INTRODUCTION

Pesirir cows belong to a cattle family separate from other natives or local Indonesian livestock, due to the varied characteristics. There is a significant increase in production with the supply of high quality breeds at the Superior Livestock Breeding and Animal Feed Center (SLBAFC), Padang Mangatas. This is attained through the deployment of management strategies, in an attempt to maximize pasture rotation and other forms of grazing. Furthermore, a natural mating process introduces a superior male with high reproductive potential to fertilize a group of 180 adult cows in 2 months.

Based on the decree of the Minister of Agriculture No. 2908 / Kpts / OT.140 / 6/2011 dated 17 June 2011, the Pesirir cattle demonstrate distinctive characteristic of a brick-red dominant body color varying between yellow,
brown, and black, with blonde lashes. In addition, the back line shows blackish-brown, white legs, black tail hair, small body shape, gumba, wattle, tiny horns, and the ears are turned sideways. The minimum bull selection requirement according to Indonesian National Standard (SNI) 7651.6: 2015 include Pesisir breeds aged 18–24 months of shoulder height 92cm, body length 94cm, chest circumference 111cm, and scrotal boundary 20cm. Specifically, conditions for aged bulls > 24–36 months comprise shoulder height 100cm, body length 108cm, chest circumference 124cm, and scrotal boundary 21cm (BSN, 2015), in addition to an assessment on semen quality, SNI 4869.1: 2017 (BSN, 2017). However, only specimens with the specified features are used.

In addition, there are no criteria for the selection of superior bulls for the purpose of mating in the past, and reproductive failure reaches 20%, because of low copulating ability. Meanwhile, sexual impulse is influenced by the level of libido (Ashwood, 2009), therefore bulls with high drive tend to produce a greater number of viable semenatozoa through repeated ejaculation in a relatively short time (Rehman et al., 2016). Evaluation superior bull for the purpose of mating based on results of the libido effect levels on age, height, weight, testosterone concentration, and semen quality.

The bull age significantly affects semen quality improvement, which reduces after a certain period (Mahmood et al., 2014). Also, the semen quality at certain period gradually decreases after 100 weeks with the tendency to further increase above 300 weeks (Nyuwita, 2015). Semenatogenesis and bull fertility depending on the availability of testosterone, and meiosis is not attainable without this hormone (William, 2011). In addition, concentrated quantities influence libido level to various extent, depending on the individual species (Mahmood et al., 2013).

However, SNI 7651.6: 2015 only determines the minimum requirements of the breeders without complementing the criteria for high reproductive abilities, and hence does not guarantee successful selection during natural mating. This prompts the need for an investigation to determine the selection criteria for active bulls by analyzing several factors affecting libido levels, including age, height, weight, testosterone concentration and semen quality.
The examination of the fresh semen quality was performed macroscopically and microscopically. Macroscopic provision includes: 1) Measuring pH by placing cement on litmus paper. 2) Visually observing the color after holding, as good cement appears beige; 3) Consistency is determined by simply tilting the collection tube and then straightening it back up. The cement drops slowly to indicate high concentration, while a fast release shows the concentration is low. Microscopic examination includes: 1) Individual motility is observed on the motion of the semenatozoa using a microscope with 400x magnification. The motility criteria for semenatozoa are as follows: 0%; immotile semenatozoa are immobile; 50%: semenatozoa move in a circle, less than 50% are progressively and also not wavy; 50-80%: semenatozoa move gradually and produce mass movement; 90%: progressive motion is agile and forms waves; 100%: very progressive and also shows fast waves; 2) Viability and abnormality of semenatozoa, was observed based on differential staining using eosin nigrosin dye. The preparations were achieved under a 400x magnification light microscope. When the preparation is activated, it tends to show white coloration, while dead semenatozoa extends to red due to absorbed eosin color. Furthermore, the number of live and dead semenatozoa is counted from 200 semenatozoa cells. 3) Concentration of semenatozoa are evaluated using haemocytometer pipette and a Neubauer counting chamber. The cement was sucked up to a scale of 0.5 and then mixed with 3% NaCl. Subsequently, the solution was agitated for 2-3 minutes to form a homogenous composition. Then, the sample was observed in a Neubauer counting chamber with a light microscope of 400x magnification. The calculation of semenatozoa concentration in the number of rooms are counted as five boxes with 80 small rooms multiplied by 10 per milliliter (Indriani et al., 2013).

