body length of male KUB 24, Sensi 27 cm and female KUB 23,33 and Sensi 23,67 cm, For carcass weight, KUB male reached 1038,33 and Sensi 1076,33 gr, and for the thigh weight of the male KUB and Sensi are 192,34 and 189,00 gr / head, For each wing weight 153,67; 163,34; 108,00 and 99,00 gr /head.

1. Introduction

To find out the potential that exists in domestic poultry besides egg production, meat production is also crucial in determining its productivity. In addition to the anatomical, physical and carcass production of meat and eggs produced, it will determine whether the native chicken is preferred or not good for consumption or subsequent maintenance live sale, Chicken will be interesting if physically looks healthy and body anatomy is balanced. Observation of carcass quality is quite important especially in the effort to provide technical information that can be used as a picture of the potential of native chickens, thus encouraging the development of domestic chicken farming as a national commodity that must be developed, native chicken is a mainstay commodity and has a promising future, both economically and socially, because native chicken is able to supply high nutritious food needs in the form of meat and eggs [10], the type of product produced is can meet the consumption needs of all walks of life with prices relatively higher than purebred chicken products, native chicken also has a large enough market absorption capacity to meet the needs of local communities [10].

Bali as a tourist visiting area from year to year always lacks the supply of native chicken meat from total meat production in Bali, which amounts to 185,074.92 tons, the contribution of native chicken is only 3,393.90 tons or only 1.83%, while for Bali egg production it is able produce eggs 53,341.91 tons where the contribution of native chicken eggs is only 1,971.23 tons or 3.69% [5], this is because the maintenance of domestic poultry is still very limited and mostly traditional, can also be caused by the absence superior breeding of native chickens to be developed, the population of native chicken in Bali reached 3,263,391 tails, for 2017, decreased by 17.18% compared to 2016 (3,940,439 tails) [4] This shows the passion of farmers in aquaculture decreased, This continues from year to year from 2013 to 2017, reaching 851,827 or 20.69% of the current population, raising chickens generally to get Egg production and meat production. Of the total meat production in Bali, which amounted to 185,074.92 tons, the contribution from native chicken was only 3,393.90 tons or only 1.83%, whereas

for egg production Bali was able to produce eggs 53,341.91 tons which contributed native chicken eggs only 1,971.23 tons or 3.69% [5]

In an effort to respond to the needs of superior native chicken breeding technology, the Research Institute for Livestock has carried out various research activities on native chickens. The results of the research show that through selection technology accompanied by an intensive maintenance system, productivity can be improved. From this selection results in superior native chicken called the Chicken Superior Kampung Research and Development Agency (KUB Chicken), for laying while for broiler has also produced Superior chicken native named SensiAgrinak (Sentul Selected), These two types of chickens will be tried to be developed in the community to increase food self-sufficiency (meat), Chicken Sensi-1 Agrinak was proclaimed as Livestock Research Center flagship chicken in 2017 through the Minister of Agriculture Decree No, 39 / Kpts / PK, 020/1/2017 on January 20, 2017 concerning the release of the Sensi-1 Agrinak chicken strain, the Sensi-1 Agrinak Chicken is a the results of research on male line selection for 6 generations with excellence growth and higher body weight, Chicken Sensi-1 Agrinak is divided into 2 groups based on furcolor; Sensi-1 Agrinak feathered gray and Sensi-1 Agrinak White black spot. Results of selection of 10-week-old live weights in male chickens Sensi-1 feathered (white or ash) have above > 1 kg, with an average body weight of 10 weeks slightly higher in Sensi-1 white-haired Agrinak; males 1051 grams / head; female 751.00 grams / head and Sensi-1 Agrinak with hairy as big as ash; 1015 grams male / head; females 739.00 grams / head, [7], In addition to the live weights of newly published chickens as superior chickens, it is also necessary to know their anatomical and physical performance as well as the percentage of carcasses produced, for this reason this study was conducted so that farmers or the public know various things about superior chickens both SensiAgrinak and KUB.

2. Metodology

The study was conducted in the village of Jehemkaja, Jehem village Tembuku district, Bangli Regency, the study was carried out for 10 months from preparation to implementation,

The material in this study used 600 chickens, each consisting of 100 male SensiAgrinak chickens, 35 Sensifemale, 40 male KUB and 325 female KUB chickens, the feed consisted of starter feed and grower feed and was a complete feed feeds, digital scales, digital calipers, measuring meters.

