

Reproductive Characteristics of Local Pig Herds in Landonu Subdistrict of South Konawe Regency

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Abstract

The purpose of this study was to find out the reproductive characteristics of local pig herds in South Konawe Regency. The location of the study is determined by purposive sampling with the consideration that Landonu Subdistrict is a pig farming center area. Research is carried out using survey methods or in-person interviews to breeders. The study population was selected by 3 villages based on the largest number of pig herd population with the number of respondents for each village as many as 20 respondents, so that the overall number of respondents amounted to 60 respondents with the determination of respondents of each selected village conducted by Simple Random Sampling. The results showed that the average local pig was adult at 6.16 months of age and mated at 8 months of age. The number of children once born (litter size) 9.16 Tails/births with an average age of cows separated from the mother at the age of 3 months.

Keywords

reproduction; local pigs;
Landonu subdistrict



I. Introduction

There are 87 pigs in the world and there are 10 pigs that have been cultivated in Indonesia such as Landrace, Yorkshire, Duroc, Tamworth, and Sadle Back. In general, pigs in Indonesia have experienced crosses and have been cultivated commercially so that pure nation is difficult to find (Tribudi et al., 2019). The pig nation in Indonesia has a relatively uniform qualitative nature of fellow nations, but the nature is different between nations (Wea et al., 2020).

Qualitative properties desired by breeders generally that have economic value, such as reproductive power, production, amount and weight of weaned and mortality are low and efficient in the use of feed (Pasaribu, 2015; Wea et al., 2020). Improving the reproductive quality of pig herds can be maintained through genetic and marital improvements and environmental improvements.

The number of children for each sow is a picture of the fertility of the mother and male, because it is influenced by the state of the environment, the age of the pig, the variety of strains, death during fertilization and embryos, length of pregnant, order and food, season and birth (parity) (Ullo et al., 2020; Tulak et al., 2020; Pinem et al., 2020). Young sows produce fewer children than older sows and births in the summer are less than in the rainy season, because from the first birth the number of children tends to increase and peak at the third and fourth births, stable until the seventh birth and subsequent decline (Kaka, 2018). The length of pig pregnant is generally 110 ± 2.59 days (Sumardani and Ardika, 2016). The growth of a pig during parent care can usually be judged by the number and average weight per head at birth and weaned (Sumardani et al., 2017), where the growth of pig lets is adrift in the weight and number of the child (Mandey et al., 2018), and is related to the ability to nurture sows and milk production and the age of pig lets

(Tribudi et al., 2019). Various research results show that wild boar strains generally have more varied numbers of children compared to thoroughbred pigs (Surya et al., 2019). Faster growth than purebred pigs (Leonardo et al., 2018; Iyai & Saragih, 2017). The number of children born parent varies by about 10,861.68 (Suranjaya et al., 2018). In Indonesia this variation in pig breeds is 7-12 tails (Lace & Dethan, 2018). Mortality of a pig let during mother care can reach 72%, mostly occurring in the first week of birth and being crushed as the main cause (Bulu et al., 2019). The more the number of children, the smaller the average weight of children and tend to show higher mortality (Widayati et al., 2018). In an effort to increase the reproduction and production of pig herds this information is needed, so the lack of information about the appearance of local pig production and reduction in Indonesia becomes very important.

Pig cattle in general have become part of the socio-cultural life of Landono subdistrict of South Konawe Regency, so it has the potential to be developed as a producer of meat, savings and improving the social status of the community and supporting the family economy. Meat is widely consumed by people because it has a good taste and high nutrient content (Akbar et al., 2021). Pig cattle are protein-contributing cattle and have been recognized worldwide. Meanwhile, in Indonesia some areas are needed for customs activities (Soewandi & Talib, 2015). The low population increase in local is thought to be due to the high mortality rate of livestock which reaches 39.71% (Kaka, 2018) and livestock are stricken with disease every year so that they experience death, slaughter of livestock for customary needs (Pati et al., 2016; Maikameng & Beyleto, 2016). Mutation of livestock outside the area and low reproductive performance of pig herds with several indicators including pig herd productivity is still not optimal (Hana et al., 2016).

