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RESEARCH ARTICLE

## Reproductive Performance of Pigs in Siriwini Village, Nabire District Nabire Regency

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ARTICLE INFO

ABSTRACT

*Keywords*

age at mating and first calving, litter size, calving interval, mortality.

The reproductive performance of sows is a reflection of the ability of sows to reproduce. The productivity of a sow is determined primarily by the number of offspring born in a litter (litter size) and by the number of offspring born in a year. This study aims to determine the reproductive performance of sows in Siriwini Village, Nabire District, Nabire Regency. The results of the study showed that the age of the first mating of pigs was 7-8 months with a percentage of 79.69%. The age of the first calving of sows was less than 12 months with a percentage of 81.25%. The number of offspring per birth (litter size), as many as 6-10 with a percentage of 70.31%. The calving period (calving interval), which is 2 times a year. The mortality rate of piglets was 1-2 with a percentage of 71.88%.

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## INTRODUCTION

The development of the livestock sub-sector is basically directed at increasing the income of livestock farmers supported by increasing the population and livestock production. One of the livestock that can be developed in the livestock sector is pigs. Pigs are one of the livestock commodities that are prolific in nature, so they have quite good potential to achieve an increase in population numbers through births. This is because pigs can consume food efficiently, very prolific, namely giving birth in two once a year and give birth to between 7-14 calves (Wheindrata, 2013).

Pig farming basically has two goals, namely to... obtain production results (meat and economic value for livestock farmers) strive for it) as well as in socio-cultural interests. Sihombing In Kaka Alexander (2017), the aim of raising pigs is to preserving traditions in a family. In addition to having the advantage of producing a large number of children, Pig farming also has the advantage of producing meat for developed in order to meet the demand for animal protein. Livestock Pigs have other advantages , namely rapid growth, feed convection which is very good and easy to adapt to the



environment. The need for livestock commodities such as pigs is one of the livestock commodities that have the potential to be developed (Tammu, 2019).

In the effort to develop and increase pig productivity, reproductive performance plays an important role in relation to efforts to increase pig livestock production. Reproductive performance includes: age of first mating, age of first calving, gestation period, birth period, litter size, weaning age, weaning weight and mortality. The productivity of a sow is determined primarily by the number of offspring born to the same sow (litter size) and by the number of offspring born in a year. The higher the litter size and the number of offspring born from a mother, the higher the productivity can be expected to be in a year or during the reproductive life of the mother (Ardana and Putra, (2008); Sudiastara and Budaarsa, (2015); Suberata, et al. (2016).

Nabire Regency is recognized as a region rich in natural resources, offering significant potential for the development of various agricultural sectors, particularly livestock farming. Among the livestock enterprises, pig farming holds a prominent position due to the favorable environmental conditions and cultural preferences in the area. Nabire District, in particular, is notable for having a relatively high pig population compared to other districts, which underscores its importance as a center for pig husbandry in the region. Within Nabire District, Siriwini Village stands out as one of the key localities where pig farming is practiced extensively.

Despite the prominence of pig farming in Siriwini Village, there remains a notable scarcity of detailed data regarding the reproductive performance of sows, which is a critical factor influencing productivity and sustainability in pig farming operations. Reproductive performance parameters such as litter size, farrowing interval, and weaning age are essential indicators that directly affect the efficiency and profitability of pig farms. However, the current information on these reproductive traits in Siriwini Village is limited, hindering the ability of farmers, extension workers, and policymakers to make informed decisions aimed at improving breeding management and overall herd performance.

Given this context, there is a compelling need to undertake systematic research focused on assessing the reproductive performance of sows in Siriwini Village. Such research will provide valuable insights into the reproductive efficiency of local pig populations, identify potential constraints, and offer recommendations for enhancing breeding practices. Understanding these reproductive parameters is not only vital for optimizing production but also for supporting the livelihoods of farmers who depend on pig farming as a primary source of income (Yumai et al., 2024).

Therefore, this study aims to investigate the reproductive performance of sows in Siriwini Village, Nabire District, Nabire Regency. By generating comprehensive and reliable data, the research seeks to contribute to the development of sustainable pig farming practices in the region, ultimately supporting the broader goals of agricultural development and food security in Nabire.



## LITERATUR REVIEW

### Importance of Pigs in Siriwini Village

In many parts of Papua, including Siriwini Village, pigs hold significant cultural, social, and economic value. They are often used in traditional ceremonies, as sources of protein, and as assets for trade and wealth storage. Pigs in this region are typically raised in smallholder systems, where management practices and environmental conditions can significantly impact reproductive outcomes.

