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POPULATION DYNAMICS ON ONGOLE GRADE CATTLE IN KEBUMEN REGENCY - CENTRAL JAVA

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui karakteristik-karakteristik reproduksi, potensi output dan dinamika populasi sapi PO di Kabupaten Kebumen, Provinsi Jawa Tengah. Penelitian dilaksanakan pada bulan September-November 2015 di Kabupaten Kebumen Provinsi Jawa Tengah. Materi yang digunakan dalam penelitian adalah petani peternak selaku responden sejumlah 165 orang yang memiliki sapi PO. Metode penelitian yang digunakan adalah survey. Sampel responden diambil dari 5 lokasi kecamatan yang ditentukan dengan menggunakan teknik purposive sampling. Pengambilan data dilakukan melalui wawancara langsung dengan petani peternak sebagai responden. Analisis yang digunakan adalah analisis deskriptif. Hasil penelitian menunjukkan bahwa umur pertama kawin betina 26,87 bulan, nilai S/C 1,64, kawin kembali setelah beranak 4,52 bulan, umur sapih 3,97 bulan, jarak beranak 14,32 bulan dan tingkat kelahiran terhadap populasi 45,5%. Nilai efisiensi reproduksi diperoleh hasil 91,8%, natural increase sebesar 44,68%, net replacemen rate jantan dan betina masing-masing 1.207% dan 253% serta diperoleh potensi output 44,11%. Dinamika populasi sapi PO dari tahun 2009-2014 mengalami fluktuasi dengan pertumbuhan rata-rata -4,84%. Pada tahun 2019 populasi induk sapi PO dapat diestimasi menjadi 68.381 ekor. Kesimpulan dari hasil penelitian adalah Kabupaten Kebumen memiliki potensi output sapi PO yang cukup tinggi yaitu 44,11% dan dinamika populasi dari tahun 2010-2014 mengalami fluktuatif dengan rata-rata turun 4,8%. Estimasi populasi induk sapi PO megalami peningkatan 16,7% per tahun.

Kata kunci : dinamika populasi, natural increase, output, sapi PO

ABSTRACT

The objective of this study was to elucidate reproductive characteristics, potential output and dynamics population of Ongole Grade cattle in Kebumen Regency, Province of Central Java. The study was conducted from September to November 2015. The materials used in the study were 165 farmers as respondents having Ongole Grade cattle. The research method used was survey. Respondent samples were taken from five districts in which the location was determined by using purposive sampling. Data were collected through direct interviews with livestock farmers as respondents. The analysis used was descriptive analysis. The results showed that the age at first mating was 26.87 month, S/C was 1.64, post-partum mating was 4.52 month, weaning age was 3.97 month, calving interval was 14.32 month, and the birth rate to population was 45.5%. Reproductive efficiency value was 91.8%, natural increase was 44.68%, and net replacement rate of bull and heifer were 1,209% and 253%, respectively, and total output 44.11%. Population dynamics of Ongole Grade cattle from 2009 to 2014 fluctuated with average growth was -4.84%. In 2019, cow population of Ongole Grade was estimated about 68.381 heads. In conclusion Kebumen Regency has a relatively high potential output of Ongole Grade cattle that is 44.11% and population dynamics from 2010 to 2014 fluctuated with average of decrease growth is

4.84%. Estimation of cow's population of Ongole Grade cattle will increase 16.7% per year.
Keywords: natural increase, output, Ongole Grade Cattle, population dynamics

INTRODUCTION

Cattle meat demand increased nationally every year. Average increase of cattle meat demand about 15.8% per year from 2009 to 2014. Increased demand is in line with the increasing number of population, income levels and community nutrition awareness. In other side, domestic cattle meat production still not able to meet all the existing demand, so some of the meat had to be imported. Utilization of local resources through optimization the development of local cattle is wise step to support establishment of beef self-sufficiency.

Indonesian has several local breed of cattle, having the potential to be developed to meet the need of domestic beef. One of the breed is Ongole Grade cattle. Ongole Grade cattle spread in some islands and provinces in Indonesia, one of the provinces is Central Java with Kebumen Regency as the development area.