**Table 1: Scoring Response Aggressiveness of Bulls to Cows**

| Score | The Response of Bulls to Cows |
|-------|------------------------------|
| 0     | Bull ignores cows           |
| 1     | Bull approach cows or teasers|
| 2     | Bull approach cows or teasers and insufflating |
| 3     | Bull approach cows or teasers, insufflating and then followed by trying to mating without being copulation |

Low Aggressiveness <1; Moderate Aggressiveness > 1 to <2; High Aggressiveness ≥ 2

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Table 2: Data of Physical examination cows and bulls

| Physical examination | Pesisir Cattle | Bulls |
|----------------------|---------------|-------|
|                      | Cows          | Standard Value | Average ±SD | Standard Value | Bulls |
| Age (month)          | 18-24         | 18-24 | 24-48 | 24-36 | SNI 7651.6:2015 |
| BH (cm)              | 129.77±1.30   | 91    | 124.33±11.10 | 100 | SNI 7651.6:2015 |
| CC (cm)              | 145.88±8.57   | 123   | 142.26±19.07 | 124 | SNI 7651.6:2015 |
| BW (kg)              | 256.67±38.28  | 149.1±18.2 | 250.93 ±87.43 | 162.2±25.4 | SK Mentan No. 2908/Kpts/OT.140/6/2011 |
| BCS                  | 3-4           | 4-5   | 25.3±6.75 | 21 | SNI 7651.6:2015 |

BH = Body Height; CC = Chest Circumference; BW = Body Weight; BCS = Body Condition Score; SB = Scrotal Boundary

Factors Test That affects Libido

The assessment involved investigating the effects of age, height, weight, testosterone concentration, and semen quality on libido.

Data Analysis

The generated data were analyzed through cross-tabulation to evaluate the libido level, while Spearman’s correlation was employed to ascertain the factors affecting libido. Statistical analysis was conducted with the Statistical Package for Social Science (SPSS) for Windows version 16.

Results and Discussion

Stage 1, Selection of Cows and Bulls

Physical Examination Results of Cows and Bulls

This examination was performed to determine the effect of age, height, weight, and BCS on the reproduction and heat status of cows.

Table 2 showed higher values, exceeding the minimum standard requirements according to SNI 7651.6: 2015 and Minister of Agriculture Decree No. 2908/Kpts/OT.140/6/2011. This indicates the pasture rotation - grazing system was well maintained and the tendency for high quality selection and bull replacement in certain periods to improve Pesisir cattle performance. This opinion as supported by Brantly (2013), where the management strategies utilized reportedly possessed the potential to maximize livestock growth, resulting from sufficient feeding from tastier and more nutritious forage leaves. The determination of suitable feed is achieved using palatability test, known as the degree of preference for certain foods served to livestock. However, there is a need to substitute the bulls every third calves to avoid inbreeding. The bulls are replaced or abandoned after natural mating until the cows calves three times.

Examination of Reproductive Status Toward Reproductive Disorders

Table 3 shows the screening, performed to ascertain the reproductive disease-free status assumed to influence the heat cycle in cows, and also the libido levels in bulls.

Table 3: Examination Data for Reproductive Disorders

| Reproductive Disorders | 24 Pesisir Cattle |
|------------------------|-------------------|
|                        | 9 Cows | 15 Bulls |
| Brucellosis            | ( - ) | ( - ) |
| IBR                    | ( - ) | ( - ) |
| BVD                    | ( - ) | ( - ) |
| ParaTB                 | ( - ) | ( - ) |
| BGC                    | ( - ) | ( - ) |
| EBL                    | ( - ) | ( - ) |
| Trichomoniasis         | ( - ) | ( - ) |
| Leptospirosis          | ( - ) | ( - ) |

IBR = Infectious Bovine Rhinotracheitis; BVD = Bovine Viral Diarrhoea; ParaTB = Para Tuberculosis; BGC = Bovine Genital Campylobacteriosis; EBL = Enzootic Bovine Leucosis; ( - ) = Negative

Table 3 showed negative values for 9 cows and 15 bulls selected after testing in accordance with the animal health development strategic plan, Directorate of Animal Health, Directorate General Livestock and Animal Health, Ministry of Agriculture. Furthermore, Brucellosis, IBR, BVD, BGC, ParaTB, EBL, Trichomoniasis and Leptospirosis are infectious animal diseases forbidden in livestock breeds (Bahri and Martindah, 2005).

Cows Selection

Table 4 shows the cow selection requirements including physical examination, reproductive pregnancy and heat status, among others.