### Factors Influencing Reproductive Performance

Several factors influence the reproductive performance of pigs, including genetics, nutrition, health status, environmental conditions, and management practices. Key parameters include:

#### 1. Genetics and Breed Selection

- The choice of pig breed significantly impacts reproductive traits. Local breeds, often more adapted to harsh environmental conditions, may have lower litter sizes but higher resilience compared to commercial breeds like Landrace or Large White.

#### 2. Nutrition and Feeding Management

- Proper nutrition is essential for maximizing reproductive efficiency. Inadequate feeding during gestation and lactation can lead to poor litter sizes, lower birth weights, and reduced piglet survival.

#### 3. Health and Disease Control

- Diseases like swine fever, internal parasites, and respiratory infections can severely impact reproductive rates by reducing fertility and increasing piglet mortality.

#### 4. Environmental Factors

- High humidity, temperature stress, and poor housing conditions in tropical regions like Nabire can negatively affect reproductive performance.

#### 5. Management Practices

- Efficient breeding management, including timely mating, proper housing, and reducing stress during farrowing, are critical for improving reproductive outcomes.



## METHODOLOGY

### A. Time and Place of Research

This research was conducted for 1 (one) month, namely during March 2025, located in Siriwini Village, Nabire District, Nabire Regency.

### B. Research Objects and Tools.

The object of this research is the pig farmers in Siriwini Village, Nabire District. While the tools used in the study were a list of question guides (questionnaires), writing instruments, books, and cameras.

### C. Research methods.

The method used in this research is the Descriptive method, with observation techniques and direct interviews in the field. Data collection was obtained by conducting direct interviews in the field referring to a prepared list of questions. Observations were conducted at each respondent's farm location and documentation.

### D. Data Collection Techniques and Data Types.

Data collection in this study was carried out in the following manner:

- 1) direct observation at the research location, namely the initial stage carried out to determine the research location and determine respondents in this study.
- 2) The questionnaire is in the form of a list of questions about the system and management of pig husbandry by pig farmers in Siriwini Village, Nabire District.
- 3) Interviews, used to obtain accurate data and information. Structured interview methods using questionnaires and unstructured interviews.
- 4) Field observations were conducted through observation and recording of studies that were expected to affect the results of the study. Observations were conducted in order to obtain data on the condition of pig farms and the performance of piglets in Siriwini Village, Nabire District.

The types of data collected in this study consist of 2 types of data, namely primary data and secondary data.

- 1) Primary data, in the form of questions to pig farmers about farmer profiles and the performance of parent pigs.
- 2) Secondary data is data sourced from the Animal Husbandry Office, Extension Agency Office, District Office and other Government Agencies related to this research.

### E. Respondent Determination.

Respondents in this study were all pig farmers in Siriwini Village, Nabire District, so the data collection technique was carried out by census.



## F. Observation Variables.

Observation variables in this study include:

- 1) profile, including : age, education level, main livelihood, length of farming, number of livestock owned .
- 2) Reproductive performance of sows includes: age at first mating, age at first calving, calving period , *litter size* (number of offspring born), calving interval and mortality (piglet death rate).

## G. Data analysis.

The data obtained in this study or data collected through interviews using a questionnaire in the field in this study, were tabulated according to the data category in terms of quantity and percentage.

# RESULT AND DISCUSSION

## A. Overview of Research Location.

This research was conducted in Siriwini Village, Nabire District. Nabire District is located between 135030' - 135038' East Longitude and 3017' - 3027' South Latitude with the northern boundary bordered by Cendrawasih Bay, the southern boundary bordered by Uwapa District, the eastern boundary bordered by Kimi Bay District and the western boundary bordered by West Nabire District.

## B. Profile of Pig Farmers in Siriwini Village, Nabire District.

The research results describing the profile of pig farmers in Siriwini Village, the research location, are presented in Table 1, below.

Table 1. Profile of Pig Farmers in Siriwini Village, Nabire District.

No	Farmer/Respondent Profile	Number of Respondents (KK)	Percentage (%)
1.	<b>Age (Years):</b>		
	- < 30	2	3.03
	- 30-50	39	59.09
	- 51-60	22	33.33
	- > 61	3	4.55
	<b>Amount</b>	<b>66</b>	<b>100</b>
2.	<b>Level of education:</b>		
	- Did not graduate from elementary school	5	7.58
		10	15.15
		15	22.73
	- SD	30	45.45
	- Junior High School	6	9.09
	- Senior High School		



	- Bachelor <b>Amount</b>	<b>66</b>	<b>100</b>
<b>3.</b>	<b>Time :</b> - 1-5 years - 5 years <b>Amount</b>	19 47 <b>66</b>	28.79 71.21 <b>100</b>
<b>4.</b>	<b>Livestock System</b> - Extensive - Semi Intensive - Intensive <b>Amount</b>	- 66 - <b>66</b>	- 100 - <b>100</b>
<b>5.</b>	<b>Number of Livestock Ownership</b> - 1- 5 tails - 6 -10 tails -> 11 <b>Amount</b>	51 12 2 <b>66</b>	78.79 18.18 3.03 <b>100</b>

Source: Primary Data Processing (2025).