Kebumen is one of the center of cattle in Central Java. Ongole Grade cattle population growth in Kebumen needs to be studied in order to keep the population balance. Slaughtering, uncontrolled expenditure and un-maximized growth of cattle is worried to have an impact on depletion of Ongole Grade cattle in Kebumen. Evaluation of population growth or population dynamics to control of population is important to be conducted. Several researchs about population dynamics were conducted such as in Bali cattle in Yapen Islands (Samberi *et al*., 2010) and in PE goat in Kulon Progo Regency (Sumadi, 2001), but study on population dynamics in Kebumen has not be conducted yet. In relation to development policy in Ongole Grade cattle, particularly in Kebumen, analysis of dynamics population and potential output of Ongole Grade cattle in Kebumen Regency of Central Java Province is necessary. The objective of this study was to elucidate the reproductive characteristics, dynamics population and potential output of Ongole Grade cattle in Kebumen Regency of Central Java Province.

MATERIALS AND METHODS

Material

This research was conducted in Kebumen Regency, Central Java for three months, started from September to November 2015. The materials used were 165 farmers having Ongole Grade cattle in Kebumen. The questionnaire set was used to collect data.

Research Method

The research location and respondent were determination by purposive sampling method. The location selected was 5 out of 26 districts in Kebumen Regency. They were selected based on the Ongole Grade cattle population and topographic factors-plateau area and hilly area. Those five districts were Buluspesantren (10,340 heads), Puring (8,685 heads), Ambal (9,242 heads), Karanggayam (6,431 heads), and Karangsambung (2,746 heads).

Selected respondents sample were Ongole Grade cattle farmers who fulfill some criteria: 1). Farmer own Ongole Grade cows had ever calved twice at least 1 heads to find out the reproduction parameter, 2). Farmer have taken care for Ongole Grade cattle for at least 3 years, so they have already experience in reproduction management.
Data collection was done by survey through direct interview with respondents using questionnaire to collect primary data. To obtain secondary data, interview was also done with the concerned institutions such as Agricultural and Animal Husbandry Department of Kebumen Regency.

Data Analysis

Cattle Ownership Rate. The ownership of Ongole Grade cattle per farmer was measured by using formula of Sumadi (2001) :

$$X = \frac{Pt}{R} \quad \text{.....(1)}$$

$$Pt = \frac{Paw + Pak}{2} \quad \text{..... (2)}$$

Where: X = Average of cattle ownership per respondent per years (heads), Pt = The number of cattle per year (heads), Paw = The number of cattle one year before observation, Pak = The number of cattle at on time, R = The number of respondent.

Reproduction Efficiency (RE). Reproduction Efficiency is measured according to Samberi, *et al.* (2010):

$$RE = \frac{JB \times JA}{I1B - I1B + JB - LB} \times 100\% \quad (3)$$

Where: RE = reproduction efficiency, JB = calving interval, JA = number of calf, I1B = cow first time calving, I1K = cow first time mating, LB = length of pregnancy

Natural Increase. The measurement of natural increase = % birth/year - % death/year (Sumadi, 2001).

$$\% \text{ birth} = \frac{\text{birth/year}}{\text{population/year}} \times 100\% \quad (4)$$

$$\% \text{ death} = \frac{\text{death/year}}{\text{population/year}} \times 100\ \% \quad (5)$$

Net Replacement Rate. Net replacement rate (NRR) is obtained from the number of replacement young cattle candidate divided by the need of replacement cattle per year multiplied by 100% (Sumadi, 2001):

$$NRR = \frac{\text{replacement of young cattle}}{\text{need of replacement of catte}} \times 100\% \quad (6)$$

Population Dynamics. Population dynamics is estimated by Turner and Young (1969) formula:

$$Nt = Noe^{rmt}; \qquad rm = Ln/Lf \quad (7)$$

Where: N_t = size after lapse of time t, N_o = size of breeding flock at on time, e = natural logaritm (2.72), rm = intrinsic rate of increase, Ro = number of cow offspring reaching joining age produced by each cow during her lifetime in the breeding flock, Lf = average age at which a cow produces the offspring which replace her.

Cattle Output Rate. Output was measured on the basis of the number of culled cattle each year and the number of remain replacement. Data was obtained from the measurement of breeding pattern using composition estimation based on age group by the formula: Output = Remains of Replacement - Population Increasing Target (Sumadi, 2001).

