BULETIN VETERINER UDAYANA
pISSN 2085-2495
eISSN 2477-2712
Received: 22 January 2026; Accepted: 20 June 2026; Published: 20 June 2026

COMPARISON OF ERYTHROGRAM PROFILES BETWEEN DUTCH WARMBLOOD AND SUMBAWA HORSES AT THE TURANGGA UNIT, SAMAPTA DIRECTORATE, BALI REGIONAL POLICE

Perbandingan Profil Eritrogram Kuda *Dutch Warmblood* dan Kuda Sumbawa pada Unit Turangga Direktorat Samapta, Kepolisian Daerah Bali

Sang Ayu Putu Aura Setyaningsih[1], Nyoman Sadra Dharmawan[2], Ida Bagus Oka Winaya[3]

[1]Student of Faculty of Veterinary Medicine, Udayana University, Bukit Jimbaran Campus, Badung, Bali 80362, Indonesia

[2]Veterinary Clinical Pathology Laboratory, Faculty of Veterinary Medicine, Udayana University, Jl. P.B. Sudirman, Dangin Puri Klod, West Denpasar, Denpasar City, Bali 80234, Indonesia

[3]Veterinary Pathology Laboratory, Faculty of Veterinary Medicine, Udayana University, Jl. P.B. Sudirman, Dangin Puri Klod, West Denpasar, Denpasar City, Bali 80234, Indonesia

*Corresponding author email: setyaningsih.2209511043@student.unud.ac.id

How to cite: Setyaningsih SAPA, Dharmawan NS, Winaya IBO. 2026. Comparison of erythrogram profiles between Dutch warmblood and Sumbawa horses at the Turangga Unit, Samapta Directorate, Bali regional police. *Bul. Vet. Udayana.* 18(3): 685-695. DOI: https://doi.org/10.24843/bulvet.2026.v18.i03.p20

Abstract

This study aimed to compare erythrocyte count, hemoglobin concentration, hematocrit value, and erythrocyte indices (MCV, MCH, and MCHC) between Dutch Warmblood horses and local Sumbawa horses maintained at the Directorate of Samapta, Bali Regional Police. The study involved six male horses aged 12–21 years, consisting of three Dutch Warmblood horses and three Sumbawa horses. Blood samples were collected from the jugular vein and analyzed using a Rayto RT 7.600 for Vet hematology analyzer. Blood smear examinations with Giemsa staining were also performed to observe erythrocyte morphology microscopically. Data were analyzed descriptively by comparing the results with reference values for equine hematology. The results showed that erythrocyte, hemoglobin, hematocrit, and erythrocyte indices in both horse breeds were within normal ranges. Dutch Warmblood horses tended to show greater variation in erythrocyte and erythrocyte index values, while Sumbawa horses demonstrated more stable values. Microscopic observations revealed normal biconcave disc- shaped erythrocytes without pathological abnormalities in both breeds. The observed differences in hematological profiles were associated with breed-related physiological adaptations.

Keywords: Dutch Warmblood horse, erythrocytes, hematocrit, hematology, Sumbawa horse

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

Abstrak

Penelitian ini bertujuan untuk membandingkan jumlah eritrosit, konsentrasi hemoglobin, nilai hematokrit, dan indeks eritrosit (MCV, MCH, dan MCHC) antara kuda *Dutch Warmblood* dan kuda lokal Sumbawa yang dipelihara di Direktorat Samapta Kepolisian Daerah Bali. Penelitian ini melibatkan enam ekor kuda jantan berumur 12–21 tahun, yang terdiri atas tiga ekor kuda *Dutch Warmblood* dan tiga ekor kuda Sumbawa. Sampel darah diambil melalui vena jugularis dan dianalisis menggunakan alat *hematology analyzer Rayto RT 7.600 for Vet*. Pemeriksaan ulas darah dengan pewarnaan Giemsa juga dilakukan untuk mengamati morfologi eritrosit secara mikroskopis. Data dianalisis secara deskriptif dengan membandingkan hasil pemeriksaan terhadap nilai referensi hematologi kuda. Hasil penelitian menunjukkan bahwa jumlah eritrosit, hemoglobin, hematokrit, dan indeks eritrosit pada kedua ras kuda berada dalam kisaran normal. Kuda *Dutch Warmblood* cenderung menunjukkan variasi nilai eritrosit dan indeks eritrosit yang lebih besar, sedangkan kuda Sumbawa menunjukkan nilai yang lebih stabil. Pengamatan mikroskopis memperlihatkan eritrosit berbentuk cakram bikonkaf normal tanpa adanya kelainan patologis pada kedua ras. Perbedaan profil hematologi yang diamati berkaitan dengan adaptasi fisiologis yang dipengaruhi oleh ras kuda.