The research results obtained from data obtained from the research location and filling out the questionnaire in Siriwini Village , Nabire District, there are 66 pig farmer households as respondents, where these pig farmers have generally settled and lived in Siriwini Village, Nabire District for a long time.

From Table 1 , it can be seen that the age of pig farmers in Siriwini Village is mostly dominated by the age of 30-50 years, which is 59.09%, originating from 39 families from a total of 66 respondents. The age range of these farmers is included in the productive age group, as stated by Manulang (1974), that the productive age is achieved at the age of 30 years, while according to Adiwilaga (1973), in Suradisastro and Kusnadi (1980), that the age or productive age of a worker is achieved at the age of 40-50 years. At that age, their physical and mental conditions are in fairly good condition. This indicates that the pig farming business in Siriwini Village is carried out by productive workers in running their pig farming business in Siriwini Village.

Pig farmers in Siriwini Village , who did not graduate from elementary school, as many as 5 families or 7.58%, while the remaining 61 families or 92.42% have an educational background of elementary school graduates to college graduates (Bachelor's degree). The highest level of education of livestock farmers is high school graduates, consisting of 30 families with a percentage of: 45.45 % , then farmers who graduated from elementary school, as many as 10 families or 15.15%, farmers who graduated from junior high school, as many as 15 families with a percentage of: 22.73% and farmers who graduated from college (Bachelor's degree) are as many as 6 families or 9.09%. The level of education affects the pattern and logic of thinking, motivation and the ability to absorb knowledge and technology or new innovations. According to Haryadi and Syahlani (1999), high levels of education influence the work motivation of livestock farmers because of the maturity of their thinking.



Pig farming activities in Siriwini Village have been going on for quite a long time, this is in line with the research data, which was obtained, that the longest pig farming experience in Siriwini Village with a percentage of: 71.21 %, came from 47 families out of a total of 66 families with a farming period of more than 5 years (> 5 five years) and a farming period of 1-5 years, amounting to 28.79% of the 19 families. The length of pig farming experience by pig farmers in Siriwini Village is an important factor for farmers in considering and making decisions to determine the type of livestock raised and which is most beneficial for them. Experience business a rt in y as e makin For a long time , pig farmers have been doing their own business , so there are more and more experiences . which is obtained in such a way , problems - problems , knowledge and the ability to develop his business . Long experience a person who lives in nature looking at livestock can have a greater influence on Some of the advantages and disadvantages of livestock farming , because more and more l a m a n e r s i o n so practical knowledge acquired And related to with businesses are growing more and more .Pork business is a business that has been running for a long time Siriwini Village

The research data obtained the number of pigs owned by pig farmers in Siriwini Village is the largest, most of them are pig farmers who have 1-5 pigs, from 52 families or 78.79% and a small number of pig farmers have more than 11 pigs, which is 3.03% from 2 families and those who have 6-10 pigs, namely 18.18% from 12 families. This shows that, from the largest number of pigs owned, it is still a small and medium pig farming business or a household pig farming business because the pigs owned are not as many as large pig farming businesses, which are specifically managed for large pig farming businesses.

### C. Reproductive Performance of Sow Pigs in Siriwini Village, Nabire District.

The results of the study describing the reproductive performance of sows in Siriwini Village, the research location, are presented in Table 2, below.

Table 2. Reproductive Performance of Sow Pigs in Siriwini Village, Nabire District.

No	Pig Livestock Productivity	Number of Parents ( tail )	Percentage (%)
1.	<b>Age at first marriage</b> - Age 7 - 8 months - Age 9 - 10 months - Age > 10 months <b>Amount</b>	51 13 - 64	79.69 20.31 - 100
2.	<b>Age of first birth of mother</b> - Age < 12 months - Age 12 months - Age > 12 months <b>Amount</b>	52 12 - 64	81.25 18.75 - 64
3.	<b>Number of children per birth ( litter size )</b>	45	70.31





	- 6-10 tails	15	23.44
	- 11-12 tails	4	6.25
	- >12 tails	64	64
	<b>Amount</b>		
<b>4.</b>	<b>Calving Interval</b>		
	- 2 x / year	64	100
	- 3 x / year	-	-
	<b>Amount</b>	64	100
<b>5.</b>	<b>Piglet mortality rate/ birth (mortality)</b>		
	- 1-2 tails	46	71.88
	- 2-3 tails	11	17.18
	- -> 3 tails	7	10.94
	<b>Amount</b>	64	100

Source: Primary Data Processing (2025).