RESULT AND DISCUSSION

Farmers' Characteristics

Farmers who were being respondent on this research ranged from 25 to 80 years old. The highest respondent age (36.36%) ranged 45 to 54 years old. Most of farmers (86.06%) were in productive age. Most of them were only elementary school graduates (65.45%). Their experience in cattle rearing ranged from 3 to 65 years. Most of them have reared cow since they were child because it was a family occupation from generation to generation. More than 10-years experienced farmer reached 96.36%. Although they were low-educated, they were able to reare cow well. Most of respondent (96.36%) have holticulture farming as main job. Their purpose of cattle rearing was for savings (70.30%).

Rearing System

The research result showed that the rearing system of Ongole Grade cattle on the research location was mostly done (99.39%) intensively and 0.61% was done semi-intensively. The intensive system which is widely applied was that cow was put in the shed at night while at noon it is bonded in the yard. It was fed 1 to 3 times a day. Most of farmers (85.12%) fed cow at night only. The main feed was rice straw can be fed either in fresh or in dried. Besides rice straw, bran was always fed (every day). It was given by mixing it with hay or mixing it with water and adding little salt. The other types of feed which are usually given were greenpeal leaves and shell (can be met at the end of dry season), peanut leaves (throughout the year), king grass, corn and cassava.

Number of Cattle Ownership

The number of Ongole Grade cattle reared by each farmer in Kebumen Regency when being observed ranged between 1 to 6 heads. The average ownership was 1.95 heads per farmer per year. It was higher than that of Central Java which reached 1.83 heads per farmer (Department of Animal Husbandry and Animal Health-Central Java Province, 2014), but It was lower than that of Sumadi *et al.* (2007) in Sukoharjo Regency which reached 2.63 heads per farmer and than that of Nur *et al.* (2015) in Lombok and Sumbawa Island which reached 2-3 heads and 5 heads per farmer, respectively. It was due to the constraint of power and costly, so they just reared cattle as a side job.

Reproduction Characteristic

Reproduction characteristics of Ongole Grade cattle in Kebumen Regency in 2015 are presented in Table 1. Based on data presented in Table 1, 40.00% farmers well recognize the sign estrus of Ongole Grade cattle. Ability to know estrus detection determine preciseness of mating time so influenced to the reproduction

Table 1. Reproduction of Ongole Grade Cow in Kebumen Regency in 2015

Item	Average/Value
Recognizing sign estrus (%)	
Less	6.67
Moderate	29.70
Good	40.00
Very good	23.64
Mating system (%)	
Natural mating	85.45
AI	3.03
Natural mating and AI	11.52
First mating age (months)	26.87±5.51
S/C (time)	1.64±0.82
First calving age (months)	37.15±5.87
Post partum mating (months)	4.52±1.59
Weaning age (months)	3.97±1.10
Calving interval (months)	14.32±1.93
Birth percentage (%)	
To Population	45.50
To parents	78.04

performance. To know estrus time succesfully, increase of intensity of estrus detection is needed. Rao *et al*. (2013) stated that for improving efficiency of estrus detection in animal visual observation is best method, if is done three times a day for at least 30 minutes every time. Mating system applied was natural mating (85.45%) and artificial insemination (3.03%). Farmer prefers the natural mating because it has higher success. It is in line with Hastuti *et al.* (2008) that natural mating is better than artificial insemination (AI) based on calving interval, service per conception, calf weaning age and post partum mating.

Table 1 shows that first mating age of Ongole Grade cattle was on the age of 26.87±5.51 months. It is longer than that of Ongole Grade cattle in Sukoharjo Regency that was 20.05 ± 3.75 months (Sumadi *et al.*, 2007) and that of Bali cattle in Bali, that was 21.12±0.16 months (Samberi *et al.*, 2010), but it was faster than that of Bali cattle in Poso reported by Tanari (2011) which reached 2.35 years (28.2 months). It is late because farmer postpones the mating after puberty age, waiting for the pregnancy readiness.

Table 1 shows that service per conception (S/C) on this research reaches normal range, 1,64±0.82. According to Nuryadi and Wahjuningsih (2011), normal S/C value ranges from 1.6 to 2.0 times. It is similar to report of Suyadi *et al*. (2014) that S/C of Ongole Grade cattle in East Java at lowland reached 1.64. S/C value on this research was still higher than that of Yulyanto *et al*. (2014) in Trenggalek and Ponorogo (1.28±0.32), but it is still lower than that of Sumadi *et al.* (2007) in Sukoharjo (1.74 ± 0.85) and that of Sodik and Hidayat (2014) which reached 2.4.