Kata kunci: eritrosit, hemoglobin, hematokrit, kuda *Dutch Warmblood*, kuda Sumbawa

INTRODUCTION

Horses (*Equus caballus* or *Equus ferus caballus*) are livestock that play an important role in human lives (Wibisono *et al.*, 2017). The Samapta Directorate of the Bali Regional Police is one of the police units that utilizes a mounted unit (Turangga) to support patrol and escort duties, Search and Rescue (SAR), and crowd control. The Samapta Directorate of the Bali Regional Police maintains two types of horses: the Dutch Warmblood, an imported breed, and Sumbawa, a local breed. The Sumbawa horse is one of Indonesia's native horse breeds, developed on the island of Sumbawa, reportedly resulting from the crossbreeding of local horses (Sandelwood ponies) with Arabian and Thoroughbred horses (Asidah, 2020). Indonesia's native horse breeds possess distinctive characteristics and physical performance, along with good physiological conditions suited to the local environmental conditions (Gaina *et al.*, 2018). The Dutch Warmblood is an imported horse breed that is widely recognized as a sport horse with ideal body proportions. This breed excels in stability during activity, stamina, physical strength, and a relatively docile temperament, making it easier to train. It is a sport horse breed widely used in dressage and show jumping competitions because of its strong performance in both disciplines (Rovere *et al.*, 2016). As working horses, both breeds require optimal physical condition to support maximum work performance.

Assessing physiological status is a key aspect of monitoring a horse's health and fitness, particularly in horses that undergo regular training or work (Anggraeni *et al.*, 2024). Erythrocyte parameters, including red blood cell (RBC) count, hemoglobin (Hb) level, hematocrit (HCT), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC), are important components of equine hematological testing because they can be used to evaluate oxygen-carrying capacity and help identify various physiological and pathological conditions (Satué *et al.*, 2014).

Various studies have indicated that hematological values vary among horse breeds, influenced by genetic factors, age, sex, activity level, and environmental conditions. Warm-blooded horses are reported to have lower red blood cell counts with larger red blood cell sizes than Thoroughbreds or local horses, which is related to differences in aerobic capacity and the physiological characteristics of each breed (Brommer *et al.*, 2001). In addition to genetic

Terakreditasi Nasional Sinta 4, berdasarkan Keputusan Direktur Jenderal
Pendidikan Tinggi, Riset, dan Teknologi No. 158/E/KPT/2021

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

factors, a horse's hematological parameters can be influenced by various external factors, such as environmental conditions, season, temperature, humidity, nutrition, and husbandry practices, which reflect the animal's physiological ability to adapt to changes in its surroundings (Aragona *et al.*, 2023).

Imported horses, such as the Dutch Warmblood, which originate from temperate climates, face adaptation challenges when kept in tropical environments such as Indonesia. High ambient temperatures, increased humidity, and differences in husbandry conditions can affect the physiological status and hematological profiles of horses, including changes in erythrocyte parameters that play a role in the blood's oxygen-carrying capacity (Aragona *et al.*, 2023). In contrast, local horses, such as the Sumbawa horse, have generally adapted well to tropical conditions and tend to exhibit greater physiological stability in these environments.

Nevertheless, data on the hematological profiles of horses, particularly comparisons between imported and local breeds in Indonesia, are limited. Most available references stem from studies conducted abroad under different environmental conditions and thus do not adequately represent the local conditions in Indonesia. Addressing this data gap is crucial, especially in the context of police operational horses that face high work demands. Therefore, this study aimed to determine the differences in RBC, Hb, HCT, MCV, MCH, and MCHC values between Dutch Warmblood and Sumbawa horses at the Samapta Directorate of Bali Regional Police.

RESEARCH METHODS

Ethical Approval for Laboratory Animals

All procedures involving the use of animals have been approved by the Animal Ethics Committee of the Faculty of Veterinary Medicine at Udayana University, as evidenced by Animal Ethics Approval Letter No. B/200/UN14.2.9/PT.01.04/2025.