The feed given is complete feed consisting of starter and grower feed, Starter feed is given from the age of 1 day (DOC) to 1.5 months of age, then given grower feed until 22 weeks of age. This age is the age at which native chicken are considered adults and ready for production, In taking samples from the number of chickens taken randomly, SensiAgrinak male, SensiAgrinak Female, KUB male and female 10 tails each,

To find out physical and anatomical data and carcass measurements were carried out using measurements such as digital scales, (body weight and other organ weights), digital calipers, for anatomical observations such as head size, beak length, wing length and others.

Data obtained from subsequent observations were analyzed descriptively and also percentages and tabulations to find out the mean, percentage analysis and others using Excel analysis, [6].

1. Results And Discussion

1.1. Physical Performance of SensiAgrinak chickens and KUB

Tabel 1, Physical Performance of SensiAgrinak chickens and KUB

Physical Performance	Type of Chicken			
	SensiAgrinakMale	KUB Male	SensiAgrinakRooster	KUB Rooster
Life weight (gr)	1720	1715	1305	1143
Fur color	Black patches and gray	Black and mixed colors	Black patches and gray	Black and mixed colors
Half length (cm)	2,15	2,23	2,50	1,83
Head width (cm)	3,12	2,83	2,97	2,78
Head length (cm)	6,87	8,34	8,67	7,50
Neck length (cm)	15,51	13,35	14,35	12,69
Body length (cm)	27,05	24,18	23,69	23,38
In the chest (cm)	14,47	13,67	14,11	13,78
Chest width (cm)	14,31	14,50	13,78	13,45
Abdominal circumference (cm)	33,35	34,67	32,00	31,67
Thigh length (cm)	12,83	12,83	11,35	11,68
Calf Length (cm)	16,00	16,34	14,22	13,46

Source: Primary data processed

In the explanation of the results of the Sensi 1 agrinak chicken for further it will be called sensi. Table 1 data shows that the weight of male Sensi male chickens at 22 weeks, both physically and sexually mature adults has an average body weight of 1720 grams / head, this weight is higher when compared to the weight of male KUB chickens which only reach an average of 1715 grams / head, for Sensi Female average weight 1305 grams / head, Sensi female has a higher weight compared to female KUB weights which only reach 1143 grams / head. This shows that the weight of Sensi chickens is higher than the weight of KUB chickens both male and female. This can be explained because chicken Sensi is a chicken selected for the type of broiler of male line (male) which is expected to later be able to produce rapid growth when compared with other native chickens, while KUB chicken is produced as a native chicken that will produce eggs (layer) because it can produce average eggs a 50% in terms of productivity.

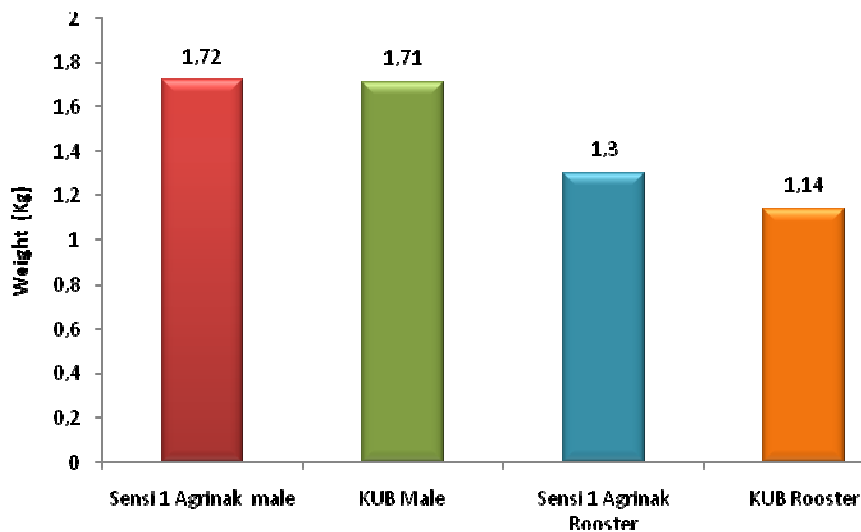


Figure 1: The performance of body weight Sensi 1 Agrinak and KUB

When viewed the head width also SensiChickens has a head size that is wider than KUB chickens both male and female (table 1). For head length it appears that male KUB chickens have longer heads than Sensi male, where male KUB 8.34 while Sensi is only 6.87 cm, while female Sensi has a longer head compared to KUB, which is 8.67 compared to 7.50 cm. RindiraHumaira's research results [15] states that the results obtained in native chickens in the Air Purih sub district for head length and width are 3.679 ± 23.61 cm and 4.949 ± 29.01 cm / head. This result is higher when compared to the existing native chicken in the fiitysub-district with length and head width of $2,008 \pm 21.03$ and $1,638 \pm 28.36$ cm / head.

