

## Characteristics of Ongole Grade Cows in the Kebumen Regency, Central Java Province

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### ABSTRACT

The research was conducted to explore the characteristics of Ongole grade cows. The research was held in Klirong sub-district, Kebumen regency. Two hundred thirty of Ongole grade farmers were involved in this research and interviewed on cows reproduction characteristics and breeding management, while exterior characteristics and body size were measured directly on 217 head of Ongole grade cows. Data of body size and cows performance were analyzed using mean and standard deviation, while exterior characteristics were analyzed descriptively and presented in percentages. Exterior characteristics of Ongole grade cows were white color in body and face, have a hump, big dewlap, long and hanging ears. Body size of Ongole grade cows at the three to four years old in terms of heart girth, shoulder height, body length, hip height, hip width and head index were 168.60±13.15 cm; 131.10±8.71 cm; 135.57±13.70 cm; 136.20±13.03 cm; 45.23±1.03 cm and 0.41±0.01, while at cows more than four years old were 170.97±11.02 cm; 130.10±5.61 cm; 136.00±9.21 cm; 136.67±5.83 cm; 45.27±0.99 cm and 0.41±0.01. The PPE, PPM, and S/C of Ongole grade cows were 4.07±0.18 months, 5.01±0.38 months, and 1.71±0.14. It was concluded that body sizes and performance of Ongole grade cows still in the normal range and relatively better than another research.

**Key words:** Characteristics, Ongole grade cows, Kebumen regency.

### INTRODUCTION

In Indonesia, beef cattle is an important part of integrated farming systems and the lives of the traditional farmer. Farmer used to cattle for plowing field and make fertilizer from its feces and/or urine. In addition, cattle can use rice straw as their feed which is available feed stuff along the year in Indonesia. Cattle also are well known as saving purpose and increase social status in rural culture. Almost cattle in Indonesia was raised in rural farmer with traditional raising management. The increase of the Indonesian population causes the demand for meat, especially beef.

Ongole grade (PO) cattle is one of the beef cattle that had a good achievement in the production of Indonesian environment. Improved cattle population can not be separated from the performance of the cow. PO cattle was the result of crossbreeding between local cattle with India cattle (Baliarti, 1985). PO cattle was local cattle is a result of grading up between Java cattle and Sumba Ongole (SO) cattle in about 1930 (Ngadiyono, 2012). The Ongole cattle are large, long bodied animals with short necks and long limbs. The normal coat color is white, but the male has dark grey markings on the head, neck, and hump and sometimes black points on the knees. The skin has medium thickness, the head is long, ears are moderately long and slightly drooping. The horns are short and stumpy, growing outwards and backward. The hump

in the males is well developed and erected. The dewlap is large, fleshy and hangs in folds that extend to the navel flap (Williamson and Payne, 1978).

Cows performance relies on farmer's raising ability especially on feedstuff, housing, sanitation, health, and mating managements. The problems that are faced by rural farmer on raising cows are high service per conception (S/C) number, long period of post partum estrus, post partum mating, and calving interval that decrease cows performance. The reproduction performances of Ongole grade cows were the first mating age of 21 to 30 months, PPE 32 to 42 day, S/C 1 to 2 and calving interval 13 to 20 months (Astuti *et al.*, 2007).

Kebumen district is the center of Ongole grade cows. The research was conducted to explore the characteristics of Ongole grade cows in Kebumen, Central Java. The results of this research can be used as advice for the government district Kebumen in decision-making and policy development Ongole grade cows for breeding.

## **MATERIALS AND METHODS**

The research was conducted in Klirong sub-district, Kebumen Regency, such as Pandanlor, Kedungsari and Jerukagung villages for four months, starting from September to December 2014. The material used in this experiments were Ongole grade cows, that were one hundred heads of about three to four years old and one hundred seventeen heads of about more than 4 years old. The observed cows in this study were calving at least twice. Two hundred thirty of Ongole grade farmers were involved in this research and interviewed on cow reproduction characteristics and breeding management, while exterior characteristics and body sizes were directly measured 217 heads of Ongole grade cows.