Table 4 shows all non-pregnant cows with heat, based on the dominant follicle/de Graaf growth obtained from six...
Table 4: Examination Data of Reproductive Status on Pregnancy and Heat

| Cows Number | Reproductive Status | Pregnancy Status | Follicular Growth | Follicular Phase | Symptoms of Heat | Heat Status |
|-------------|---------------------|------------------|------------------|-----------------|-----------------|-------------|
| C1          | (-)                 | DF/dG            | F                | WSH             | H               |
| C2          | (-)                 | DF/dG            | F                | WSH             | H               |
| C3          | (-)                 | DF/dG            | F                | WSH             | H               |
| C4          | (-)                 | DF/dG            | F                | NSH             | SH              |
| C5          | (-)                 | DF/dG            | F                | NSH             | SH              |
| C6          | (-)                 | DF/dG            | F                | NSH             | SH              |
| C7          | (-)                 | NDF              | L                | NSH             | NH              |
| C8          | (-)                 | NDF              | L                | NSH             | NH              |
| C9          | (-)                 | NDF              | L                | NSH             | NH              |

C1-9 = Cow 1-9; (-) = Non-pregnant; DF/dG = Dominant Follicle/de Graaf; NDF = Non Dominant Follicle; F = Follicular; L = Luteal; WSH = With Symptoms of Heat; NSH = Non Symptoms of Heat; H = Heat, SH = Silent Heat; NH = Non Heat.

Table 5: Data on Reproductive Status Examination to Testosterone Concentration and Semen Quality Compared to SNI Standard Values and Other Bulls

| No. | Types of Test                  | Average ± SD | Standard Values                          |
|-----|--------------------------------|--------------|-----------------------------------------|
| 1   | Testosterone Concentration (µg/ml) | 9.63 ±5.25   | Bulls Cholistani AI (Mahmood, et al., 2013) |
|     |                                | 5.66±1.08    | Bulls Karan Fries crossbred (Holstein Friesian×Tharparkar) (Rajak, et al., 2014) |
|     |                                | 2.82±1.99    | Bulls Kuantan (Anwar and Jiyanto 2019)   |
| 2   | Characteristics of Fresh Cement |              |                                         |
| a.  | Macroscopic                    |              |                                         |
|     | Color                          | Milky white-Creamy | Milky white-Creamy   | Toelihere, 1984 |
|     | pH                             | 6.7±0.25     | 6,2-7,5                  | Toelihere, 1985 |
|     | Consistency                    | Dilute-thick | Dilute-thick              | Toelihere, 1985 |
|     | Smell                          | Specific     | Specific                  | Toelihere, 1985 |
| b.  | Microscopic                    |              |                                         |
|     | Motility (%)                   | 55.8±16.10   | ≥ 50                       | SNI 4869.1:2017 |
|     | Concentration (10^6/ml)        | 645.73±208.92 | ≥ 500                      | Zaituni, 2009  |
|     | Life (%)                       | 65.27±14.36  | > 50                       | Zaituni, 2009  |
|     | Abnormalities (%)              | 24.07±5.96   | < 20                       | Zaituni, 2009  |
| 3   | Semen Quality                  |              |                                         |
| a.  | 11 Bulls                       | Good Quality |                                         |
| b.  | 4 Bulls                        | Bad Quality  |                                         |

Follicular phases, resulting in three symptoms of heat, non-heat and silent heat, while a total of three were in the luteal phase. According to Waluyo (2014), these symptoms are affected by the production of estrogen hormone by ovaries. Furthermore, there is an increase in estrogen levels at the final phase of maturity of de Graaf follicles. This promotes receptiveness and heat symptoms, including the appearance of swollen and reddish vagina and vulva, several clear and transparent cervix mucus, and vagina flow. Also, heat symptoms are not very obvious in young (newly puberty) or adult cows with several calves.