For Sensimale and KUB male chickens have the same thigh length that is 12.83 cm while Sensifemale long thigh length 11.35 is slightly shorter than female chicken KUB 11.68 cm, while for calf length Sensi males 16.00 while KUB 16.34 cm. Whereas the length of the female calf Sensi is 14.22 cm longer than the female KUB which only reaches 13.46 cm.

1.2. The Performance Of The Weight Of The Body Components And Carcasses Of Chicken Sensi 1 Agrinak And KUB

SensiChicken and KUB chicken are new breeds of chicken that have just been developed from the selection of 6 generations that have advantages. From the observations it is known that the heart weight of male Sensimale is heavier than male KUB is 8.04 compared to 7.65 grams / head, but the heart weight of male female Sensi is only 5 grams lower than the heart weight of female KUB 5.41 grams / tail.

In general, the weight of chicken body components Sensi or KUB chicken has the weight of body components that are proportional to body weight. The heavier body weight the average body component weight was also heavier (table 2). Merkley et al. (1980) in DayuParwati, et al [11] divided carcass into five major pieces of commercial pieces namely the chest, wings, back, upper thighs and lower thighs. The chest is the part of the body that has the most meat. Commercial back pieces are parts of the carcass that are cut off at the joints of the shoulder blades that are bordered by the sternum to the left and right thigh joints. The wings are separated from the carcass on the shoulder joint. The commercial portion of the upper thigh is the portion of the carcass that is cut along the groin joint, that is, from the coxae joint to the knee. Commercial pieces of the lower thigh are the carcass cut from the knee joint to the intersica[1]. Other body parts such as breast weights from Sensi male, KUB male, Sensi female and Female KUB :304,45; 300.35; 227.38 and 198.25 grams / head. Back weight of

215.68 grams / head for Sensi male and 200.38 grams / head for KUB male.while Sensi for female 176.69 and 164.64 grams / head for female KUB. Likewise, the weight of the upper thigh is 189.00; 192.46; 163.08 and 151.36 g / head and the lower thigh weight is 204.08; 191.67; 134.62 and 120.74 for each. Sensi male, KUB male, Sensi female and KUB female. While the wing weights are 163.39; 153.76; 108.80 and 99.04 grams / head (table 2). [14] obtained results from Pelung-native crossbreed chickens which were fed with different protein contents for each chest weight 191; 187; 185 and 189 g / head while the wing weights are 99; 102; 101; and 102 grams / head.

For the percentage of the weight of parts of the carcass such as the chest, back, upper thighs, lower thighs and wings of Sensi male is 17.70; 12.53; 10.98; 11.86 and 9.53% / head while for KUB male each part was 17.51; 11.68; 11.22; 11.17 and 8.96% / head. According to Muryanto et al. [12], the percentage of commercial cuts of native chicken carcasses aged 12 weeks consisting of chest, upper thighs, lower thighs, back and wings respectively was 17.20; 19.00; 18.00; 23.10 and 15.81%. Commercial slices of 14-week-old native chicken carcass consisting of chest, wings, back, upper thighs and lower thighs respectively 23.49; 14.11; 25.7; 18.11; and 18.32% [8]. Results of [12] others showed the percentage of thighs over native chicken aged 12 weeks by giving commercial rations of 18.00%.

In table 2 it can be seen that the carcass weight of male Sensi male is 1076.93 while male KUB is 1038.43 grams / head while for females respectively 799.64 and 743.63 grams / head for Sensi and KUB. When compared with body weight (life), these results indicate the more weight the body weight the heavier carcass produced. This is in accordance with the opinion of Rasyaf (1998), that carcass production is closely related to life weight, the more the weight of carcass production will increase too. While the results obtained from the research of [13] showed that feeding with different protein levels on live weight and carcass weight of chickens from Bangkok and Arabic crosses had a significant effect ($P < 0.05$).