Variable observations in this study were the identity of farmers, experience breeding, estrus detection capability, and methods of feeding. Exterior characteristics were observed in the form of body color, the color of the muzzle, dewlap, hump, color eyes circle, tail fan color and shape of the ears. The size of the body's vital that observed in the form of a head index, body length, heart girth, shoulder height, hip height, and hip width. Ongole grade cows performance observed as post partum estrus, post partum mating, services per conception, and calving interval.

The data of body sizes and cows performance were analyzed by using mean and standard deviation, while exterior characteristics were analyzed by descriptive and presented in percentages.

## **RESULTS AND DISCUSSION**

### **Profile of farmers and feeding management**

Klirong sub-district has an area of 4,325 ha where cattle population reached 2,916 heads in 2009. In this research showed that the average respondent age  $46.35 \pm 2.04$  years and in the productive age group, has a long experience of breeding is  $12.24 \pm 2.83$  years. The citizen who included in productive age is in the range of 15 to 64 years old (Mantra, 1995). The age of farmer related with productivity level on livestock management. Livestock business will be running properly if managed by the person who is in productive age. Experiences influence the development and success of the breeding farm (Angkasari, 2009). The most education respondent level was elementary school 60.44% and the majority of farmers 83.43%. The majority farmers have used advantage of agricultural waste as animal feed and feces are used as fertilizer.

The farmers gave forages and partly given concentrates feed. Forage is given in the form of rice straw, field grass, napier grass and king grass, while the concentrate is given in the form of rice bran or pollard. A total of 71.05% farmers was giving the feed of forage and

concentrate, and only forage by 28.95%. The frequency of feeding showed 71.05% of them gave feed 2 times a day, and 23.68% of them provided 3 times a day, while the rest were only once a day. Feed requirements of a different animal. The larger the animal, the greater the required nutrients. Most of farmers provide drinking only twice a day (52.63%). Drinking water has two main functions, as a constituent part of the body and help the cattle releasing body heat. Cows performance is closely related to the mating management. Farmers mostly remain to apply natural mating methods 98.27% as there are males commonly used.

### Exterior characteristics and body size

Exterior characteristics showed that the Ongole grade cows in Kebumen have a white color in body and face, black muzzle, has a large hump and dewlap, black tail fan, black color around the eyes, long and hanging ears.

Body size of Ongole grade cows at the age of three to four years old in terms of heart girth, shoulder height, body length, hip height, hip width, and the head index were 168.60±13.15 cm, 131.10±8.71 cm, 135.57±13.70 cm, 136.20±13.03 cm, 45.23±1.03 cm, and 0.41±0.01 (Table 1). Body size of Ongole grade cows at the age of 1.5 to 4 years old are in Pacitan regency in terms of heart girth, shoulder height, body length, hip height, head length, head width, and head index were 147.75±2.76 cm, 123.25±1.51 cm, 131.00±2.69 cm, 127.25±1.49 cm, 46.63±0.84 cm, 16.75±0.65 cm and 0.35±0.009, respectively (Abdurahman, 2006). The growth rate or gain of body size were influenced by age, breed, genetic, sex, rearing management, and environment (Soeparno, 1992).