Bulls Selection

Besides the physical examination, Table 5 shows the two determinant criteria for high intensity superior mating needed to examine the reproductive status. These include testosterone concentration and semen quality.
Table 6: Assessment Data on Response of Bulls to Cows.

| Bulls Number | Response Score of Bulls to Cows | Silent Heat | Non Heat |
|--------------|---------------------------------|------------|---------|
|              | Heat                            | CH1 | CH2 | CH3 | X  | CSH1 | CSH2 | CSH3 | X  | CNH1 | CNH2 | CNH3 | X  |
| B1           | 3                               | 2   | 2   | 2  | 2,33 | 2    | 0    | 1,33 | 0  | 0    | 0    | 0    | 0  |
| B2           | 2                               | 2   | 1   | 1  | 1,67 | 1    | 1    | 1    | 1  | 0    | 0    | 0    | 0  |
| B3           | 1                               | 1   | 1   | 1  | 1,00 | 1    | 0    | 1    | 0  | 0,67 | 1    | 1    | 0  |
| B4           | 3                               | 2   | 2   | 2  | 2,33 | 1    | 0    | 1    | 0  | 0,67 | 1    | 0    | 0  |
| B5           | 2                               | 2   | 2   | 2  | 2,00 | 0    | 1    | 0    | 0  | 0,33 | 0    | 1    | 0  |
| B6           | 2                               | 2   | 1   | 1  | 1,67 | 0    | 1    | 0    | 0  | 0,33 | 0    | 0    | 0  |
| B7           | 2                               | 2   | 1   | 1  | 1,67 | 2    | 1    | 1    | 1  | 1,33 | 1    | 0    | 0  |
| B8           | 2                               | 2   | 1   | 1  | 1,67 | 0    | 1    | 0    | 0  | 0,67 | 1    | 0    | 0  |
| B9           | 2                               | 2   | 1   | 1  | 1,67 | 0    | 0    | 0    | 0  | 0,00 | 0    | 1    | 0  |
| B10          | 2                               | 2   | 1   | 1  | 1,67 | 2    | 1    | 1    | 0  | 1,00 | 0    | 0    | 0  |
| B11          | 2                               | 2   | 1   | 1  | 1,67 | 0    | 0    | 0    | 1  | 0    | 0    | 0    | 0  |
| B12          | 0                               | 0   | 0   | 0  | 0,00 | 0    | 0    | 0    | 0  | 0,33 | 0    | 0    | 0  |
| B13          | 1                               | 1   | 0   | 0  | 0,67 | 1    | 0    | 0    | 0  | 0,33 | 1    | 0    | 0  |
| B14          | 0                               | 0   | 0   | 0  | 0,00 | 0    | 0    | 0    | 0  | 0,00 | 0    | 0    | 0  |
| B15          | 1                               | 1   | 1   | 1  | 1,00 | 0    | 1    | 1    | 0  | 0,67 | 0    | 0    | 0  |
| X            | 1,67                            | 1,53| 1,00| 1,40| 0,67 | 0,60 | 0,53 | 0,60 | 0,47| 0,20 | 0,00 | 0,22|

B1-15 = Bull 1-15; CH = Cow Heat; CSH = Cow Silent Heat; CNH = Cow Non Heat; Low Aggressiveness <1, Moderate Aggressiveness ≥1 to <2; High Aggressiveness ≥2; X = Average

Table 5 compares the average value of testosterone concentration in Pesisir bulls with Cholistani AI, crossbred Karan Fries, and Kuantan. The result shows Pesisir as a superior breed, with semen quality of 11 in the good and 4 in bad categories, alongside a minimum of 50% semen motility (SNI 4869.1: 2017).

Testosterone is an androgen in the testes, responsible for supporting semenatogenesis. The main function is to maintain the blood barrier testes, bond Sertoli–semenatids, and release adult semen (William, 2011). Noakes, et al. (2016) reported on the need for testosterone in semen production and subsequent maturity in the epididymis. This hormone has also been implicated in semen quality.

**Stage II, Criteria for Superior Bulls with High Mating Intensity**

Results of Assessment Bulls Aggressive Response to Cows Table 6 shows the aggressive response of bulls to heat, silent heat, and non-heat in cows.

Table 6 shows the Cross-tabulation test analysis, and the results indicate aggression conditions of bull libido towards heat and silent heat, but less to non-heat. Furthermore, the response by percentage to heat is 20% high, 60% medium, and 20% low, while to silent heat was 26.7% moderate and 73.7% low, and non-heat was 100% low. Therefore, bulls with lower aggressive response to heat, silent heat and non-heat likely result from the different amounts of pheromone hormone stimulation issued in each heat status. Achmad, et al. (2017) affiliated the desire of bulls to mount cows with the stimuli received from sight, smell, touch, and hearing senses. In addition, there is a higher tendency for aggressiveness, when the cows experience a combination of heat responsible for the emission of fluid and odor pheromones. Baliarti et al. (2019) also corroborates the higher ability for bulls to naturally exhibit different attitudes towards the cycle and behavioral expressions during heat in cows. This is influenced by the chemical compounds or pheromones produced, indicating the entry into heating phase. Therefore, bulls capture specific odor, and is assumed to be stimulated by the appearance of sexual signs behavior.