First calving age on this research was reachedd 37.15±5.87 months. It is longer than that of Ongole Grade cow in Sukoharjo Regency which only reached 2.92±0.22 years (35.04±2.64 months) by Sumadi *et al.*, (2007). If it is compared to the result of Bali cow research, it is faster than the research reported by Tanari (2011) in Poso, which reached 3.3 years (39.60 months) and Sudrana *et al.* (2014) in Lombok, which reached 39.69±4.62 months. First calving age in this research was more than 3 years because the first mating age was more than 2 years (26.87±551 months) and multiple times mating or having more than 1 S/C on the first mating. First calving age can be decreased by improvement of managemental practices and nutritional management (Gunawan *et al.*, 2011)

The result of this research was that farmer re-mated their Ongole Grade cows 4.52±1.59 months after calving (Table 1). It is longer than what was reported by Sumadi *et al*. (2007) of Ongole Grade cow in Sukoharjo Regency, which reached 4.02 ± 1.76 months and Samberi *et al.* (2010) research of Bali cow in Bali, which reached 3.53±0.29 months. Ongole Grade cow farmers in Kebumen re-mated their cattle on the estrus period which usually occurred several days after their calves are weaned (3.97±1.1 months). The faster calves were weaned, the faster the sign of estrus of the cattle appeared. The late appearance of sign of estrus after calving may be caused by the nutrition and parents' condition factor. Yendraliza (2013) stated that maintain forage nutritional completeness can accelerate puberty and estrus post partum.

Calf weaning in this research was at the age of 3.97±1.1 months, faster than Sumadi *et al.* (2007) research of Ongole Grade cow in Sukoharjo Regency which reached 5.97 ± 8.04 months. It is also faster than calf weaning age of Bali cow in Bali reported by Samberi *et al.* (2010)

which reached 4.41±0.32 months, Tanari (2011) which reached 6.75 months, and Sudrana *et al.* (2014) which reached 8.65±2.05 months. Faster weaning age in this research was caused by the farmers' habit in Kebumen Regency who preferred to sell their calf while they were still very young, so it caused forced weaning.

Calving interval in this research was 14.32±1.93 months. It is almost similar to the report of Yulyanto *et al.* (2014) that Ongole Grade calving interval in Ponorogo and Trenggalek reached 14.33 months. It was lower than what was reported by Sumadi *et al.* (2007) research in Sukoharjo Regency reached 16.86 ± 4.52 months and Sudrana *et al.* (2014) research of Bali cow reached 17.03±1.82 months, but it was higher than what was reported by Ihsan and Wahjuningsih (2014) on Ongole Grade cow in Bojonegoro reached 13.7 months and by Samberi *et al.* (2010), Tanari (2011), and Budiarto (2013) on Bali cow which was 13.68±0.51 months, 14.2 months, and 13.5 months, respectively. The average calving interval in tropical cattle ranged from 12,2 – 17,9 month among the indigenous and crossbred cattle (Kamal, 2010). The optimum calving interval was 12 months (Hadi and Ilham, 2002). Calving interval in this research was still too long, it is caused by post partum mating which is more than 3 months (4.52±1.59 months) and also multiple times of mating until pregnant, so the days open becomes too long.

Birth rate value was 78.04% to parents and 45.50% to the population (Tabel 1). The birth rate to parents was higher than that of Ongole Grade cattle in Sukoharjo Regency which reached 72.99% (Sumadi *et al.*, 2007) and that of Bali cattle in Bali which reached 72.27% (Samberi *et al.*, 2010), but it was lower than that of Bali cattle in Lombok which only reached 89.55% (Sudrana *et al.* (2014). This birth rate percentage to population was lower than that of Ongole Grade cattle reported by Sumadi *et al.* (2007) which reached 51.92%, but it was higher than that of beef cattle in Raja Ampat which was reported by Rajab (2013) which reached 15.9% to 28% and that of Bali cattle which was reported by Samberi *et al*. (2010), Budiarto (2013) and Sudrana *et al*. (2014) which reached 22.99%, 29.72% and 32.35%, respectively. Birth rate percentage to the population on this research was high enough because parents' composition in Kebumen Regency was still high (58.31%). Birth ratio in this research is 52.69% of male 47.31% of female.

