



Reproductive Performance Comparison between Natural and Artificial Service in Jawarandu Goat

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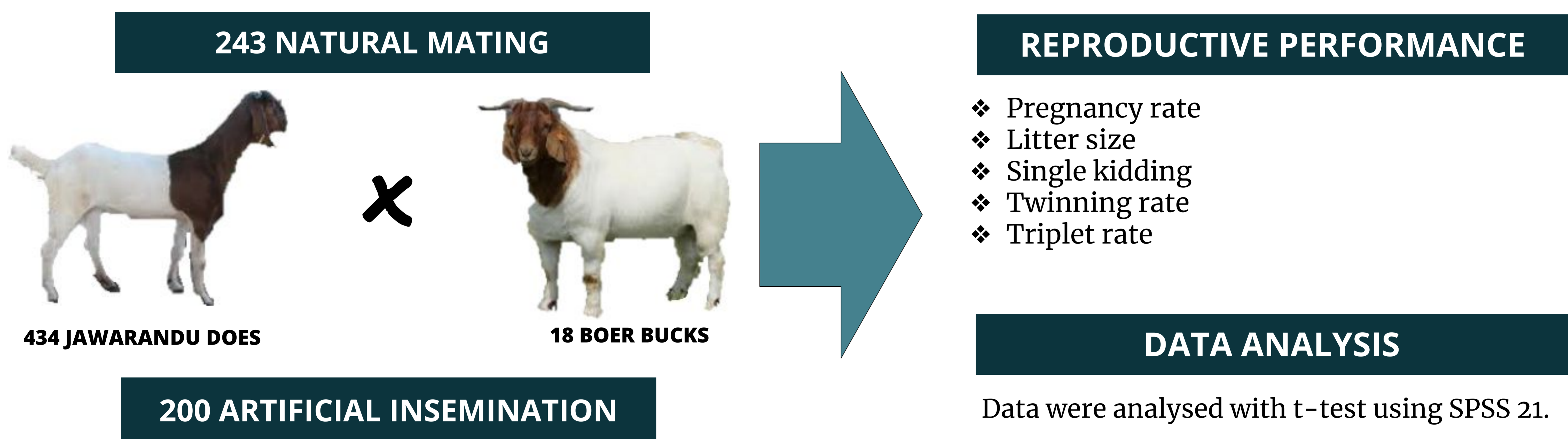
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INTRODUCTION

- Goat's crossbreeding is a common practice in Indonesia as an effort to increase the genetic quality of local breed. One of the practices is **crossbreeding between local breed called Jawarandu with imported breed, Boer goat**, producing Boerja goat [1, 2].
- Successful goat crossbreeding is related to reproductive performance of the breeds. Reproductive performance can be assessed through several parameters, such as **pregnancy rate, litter size, and twinning rate** [3-5].
- In the crossbreeding between Jawarandu and Boer, two methods have been used: **natural service (NS) and artificial insemination (AI)**.
- Both procedures should be evaluated to determine the best method in Jawarandu and Boer crossbreeding.
- **This study aimed to compare the reproductive performance between NM and AI in Jawarandu doe in the crossbreeding practice with Boer buck.**

METHODOLOGY



Picture source:
1. <https://docplayer.info/57454843-Penampilan-reproduksi-kambing-cross-boer-jawarandu-boer.html>
2. <http://nad.litbang.pertanian.go.id/ind/index.php/info-teknologi/847-ayo-beternak-kambing-boerka>

RESULT

Table 1. Comparison of reproductive performance in natural service and artificial insemination in Jawarandu goat

Parameter	Natural Mating	Artificial Insemination
Pregnancy rate (%)	73.07 ^a	21 ^b
Litter Size	1.37 ± 0.50 ^a	1.35 ± 0.56 ^a
Single kidding (%)	63.35 ^a	64.86 ^a
Twinning rate (%)	36.02 ^a	33.14 ^a
Triplet rate (%)	0.62 ^a	0 ^a

*Different superscript letter in same column shows significant difference (p<0.05)

DISCUSSION

- ➔ **NM had higher pregnancy rate compare to AI (p < 0.05)**
 - ◆ Some affecting factors to low pregnancy rate in AI :
 - Miss-timing of insemination
 - Semen could not deposited in deeper cervic region due to anatomy structure of doe's cervic
- ➔ **Litter size, twinning and triplet rate showed no difference between NM and AI (p>0.05)**
 - ◆ The LS, twinning and triplet rate lower than earlier report in Jawarandu cross boer, PE cross boer, but relatively higher than Saaenen.
 - ◆ Possible factors: small body size due to low nutrition intake and high variation in parity and age

CONCLUSION

- NM showed better reproductive performance compared to AI for Jawarandu goat.
- Thus, the application of NM is suggested to be used in commercial breeding program.

Reference:

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2. Prastowo S, Nurhayati YR, Widowati IFI, Nugroho T, Widyas N 2019 Telaah potensi hybrid vigor sifat bobot badan pada silangan kambing Boer dan Jawarandu *Jurnal Ilmu-Ilmu Peternakan* 29(1):65-74.
3. Hamdan, Nurcahya D, Siregar TN, Panjaitan B, Husnurizal 2012 Kinerja Reproduksi Kambing Lokal Yang Diinduksi Superovulasi Dengan Antiserum Inhibin *Jurnal Kedokteran Hewan-Indonesian Journal of Veterinary Sciences*, 6(1).
4. Agossou DJ, Koluman N 2018 The effects of natural mating and artificial insemination using cryopreserved buck semen on reproductive performance in Alpine goats. *Arch Anim Breed* 61(4):459-461.
5. Kaunang D, Suyadi S, Wahjuningsih S 2014 Analisis litter size, bobot lahir dan bobot sapih hasil perkawinan kawin alami dan inseminasi buatan kambing Boer dan Peranakan Etawah (PE) *JlIP* 23(3):6.