Table 7: Data Analysis of Factors Affecting Libido Level.

| Parameters | Libido | Correlation Coefficient | Significance |
|------------|--------|-------------------------|--------------|
| Age        |        | 0.696 **/SC             |              |
| BH         |        | 0.563 */MC              |              |
| BW         |        | 0.624 */SC              |              |
| TC         |        | 0.813 **/VSC            |              |
| CQ         |        | 0.618 */SC              |              |

BH = Body Height; BW = Body Weight; TC = Testosterone Concentration; CQ = Cement Quality; ** = Highly Significant (P<0.01); * = Significant (P<0.05); VLC = Very Low Correlation (0.00-0.19); LC = Low Correlation (0.20-0.39); MC = Moderate Correlation (0.40-0.59); SC = Strong Correlation (0.60-0.79); VSC = Very Strong Correlation (0.80-1.00)
Table 8: Data Assessment of Aggressive Response of bulls in Age Groups to cows

| Bulls Age (month) | N  | Bulls Height (cm) | Bulls Weight (kg) | Bulls Testosterone Concentration (ng /ml) | Motility Semen (%) |
|-------------------|----|-------------------|-------------------|------------------------------------------|-------------------|
| 24                | 5  | 113,4±37,8        | 168±35,21         | 6,58±5,03                                | 46,40±17,30       |
| 30                | 5  | 125,2±10,03       | 245±79,62         | 8,14±4,40                                | 57,00±17,89       |
| 36                | 2  | 133,5±17,8        | 332,5±3,54        | 13,04±4,34                               | 65,00±7,07        |
| 48                | 3  | 135±0             | 344,67±34,43      | 14,93±3,44                               | 63,33±12,58       |

N = Number of Samples; Low Aggressiveness <1; Moderate Aggressiveness > 1 to <2; High Aggressiveness ≥ 2

Table 9: Determination Of Criteria For Superior Bull With Mating High Intensity To Cows.

| Bulls Number | Age | BH | CC | BW | SQ | TC | SB | CH | CSH | CNH |
|--------------|-----|----|----|----|----|----|----|----|-----|-----|
| B1           | 36* | 132*| 160*| 330*| G* | 9,97*| 31,5*| H* | M   | L   |
| B2           | 36  | 135 | 133 | 163 | G  | 16,11| 33,0 | M  | M   | L   |
| B3           | 48  | 135 | 158 | 320 | G  | 16,91| 31,5 | M  | L   | L   |
| B4           | 48* | 135*| 160*| 330*| G* | 16,93*| 31,5*| H* | L   | L   |
| B5           | 48* | 135*| 163*| 384*| G* | 10,96*| 33*  | H* | L   | L   |
| B6           | 30  | 130 | 150 | 272 | G  | 5,06 | 27,0 | M  | L   | L   |
| B7           | 30  | 134 | 158 | 320 | G  | 10,11| 30,0 | M  | M   | L   |
| B8           | 30  | 133 | 156 | 308 | G  | 10,14| 28,5 | M  | L   | L   |
| B9           | 30  | 117 | 130 | 190 | G  | 13,16| 21,0 | M  | L   | L   |
| B10          | 30  | 112 | 115 | 135 | B  | 2,24 | 15,0 | M  | M   | L   |
| B11          | 24  | 120 | 135 | 210 | B  | 5,28 | 25,5 | M  | L   | L   |
| B12          | 24  | 114 | 120 | 150 | B  | 4,75 | 18,0 | L  | L   | L   |
| B13          | 24  | 119 | 133 | 202 | G  | 13,86| 22,5 | L  | L   | L   |
| B14          | 24  | 112 | 115 | 135 | B  | 0,34 | 15,0 | L  | L   | L   |
| B15          | 24  | 102 | 118 | 143 | G  | 8,65 | 16,5 | M  | L   | L   |

B1-15 = Bull 1-15; BH = Body Height; CC = Chest Circumference; BW = Body Weight; SQ = Cement Quality; TC = Testosterone Concentration; SB = Scrotal Boundary; CH = Cows Heat; CSH = Cows Silent Heat; CNH = Cows Non Heat; H = High; M = Moderate; L = Low; G = Good; B = Bad; * = Selected Criteria

Test Factors Affecting Libido Level

Table 7 shows the analysis results of factors influencing the libido level. These include age, height, weight, testosterone concentration, and semen quality.