Table 2. The weighting of body components and carcasses of chicken Sensi Agrinak and KUB

Jenis Ayam				
Body Component Performance (Weight)	Sensi Agrinak Male	KUB Male	Sensi Agrinak Rooster	KUB Rooster
Heart (gr)	8,04	7,65	5,00	5,41
Liver (gr)	29,45	34,32	25,74	25,00
Empty Rampella (gr)	60,86	47,00	49,20	40,98
Chest (gr)	304,45	300,35	227,38	198,25
Back (gr)	215,68	200,38	176,69	164,64
Thigh (top) (gr)	189,00	192,46	163,08	151,36
Lower thigh (gr)	204,08	191,67	134,62	120,74
Wing (gr)	163,39	153,76	108,80	99,04
Carcass (gr)	1076,93	1038,43	799,64	743,63
Percentage of carcass (%)	61,62	60,54	61,27	61,55

Source: Primary data processed

This result also shows that the percentage of carcasses obtained when compared with the live weight was 61.62; 60.54; 61.27 and 61.55%. [2] found that giving herbal medicine to native chickens was proven to increase the percentage of carcasses in native chickens, from 64.0% in control group

chickens to 68.1% in the herbal group. It is likely that some of the ingredients used in herbal medicine can cause an increase in the metabolism of chickens which causes an increase in the formation of meat and bone parts in the chicken. The percentage of carcasses in chicken fed on herbal medicine is almost the same as reported by Tegua et al. [16] in broiler chickens (67.3%) and native chickens (66.3%) which are intensively raised. While the results of Dadan's [3] research showed the percentage of Native chicken carcasses aged 9 weeks by giving palm kernel meal ration and a mixture of enzymes (phytase, amylase, protease, and lipase) ranged from 58.05 to 59.67%. Ida Ayu Parwati and Nyoman Suyasa [11] obtained carcass weights on KUB chickens which were given various feed treatments and additional probiotics were 56.00; 59.00 and 62.00%

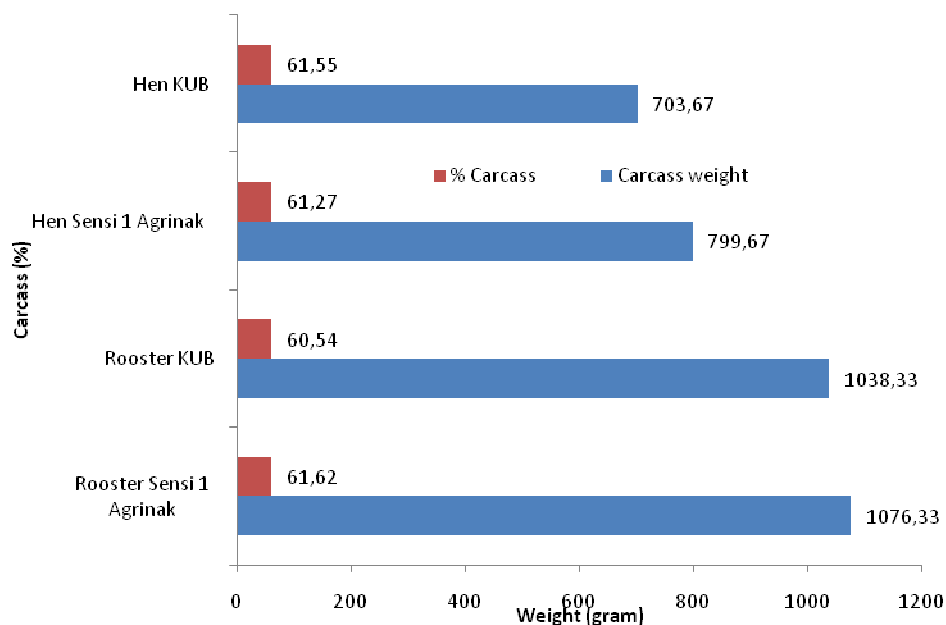


Figure 2. Performance of Carcass Weight of Chicken Sensi Agrinak and KUB

4. Conclusion

Weight of male Sensi is 1720 grams / head heavier than male KUB chicken which is only 1715 grams / head, likewise in Sensi female has body weight 1305 grams / head higher than body weight of female KUB chicken 1143 grams / head. The carcass weight achieved in Sensi chickens both male and female is proportional to the body weight of 1076.93 and 799.64 grams / head or 61.62 and 61.27%. While KUB male carcass weight is 1038 grams / head (60.54%) while Female KUB is 743.63 grams / head (61.55%)

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