Reproduction Efficiency

Reproduction Efficiency (RE) value can be known based on first mating age, first calving age, and calving interval (Hardjosubroto, 1994). In the research, the value of RE was 91.8%, higher than Samberi *et al*. (2010) research on Bali cattle in Yapen Regency and Budiarto (2013) research on Bali cattle in Bali Province reached 88.38% and 76.39%, respectively, but it was lower than Susanti *et al*. (2016) research on beef cattle in Banyuasin Regency reached 98.27%. RE value in the research was still low. It was because the first calving age was still high, 37.15±5.87 months and the calving interval was also high, 14.32±1.93 months. According to Hardjosubroto (1994), cattle with first calving age on 27 months, 9 months pregnancy, and calving interval 13.5 months will have 100% ER value. Meanwhile, if first calving age is more than 27 months and/or have calving interval more than 13.5 months, then the ER value will be less than 100%. One of the ways to increase RE value in Kebumen is improvement in nutritional management. Bindari *et al*. (2013) was stated that Insufficient intake of energy, protein, vitamins, and micro- and/or macro-minerals has all been associated with suboptimal reproductive performance.

Natural Increase (NI)

Measuring natural increase value is done to know increasing or decreasing of population (Tatipikalawan and Hehanusa, 2006). Based on birth rate 45.50% and the death rate 0.82%, the natural increase of Ongole Grade cattle in Kebumen Regency was 44.68% (Table 2). It was lower than that of Sukoharjo Regency in 2007 about 51.92% (Sumadi *et al.,* 2007). If it is compared to the research of the other breed of cattle, it is still higher than that of Budiarto (2013) of Bali cattle on Bali in 2011 (27.45%) and Susanti *et al*. (2016) of beef cattle on Banyuasin

Table 2. Natural Increase of Ongole Grade Cow in Kebumen Regency in 2015

Item	Value (%)
Cows percentage (%)	58.31
Birth rate to parents (%)	78.04
Birth rate to population (%)	45.50
Death rate to population (%)	0.82
Natural increase (NI) (%)	44.68

Table 3. Net Replacement Rate Value of Ongole Grade cattle in Kebumen Regency in 2015

Statement	Value (%)
Male	
Prediction of young male survived on the age of 2 years	23.54
Requirement of male replacements	1.95
Net Replacement Rate	1,207
Female	
Prediction of young female cattle survived on the age of 2 years	21.14
Requirement of female replacements	8.36
Net Replacement Rate	253

Table 4. Output Rate of Ongole Grade Cattle in Kebumen Regency in 2015

Item	Value (%)
Birth	45.50
Male	23.98
Female	21.53
Death	0.82
Natural increase	44.68
Number of 2 years old cattle	
Male	23.54
Female	21.14
Requirement of replacement stock on age of 2 years	
Male	1.95
Female	8.36
Remains of replacement stock	
Male	21.59
Female	12.78
Culled cattle percentage	
Male	1.94
Female	8.30
Output composition	
Young cattle	34.37
Old cattle	10.24
Total	44.61
Target for Increasing Population	0.50
Output	44.11

Table 5. The Population of Beef Cattle in Kebumen Regency 2010-2014

Year	Population (Heads)	Growth (%)
2010	86,003	-
2011	90,055	4.71
2012	99,062	10.00
2013	62,564	-36.84
2014	64,292	2.76
Average		-4.84

Regency in 2014 (24.39%). The high NI value on this research compared to other research was caused by the high population rate of the parents (58.31%) and the low death rate.

Net Replacement Rate (NRR)

Replacement stock is needed as the replacement of male or female eliminated from breeding. NRR value is used to find out whether the number of birth can meet the need in order to maintain the population. If the NRR<100%, then the need of replacement stock is not fulfilled. Otherwise, if the NRR>100%, then the need of replacement stock is fulfilled (Samberi *et al.,* 2010). To find out the number of replacement rate, data is obtained by using fictive composition group based on the age. The NRR of Ongole Grade cattle in Kebumen Regency in 2015 is presented in Table 3.