Research Subjects

The subjects of this study were operational horses kept at the Samapta Directorate of the Bali Regional Police Department. The study sample consisted of six adult stallions divided into two breed groups: three Dutch Warmbloods and three Sumbawa horses. All horses used in the study were in good clinical health, as determined by general physical examinations, and showed no signs of health problems.

Blood samples were collected from each individual once during the study period. The sample size was determined based on the availability of operational horses at the Samapta Directorate of the Bali Regional Police used as research subjects and was adjusted to the descriptive-comparative nature of the study.

Research Design

This study employs an observational research design with a descriptive-comparative approach. The study was conducted without administering any treatments or conducting experiments on the research subjects. Data were collected through observation and examination of hematological parameters in Dutch Warmblood and Sumbawa horses kept at the Samapta Directorate of the Bali Regional Police, followed by a comparison between the two horse breeds.

Research Variables

The independent variable in this study was horse breed, specifically Dutch Warmblood and Sumbawa. The dependent variables included the erythrocyte parameters examined, namely, red blood cell (RBC) count, haemoglobin (Hb) level, haematocrit (HCT) value, and erythrocyte

Terakreditasi Nasional Sinta 4, berdasarkan Keputusan Direktur Jenderal
Pendidikan Tinggi, Riset, dan Teknologi No. 158/E/KPT/2021

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

indices, including mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH), and mean corpuscular haemoglobin concentration (MCHC). The control variables in this study included the horse's sex (male), health status (deemed healthy based on a physical examination), time of blood collection, ambient temperature at the time of sampling, and method of blood sample collection and examination, which were performed using the same procedure for all the study subjects.

Data Collection Method

Research data were obtained through hematological examinations of Dutch Warmblood and Sumbawa horses maintained at the Samapta Directorate of the Bali Regional Police. Data collection was conducted without administering any treatment or conducting experiments on the research subjects. Blood samples were drawn from each horse via the jugular vein, which was disinfected with 70% alcohol. The samples were collected using a syringe and then stored in tubes containing the anticoagulant EDTA.

The blood samples obtained were subsequently examined to determine the red blood cell (RBC) count, hemoglobin (Hb) level, hematocrit (HCT) value, and red blood cell indices, including mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC). The tests were performed using a hematology analyzer (Rayto RT 7.600 for Vet), and erythrocyte morphology was observed via blood smears stained with Giemsa stain. All data obtained were recorded and used for research analysis.

Data Analysis

The results of hematological examinations, including red blood cell (RBC) count, hemoglobin (Hb) level, hematocrit (HCT) value, and red blood cell indices (MCV, MCH, and MCHC), are presented in tabular form based on horse breed groups, namely Dutch Warmblood and Sumbawa horses. Each parameter is presented as individual and mean values for each breed group. Data were descriptively analyzed. Descriptive analysis was used to describe the characteristics of the hematological parameters in each horse group. Furthermore, the test results between Dutch Warmblood and Sumbawa horses were compared descriptively to identify differences in red blood cell parameters and indices between the breeds. The analysis results are presented in the form of tables and narrative descriptions by comparing the obtained values with the equine hematology reference values found in the literature (eClinPath 2014). The research results were presented systematically to facilitate data interpretation without using inferential statistical tests.

RESULTS AND DISCUSSION

Results

The results of the hematology examination showed that the red blood cell (RBC) count, hemoglobin (Hb) level, and hematocrit (HCT) value in Dutch Warmblood and Sumbawa horses kept at the Samapta Directorate of the Bali Regional Police were within the reported physiological reference ranges for adult horses (Table 1, Figures 1 and 2). In general, hematological values in adult horses can vary based on breed, age, sex, activity level, and housing conditions; however, they remain within the reference ranges reported for various populations of healthy horses (Satué *et al.*, 2014). These results indicate that all horses used in the study had hematological profiles consistent with the reported physiological reference ranges for adult horses.

As shown in Table 1 and Graph 1-3, Dutch Warmblood horses exhibited relatively greater variation in RBC, Hb, and HCT values than Sumbawa horses did. These findings are consistent with previous reports indicating that hematological parameters in horses can be influenced by

Terakreditasi Nasional Sinta 4, berdasarkan Keputusan Direktur Jenderal
Pendidikan Tinggi, Riset, dan Teknologi No. 158/E/KPT/2021

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

breed, age, sex, and activity level; thus, variations in red blood cell and hematocrit values among groups of horses may reflect differences in the physiological characteristics of each horse breed (Mayaki *et al.*, 2025).