**Table 1. The Body size of Ongole grade cows 3 to 4 years old**

Variable	Villages			Means±SD
	Pandanlor (n=51)	Kedungsari (n=36)	Jerukagung (n=13)	
Heart girth, cm	168.00	168.80	169.00	168.60±13.15
Shoulder height, cm	130.60	130.70	132.00	131.10±8.71
Body length, cm	141.50	133.20	132.00	135.57±13.70
Hip height, cm	135.80	133.80	140.00	136.20±13.03
Hip width, cm	45.65	45.50	44.54	45.23±1.03
Head length, cm	52.82	52.34	51.30	51.82±0.41
Head width, cm	21.60	21.26	21.10	21.32±0.41
Head index	0.41	0.41	0.41	0.41±0.01

Body size above four years old in terms of heart girth, shoulder height, body length, hip height, hip width, and head index were 170.97±11.02 cm; 130.10±5.61 cm; 136.00±9.21 cm; 136.67±5.83 cm; 45.27±0.99 cm and 0.41±0.01, respectively (Table 2). According to Pane (1993), PO cattle were a grading up of local cattle with Ongole cattle. PO cattle were included in *Bos indicus*, has the long shape of the face, a large hump, and horns. The PO cattle have a long of the head with long and hanging ears (Williamson and Payne, 1978). Tropical cattle will reach peak of growth at the age of 4 years. The newborns calf will show great growth until puberty age and go slow down when after puberty until peak growth stage in 4 years old. Every livestock breed has different growth performance because of their own each breed potential

(Sugeng, 2003). The results of this study compare favorably with earlier studies in different locations. Body size of Ongole grade cows above 4 years old in Pacitan regency, showed that the heart girth 154.69±1.12 cm, shoulder height 123.56±1.36 cm, body length 130.19±1.91 cm, hip height 127.63±1.44 cm, head length 47.69±0.46 cm, head width 17.13±0.18 cm, and head index 0.36±0.004 (Abdurahman, 2006).

**Table 2. The Body size of Ongole grade cows above 4 years old**

Variable	Villages			Means±SD
	Pandanlor (n=54)	Kedungsari (n=48)	Jerukagung (n=15)	
Heart girth, cm	169.80	171.10	172.00	170.97±11.02
Shoulder height, cm	128.40	130.90	131.00	130.10±5.61
Body length, cm	141.10	133.90	133.00	136.00±9.21
Hip height, cm	134.70	137.30	138.00	136.67±5.83
Hip width, cm	45.70	45.55	44.58	45.27±0.99
Head length, cm	52.20	51.84	51.10	51.38±0.63
Head width, cm	21.10	21.00	20.18	20.76±0.46
Head index	0.40	0.41	0.40	0.41±0.01

### Reproduction performances

Ongole grade cow reproductive traits showed that the post partum estrus (PPE), calf weaning age, post partum mating (PPM), Services per conception (S/C) and calving interval were 4.07±0.18 months, 5.95±2.90 months, 5.01±0.38 months, 1.71±0.14 and 15.25±0.42 months (Table 3). The value of PPE may be longer in cow feed short ages and long weaning age (Toelihere, 1985). The value of PPM was affected by the PPE and estrus detection capabilities (Setyabudi, 2008). The value of the S/C is influenced by the cow, capabilities inseminator, and fertility of the bulls. Calving interval is affected by PPM, the length of pregnancy and value of S/C (Peters and Ball, 1995). The reproduction performances of PO cows in Klaten regency, showed that PPE, PPM, S/C and calving interval were 5.60±2.55 months, 6.26±2.60 months, 1.66±0.82 and 15.46 months, respectively (Setyabudi, 2008).

**Table 3. The reproduction performances of Ongole grade cows**

Variable	Villages			Means±SD
	Pandanlor (n=103)	Kedungsari (n=77)	Jerukagung (n=50)	
Post partum estrus (PPE), month	4.05	4.06	4.10	4.07±0.18
Post partum mating (PPM), month	4.67	4.95	5.42	5.01±0.38
Service per conception (S/C)	1.73	1.85	1.56	1.71±0.14
Weaning age, month	4.66	9.27	3.91	5.96±2.90
Calving interval, month	15.33	14.80	15.63	15.25±0.42

## CONCLUSIONS

The research could be concluded that body sizes and performance of Ongole grade cows in the Kebumen Regency are still in the normal range and relatively better than other research.

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