Table 3 shows that NRR of Ongole Grade cattle in Kebumen Regency for male and female was 1,207% and 253%, respectively. NRR in this research is higher than that of Bali cattle in Yapen Regency in 2009 for male (234.28%) and female

Table 6. Estimation of Dynamics Population of Ongole Grade cattle in Kebumen Regency

N_o (heads)	rm (%)	Ro (heads/year)	Lf (year)	Nt (heads)
29,381	16.7	2.45	5.381	68,381

Where: No = size of breeding flock at on time, rm = intrinsic rate of increase, Ro = number of cow offspring reaching joining age produced by each cow during her lifetime in the breeding flock, Lf = average age at which a cow produces the offspring which replace her, N_t=size after lapse of time t.

(189.59%) by Samberi *et al.* (2010). However, in female cattle NRR is still lower than that of Ongole Grade cattle in Sukoharjo Regency in 2007, which was 316.61% (Sumadi *et al*., 2007). The NRR on this research was high enough because of the high natural increase which reached 44.68%. It means that Kebumen Regency had surplus of population for male (1,107%) and female (153%).

Output Potency

Output estimation needs to be known because it can be used to organize the number of slaughtering and culling. Output value is obtained from the remains of replacement plus culled cattle minus population increasement target. The measurement of Ongole Grade cattle output in Kebumen Regency in 2015 is presented in Table 4.

The output rate of Ongole Grade cattle in Kebumen Regency was 44.11% of the population (Table 4). It is lower than that of Sukoharjo Regency which reached 51.92% (Sumadi *et al,* 2007). It is still high if it is compared to researche of Bali cattle. Samberi *et al.* (2010) stated the output Bali cattle in Bali was 13.11%, while Budiarto (2013) and Sudrana *et al.* (2014) stated the output in Bali and Lombok was 22.08% dan 21.47%, respectively. It is high enough because of high birth rate, low death rate, and low need of replacement per year.

Dynamics Population

The population of Ongole Grade cattle in Kebumen Regency was the highest one among the other beef cattle (Simmental, Limousin, Brahman, Brangus, Benggala, and Pesisir). Its population in 2011 reached to 88.02% of overall beef cattle population (Central Bureau of Statistics-Central Java Province, 2011). The population of beef cattle in Kebumen Regency from 2010 to 2014 is presented in Table 5.

Table 5 shows that the cow population in Kebumen regency is fluctuates. They increased from year of 2010 to 2012, but decreased to 36.84% in 2013. They increased again in 2014, but only 2.76%. The significant decreasing in 2013 was probably because of illegal export to another region. It was because of the high demand of it from other regions.

The changes or dynamics population on the following years can be estimated by the formula of Turner and Young (1969). Based on the data of Ongole Grade cattle reproduction and data of Ongole Grade cattle population in 2014, the estimation of productive cattle population on the fifth year is presented in Table 6.

The result of analysis of population dynamics showed that the intrinsic growth rate of the cows per year is 16.7 %. Its population in 2014 reached 29,653 heads (64.292 heads x 46,12%) can be estimated to be 68.381 in 2019 heads with assumption there will be no migration.

Population dynamics of beef cattle in Kebumen Regency for five year (2010-2014) decreased 4.84% per year in average, but from 2013 to 2014 increased 2.76%. Potential output of Ongole Grade cattle in Kebumen in 2015 reached 44.11 % (34.37% was young cattle and 10.24% was culled cattle). It was calculated by assuming that of increasing a target population was 0.5%. If the Ongole Grade cattle population dynamics in Kebumen is expected rise higher, then the number of cattle in side of Kebumen Regency should be kept, no selling or migrating cattle out side, particularly from young cattle. It was potentially increase the population to 34.37% with still availability output 10.24% from culled cattle.

CONCLUSION

Reproduction characteristics of Ongole Grade cattle in Kebumen Regency ranged in

normal value. The natural increase was 44.68% and potency output is 44.11%. The population of beef cattle in Kebumen Regency from 2009 to 2014 significantly fluctuated with -4,84% of average growth. The intrinsic growth rate of Ongole Grade cow was 16,7% per year, and the estimation of Ongole Grade cow population in 2019 was about 68.381 heads. The government of Kebumen regency need to conserve of Ongole Grade cattle, improve reproduction characteristics through improvement feed and breeding management, improve the quality of Ongole Grade cattle genetic through selection and implementation of animal identification card and control the migration of Ongole Grade cattle in Kebumen.

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