Of the 17 city districts in Southeast Sulawesi, local pigs are only in some areas, among others Buton, Muna, West Muna, Konawe, South Konawe, Kolaka, East Kolaka, Bombana, Bau-Bau City, and Kendari City. At the same time, there are significant population differences. Konawe regency is the area with the largest pig population of 56,288 while the city of Kendari with a pig population of 27 is the area with the smallest local pig population. As a first step in the development of the pig farming sector this research aims to get information about the reproduction performance of pig herds, because until now the study of local pig reproduction performances in Landono District of South Konawe Regency has not been widely reported.

II. Review of Literature

Pigs are cattle that have been developed since long ago. Pork is a meat-producing commodity with great potential to be developed because it has beneficial properties and abilities such as rapid growth rate, high number of children, good efficient rations (70-80%), and carcass percentage (65-80%) (Siagian, 1999). Some species of pigs in Indonesia have undergone domestication into local pigs and have been raised by the community (Soewandi et al., 2013). Sujana et al., (2015) the success of raising pigs is determined by the type of pig to be raised. Suitable pigs are saddleback pigs, landrace pigs and yorkshire pigs and are non-ruminant cattle (Perdana et al., 2017). Landrace pigs gain offspring 39.04%, fattening 47.06%, savings 11.23% and taken fertilizer 2.67% (Soewandi et al., 2013).

The livestock business process in general always expects profits. So that in achieving this it is necessary to take into account the use of inputs in pig farming business (Kojo et al., 2014). Reproductive performanceans are inputs in increased production in pig herd business and are related to increased pig herd production (Suberata et al., 2016). The

reproductive performance includes the estrus cycle, length of gestation, litter size, farrowing rate, sow age, and the weight of the sow. The productivity of a sow is determined primarily by the number of children born (litter size) and farrowing rate in a year (Sumardani and Ardika, 2016). Litter size produced by sows is said to be good when it reaches 11.3 tails and 12.5 tails (Ardana and Putra, 2008). The mother at the third and fourth births had the best performance and at the seventh birth had the worst performance (Rodriguez-Zas et al., 2003). Purba et al., (2014) states that the average litter size of sows is intensively maintained at the first birth of 9.44 tails, the second birth 9.82 tails, the third birth 10.60 tails, and the fourth birth 10.50 tails.

III. Research Methods

Research is carried out using survey methods or in-person interviews to breeders. The study location was selected by 3 villages using the Stratified Random Sampling method based on the largest number of pig herd population, moderate population and lowest population, while the determination of respondents was done by Simple Random Sampling. The number of respondents for each village was 20 respondents, bringing the total number of respondents as a whole to 60 respondents. The research was conducted in Landono District for 6 months. For the results of the study are analyzed descriptively.

IV. Results and Discussion

4.1 Adult Age

The adult age of the pig thematic sex that was maintained by respondents at the research site in Landono Subdistrict was presented in Table 1.

Table 1. Adult Age of Pig Cattle

Research Village	Respondents	Age	
		Range	Average
Watabenua	20	6	6
Lalonggapu	20	6-7	6,18
Amotowo	20	6-7	6,18
Average	60		6,12

Source: Research Data processed, 2021

Table 1 shows the average adult age of pig cattle in Landono District is 6.12 months, at each research location obtained the average adult age of sex is Watabenua Village 6 months, while Lalonggapu Village and Amotowo Village are 6.18 months, with a range of 6-7 months. Pig herds begin to mature at 5-8 months of age, genital adults will be achieved longer in livestock that get less food, than livestock that get enough food. The cause of slow adult genitals is the factor of maintenance and feeding that is lacking in terms of quantity and quality.

4.2 Age of First Marriage

The first age mated pig cattle raised by respondents at the research site in Landono Subdistrict is presented in Table 2.