The research data on the performance of the parent pigs in Siriwini village are presented in table 2 above. The table shows that the age of the first mating of pigs in Siriwini village is mostly around 7-8 months, from 51 families (79.69%) and the least, the age of the first mating is 9-10 months. from 13 families (20.31%), for the age of the first mating of female pigs more than 10 months in Siriwini village, there are none. In general, the age of the first mating of pigs in Siriwini village is around 7-8 months, faster than the age of mating of pigs in general, which is around 8-10 months. This phenomenon indicates that pigs have a good fertility rate, this is thought to be influenced by the type of pigs raised in Siriwini village, which is a local type of pig, which has a good fertility rate. The results of direct interviews at the research location, research data showed that there was interference from the Siriwini village apparatus, where, almost every year the budget runs, both from the Siriwini Village fund allocation and assistance from the Nabire Regency government, providing a lot of livestock assistance, including pigs and other livestock to pig farmers and other farmers in Siriwini Village, where the most widely raised livestock in Siriwini Village is pigs, in addition to other livestock.

For the age of the first calving of sows in Siriwini village , the majority were less than 12 months old, from 52 families with a percentage of 81.25% and the lowest age of the first calving of sows, at the age of 12 months, from 12 families with a percentage of 18.75%. For the age of the first calving of sows over 12 months, there were none. From the data of the first calving age of the sow, it is related to the first age of the sow mated. Where the first calving age of the sow is less than 12 months, so from the results of the data of the first calving age of the sow in the pig farm in Siriwini village , the first calving age of the sow is less than 12 months.

Data on the number of litters per birth or *litter size* in Siriwini Village , which is 6-10 heads amounting to 70.31% of the 45 families, while the number of litters per birth is 6-12 heads, amounting to 23.44% of the 15 families and the rest is the number of litters per birth of more than 12 heads, coming from 4 families with a percentage of 6.25%. From the *litter size data* obtained from pig farms in Siriwini Village , which is the most in





the number of litters per birth as many as 6-10 heads, this provides an illustration that the number of litters per birth obtained from the results of this study is still low or below the ideal *litter size*. Where Baliarti et al., (1999), stated that, sows generally give birth to 6-12 offspring.

This low *litter size* is likely related to the feed consumed by the mother is not sufficient in terms of quality and quantity and also by the condition of the mother itself. Factors that affect the size of *the litter size* include, the age of the mother, the breed of the mother, the milk production of the mother, the condition of the mother feed and the male used (Anonymous, 2002) and with good feeding there is a tendency to increase *the litter size*. The calving period of the mother pigs in Siriwini village, all 100% of the 64 respondent families, the calving period is 2 times a year.

The number of piglet deaths or mortality of 1-2 piglets was 71.88% of 46 families, while the number of piglet deaths of 2-3 piglets was 17.18% of 11 families and the number of piglet deaths of more than 3 piglets per birth was 10.94% of 7 families in Siriwini village.

Piglet mortality data from research on pig farmers in Siriwini village, it can be said that the reproductive performance of sows is still low, this can be seen from *the litter size*. low, this is as stated by Baliarti et al., (1999) that, sows generally give birth to 6-12 offspring, where the low *litter size*, the mortality is also low and the high *litter size*, the mortality is also high.

From the data obtained from pig farms run by pig farmers in Siriwini Village in this study, the general description of the livestock business run by pig farmers in Siriwini Village is that pig farming is still a household business. The type of pig that is widely farmed is a local pig and the livestock system is still a household business, with the number of livestock owned 1-5 pigs. The pig farming business in Siriwini village is a household business. Most of the pig farmers in Siriwini village are native Papuans, where pig farming is a long-standing culture that is a legacy, passed down from parents, and is a savings that can be sold at any time.

## CONCLUSION

Based on the research results, it can be concluded that the reproductive performance of female pigs in Siriwini village is still low, still a household business with the following indicators:

1. The age of first mating of pigs is 7-8 months with a percentage of 79.69 %.
2. The age of the first birth of sows is less than 12 months with a percentage of 81.25 %.
3. The number of offspring born ( *litter size* ) is 6-10 with a percentage of 70.31%.
4. The calving period ( *calving interval* ), which is twice a year.
5. The mortality rate of 1-2 piglets was 71.88 %



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