The analysis results showed a very significant effect of age and testosterone concentration at (P<0.01) on libido levels, while the influence of height, weight, and semen quality were at (P<0.05). Furthermore, a strong correlation of (0.80-1.00) exists between testosterone concentration and libido levels, while age, weight, and semen quality was (0.60-0.79). However, height had a moderate correlation at (0.40-0.59).

Table 8 shows the bull libido level towards cows, with respect to age groups of 24, 30, 36, and 48 months.

Table 8 shows the increase in height, weight, testosterone concentration, and semen quality, alongside age from 24 to 48 months. Furthermore, the assessment reveals increased libido at 24 to 36 months and reduction at 48 months due to the decrease in semen motility by 63.33 ± 12.58%. The response towards heat was high aggressiveness at 36, moderate at 30 and 48, and low at 24 months. The outcome towards silent heat was moderate at 36 months while other ages were low, with non-heat prompting overall low aggressiveness. This is almost similar to the opinion of Ahmad et al. (2005), where age showed a significant effect on libido. Adult males aged 3-5, demonstrates the best libido compared to younger males under 3, and their older counterpart over 5 years.

Table 7 and Table 8 indicates several factors influencing libido level, with testosterone concentration as the first and strongest. Chenoweth (1994), Mahmood et al. (2013), and Syarifuddin et al. (2017), affirmed blood hormone concentration and testosterone as an alternative and indirect
assessment procedure for determining libido. Therefore, cattle libido level is affected by testosterone concentration. The second is age. Chenoweth (1994) and Ahmad et al. (2005) posited age impacts libido level and sexual behavior character. An increase in libido is apparent at 16-31 months. Achmad et al. (2017) also asserted the influence on animal libido in is from outside or inside the body. The ability to mount a bull is age based, and older age causes progressively malfunctioning limbs from dislocations/fractures and hind or spine osteoarthritis. Petherick's (2005) confirmed greater libido expression and serving efficiency in older bulls which is likely to signify better sexual experience.

The third factor affecting bulls libido level is body weight. Dalimunthe et al. (2017) postulated a higher total amount of PGF2α from bodyweight. Furthermore, the PGF2α concentration is proportionate to androgen hormones including testosterone. The endocrine system development with the animal puberty process impacts libido level.

The fourth factor is semen quality level. William (2011), expressed an impact on semen quality from testosterone concentration. Therefore, good semen quality and adequate hormone testosterone concentration affects libido level.

Height is the fifth factor. Walker et al. (2009) confirmed physical abilities, dominated by the bulls body size, facilitates successful breeding and ability to mate. Sumardani et al. (2017) also supported the significant impact of physique higher dimensions on reproductive performance.

Table 9 shows the criteria for superior bulls with high intensity mating and the value of aggressiveness. This is based on the analysis data on response of bulls to cows in Table 6.

Table 9 shows the bulls high aggressiveness response to cows, indicated in codes B1, B4, and B5 cattle. The criteria guidelines selected to determine superior bulls with characteristic high mating intensity includes age, height, chest circumference, weight, scrotal boundary circumference, testosterone concentration, and semen quality.

CONCLUSION

All bulls are aggressive to heat and silent heat, but less aggressive to non-heat cows. The percentage aggressiveness response towards heat was 20% high, 60% moderate, and 20% low, while, silent heat was 26.7% moderate and 73.7% low, and non-heat was 100% low. The age and testosterone substantially impacted on libido level at (P<0.01), while height, weight, semen quality and age, weight, and semen quality were significant at (P<0.05). The libido level strongly correlated with testosterone concentration at (0.80-1.00), while age, weight, and semen quality was significant at (0.60-0.79). However, height showed a moderate relationship at (0.40-0.59).

Progressive age instigates an increase in libido level, and the highest value is observed at 36 months, although a decline was recorded on the 48 month.

The major influencing factors include the hormone testosterone, followed by age, weight, semen quality and height. The criteria of Pesisir superior bull with high intensity mating include age 36-48 months, height 134±1.73cm, chest circumference 161±1.73, weight 348±31.18kg, scrotal boundary 32±0.87cm, testosterone concentration 12.62±3.77ng/ml and good semen quality.

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CONFLICT OF INTEREST

The all authors state that there is no conflict of interests.
Authors Contribution

IGEB and ZU designed and conducted research. IGEB and EP analyzed data and wrote manuscript. YY criticized and revised the manuscript. IGEB, ZU, EP and YY completed the manuscript.

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