Table 2. First Age of Pigs in Mating

Research Village	First Age in Marriage (Month)		
	Respondents	Range	Average
Watabenua	20	7-8	7,9
Lalonggapu	20	8	8
Amotowo	20	7-8	7,9
Average	60		8,0

Source: Research Data processed, 2021

Table 2 shows the average age of first mated in pig cattle in Landon Subdistrict which is 8 months old with a range between 7-9 months. Respondents interviewed during the study that breeders married their pigs on the second day after showing symptoms of lust. Breeders do not want to marry the first lust on the grounds that they believe fertilization occurs.

The perfect time to marry a pig is during the second day of the sheep. This is useful for the production of more children and longer parent life. The cause of the late age of the first time to mate pig cattle is the slow growth of pigs to reach weights to be ready to mate. The slow growth is due to the lack of feed in terms of quantity and quality.

4.3 Lust Cycle (Estrus)

The lust cycle (estrus) is the time interval, starting from the beginning of the first estrus period to the next estrus period. The lust cycle is divided into several distinctly distinguishable phases proestrus, estrus, metestrus and diestrus. The cycle of beer and the ability of respondents in detecting lust in pigs in Landon Subdistrict were served in Table 3 and Table 4.

Table 3. Pig Lust Cycle

Research Village	Lust Cycle (Day)		
	Respondents	Range	Average
Watabenua	20	15	15
Lalonggapu	20	15	15
Amotowo	20	15	15
Average	60		15

Source: Research Data processed, 2021

Table 3 shows the average cycle of pigs raised by respondents at the study site which is 15 days. The results of this study are in accordance with research obtained by Suberata et al., (2016) that the cycle of lust occurs for 15 days. The length of the estrus cycle in pigs ranges from 18-24 days with an average of 21 days and the length of the estrus 1-5 days with an average of 2 days.

Table 4 shows that 55 (91.67%) of respondents are skilled at detection of estrus, while 5 (8.33%) respondents do not know the characteristics of lust in pigs. In general, respondents detected pigs by pressing on the back of pigs. In the condition of lust, the female pig will show a silent response or mating attitude, in addition to making a loud sound (screaming) that is not as usual. The results of observations during the study that the signs of lust that are often seen in female pigs are restless, unwilling to eat, the vulva swells, is still when her back is held, making a loud noise and likes to ride her co-star.

Table 4. Breeder's Ability to Detect Lust

Research Village	Able to Detect Lust	Percentage (%)	Unable to Detect Lust	Percentage (%)	Sum
Watabenua	18	90	2	10	20
Lalonggapu	18	90	2	10	20
Amotowo	19	95	1	5	20
Total	55		5		60

Source: Research Data processed, 2021

4.4 Number of Children

Litter size is the number of children born alive by each parent in a single birth. Local piglet litter size data in Landonu Subdistrict is presented in Table 5.

Table 5. Litter Size Local Pigs

Research Village	Litter Size		
	Respondents	Range	Average
Watabenua	20	7-11	9
Lalonggapu	20	7-11	9
Amotowo	20	8-11	9,5
Average	60		9,16

Source: Research Data processed, 2021

Pig cattle have a very high litter size number of between 8-10 tails. Table 5 shows that the average *litter size* of *pig cattle* in Landonu Subdistrict is 9.16. This figure is lower than the results of research Prasetyo et al., (2013) that litter size of pig cattle on Himalayan farms in Noelbaki Village, Kupang Regency reached 11.6 tails.

Factors that affect the size of litter size include, the age of the parent, the nation of the mother, the production of parent milk, the condition of the mother and males used and with good feeding there is a tendency to enlarge litter size. Prasetyo et al., (2013) states that factors that affect birth rates include hormonal states, food and stress during parent pregnant. Litter size will be affected by the period of birth of the mother, the pig nation, and how many times the mother has children.

4.5 Pig Weight

Birth weight is the average body weight of pig lets that are weighed immediately after birth. The average weight of piglets from the research site varied, namely the average birth weight (0.68 kg) age 5 days, the average birth weight (2.06 kg) age 7 days, the average birth weight (1.41 kg) age 8 days, (2.4 kg) age 14 days, (3.03 kg) age 21 days, (2.82 kg) age 30 days, (3.1 kg) age 45 days and (3.52 kg) age 60 days.

The average body weight of pig lets age 8 days is lower than the average body weight of pig lets age 7 days, due to weight weighing instead of in the same group. The weight of pig lets is related to the litter size of pig lets. Based on the results of research with a small litter size affects the birth weight of pig lets. Small litter size is caused by limited feeding when the mother breastfeeds, and is influenced by disease, and genetic factors, so the parent's milk production is not enough to meet the needs of the child. Pig lets that are small litter size have a high birth weight, conversely with a low birth weight have a high litter size.

The birth weight of pig lets is influenced by the pharitas, age of the mother, the nation and the number of children. Lack of protein in the mother during gardening can

affect the child's weight at birth followed by the development of children who only consume parent's milk, so that if the protein of low sow milk will also result in the growth of pig lets during breastfeeding until the release of the cow.

4.6 Pig Body Weight

The weight of the cow is the weight at the time the child is separated from its parent (Table 6) obtained the average weight of male and female pigs at the research site with varying ages is the average weight of the cow at 3 months is 4.82 kg male and female 4.23 kg, then at 4 months the weight of male and female is 6.38 kg male and 5.39 kg female. Furthermore, at the age of 5 months the average weight of males and females is 12.56 kg of males and females 7.53 kg.

Table 6. The Weight of Pig

Research Village	Weight (Kg)					
	3 Months		4 Months		5 Months	
	Male	Female	Male	Female	Male	Female
Watabenua	4,7	4,0	7,35	6,08	15,8	8,65
Lalonggapu	5,03	4,5	6,31	5,28	11,5	6,77
Amotowo	4,73	4,21	5,48	4,81	10,4	7,17
Average	4,82	4,23	6,38	5,39	12,56	7,53

Source: Research Data processed, 2021

The average weight of cattle obtained in this study is very small in value, because with good maintenance of pig weaned at the age of 8 weeks the weight can already reach 14 kg. This small weight is due to the released cattle distribution system. The time of pigs for each mother and breeder is different, so the feed consumed by the lactation mother is not enough to produce milk because at that time the development of pigs is very dependent on the consumption of mother's milk, thus because the parent's ability to produce milk will affect the growth of her off spring. Weaning weight is largely determined by gender, body weight, parent's age, the circumstances at which the livestock is born, the parent's ability to breastfeed, the quantity and quality of rations, as well as the temperature of the environment.

4.7 Weaning Age

Weaning is the youngest age at which the child can be separated from the parents without weight loss (Table 7) the average weaning time at the research site at 3 months of age with a time span of 2.5-3 months. Referring to table 7 data it is known that Lalonggapu Village and Amotowo Village have a shorter average weaning time of 2.95 months, compared to Watabenua Village which is 3 months, this illustrates that the age range of weaning in local pigs in Landono Subdistrict is 3 months. This shows that the average life of weaning in this study is longer than Landono Subdistrict. For the age of weaning, in Lalonggapu Village and Amotowo Village tend to be faster than Watabenua Village.

Table 7. Age of Pig Cattle

Research Village	Respondents	The Age of Weaning Pig Herds	Average Age of Pig Cattle
Watabenua	20	3	3
Lalonggapu	20	2,5-3	2,95
Amotowo	20	2,5-3	2,95
Average	60		3,0

Source: Research Data processed, 2021

Based on the results of interviews with breeders that breeders do faster weaning on pig herds, namely with the reason that sows can be mated again with the aim of accelerating the occurrence of gardening and also there is another factor that is considering the mother is very thin due to the child being breastfed too much for example 8-12 tails. Faster ignition (less than 4 week) depending on the quality of handling performed. It is stated that the factors that affect the beginning or absence of a weaning include, the mother factor, the child factor and the breeder himself.

V. Conclusion

The results showed that the average local pig at the age of 6.16 months and mated at the age of 8 months, with the number of children once born (litter size) 9.16 tails/birth with the average age of the cow separated from the mother at 3 months.

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