The results of the erythrocyte index examination, which included mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC), showed that all values were within the normal range (Table 2, Graph - 4-6). The reference values for erythrocyte indices in adult horses generally fall within the mean ± standard deviation (SD) range: MCV, 45 ± 5 fL; MCH, 17 ± 2 pg; and MCHC, 37 ± 2 g/dL. The MCV values in Dutch Warmblood horses tended to be higher than those in Sumbawa horses, indicating a relatively larger red blood cell size. This finding is consistent with previous reports showing that breed can influence variations in hematological parameters in horses, including red blood cell parameters and indices related to the physiological characteristics of each horse breed (Sawesi *et al.*, 2023).

Discussion

Based on the research findings, erythrocyte parameters, including red blood cell (RBC) count, hemoglobin (Hb) level, hematocrit (HCT), erythrocyte indices, and erythrocyte morphology, revealed distinct patterns between Dutch Warmblood and Sumbawa horses. All parameters were interpreted based on the reported hematological reference ranges for adult horses to evaluate the physiological condition and oxygen-carrying capacity of each horse breed, considering that hematological values may vary depending on breed, population characteristics, and management factors (Buendia *et al.*, 2021). Erythrocyte parameters are important indicators for evaluating the health status and physiological capacity of horses, especially those used for routine physical activity, as they play a role in transporting oxygen to body tissues and supporting metabolic needs during exercise (Jamieson *et al.*, 2022).

The normal RBC count for horses ranges from 6.6 to 9.7 × 10^6/µL (eClinPath, 2024). In Dutch Warmblood horses, the RBC count shows a fairly wide range, from 5.35 to 9.71 × 10^6/µL. Collin had an RBC count of 5.35 × 10^6/µL, which was below the reference range, accompanied by low Hb (8.9 g/dL) and HCT (22.6%) levels, indicating anemia. Based on erythrocyte indices showing an MCV slightly below the normal range, while MCH and MCHC values remained within physiological limits, this condition points to mild normochromic microcytic anemia, potentially related to impaired erythropoiesis or early-stage nutritional deficiency.

Warmblood horses do not exhibit a completely uniform erythrocyte pattern. This condition is thought to be influenced by individual physiological differences, activity levels, and environmental factors that shape each individual's hematological profile (Buendia *et al.*, 2021). In contrast, the Sumbawa horses exhibited more consistent RBC values, ranging from 8.39 to 8.88 × 10^6/µL. All values fell within the normal physiological range, reflecting the stability of erythropoiesis and the local breed's ability to adapt to the tropical environment and routine physical activities. These findings are consistent with previous reports indicating that the hematological characteristics of horses can be influenced by environmental factors, husbandry practices, and physiological adaptability to housing conditions; thus, horses that have long been adapted to the local environment tend to exhibit physiological responses that are appropriate to their environment (Czech *et al.*, 2019).

Normal hemoglobin (Hb) levels in horses range from 11.8–15.9 g/dL (eClinPath, 2024). In Dutch Warmblood horses, Hb levels fall within the range of 8.9–15 g/dL, with Collin's Hb value (8.9 g/dL) falling below the normal reference range, indicating reduced tissue oxygenation capacity. In Sumbawa horses, Hb levels fall within the range of 13.5–16.4 g/dL, and the majority of horses fall within the normal physiological range.

Terakreditasi Nasional Sinta 4, berdasarkan Keputusan Direktur Jenderal
Pendidikan Tinggi, Riset, dan Teknologi No. 158/E/KPT/2021

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

The normal hematocrit (HCT) range for horses is 34–46% (eClinPath, 2024). In Dutch Warmblood horses, HCT values range from 22.6% to 40.8%, with Collins' HCT value (22.6%) falling below the normal range, further reinforcing the indication of anemia. In Sumbawa horses, HCT values ranged from 37.3% to 48.2%, with most individuals falling within the normal range, indicating a relatively better oxygen-carrying capacity in local horses.

Based on erythrocyte indices, the MCV in Dutch Warmblood horses ranged from 40.8 to 42.2 fL, slightly below the reference range of 43–55 fL, whereas Sumbawa horses had an MCV of 44.4–48.4 fL, which remained within the normal range. This finding is consistent with previous reports indicating that hematological parameters and erythrocyte indices in horses can vary among breeds because of differences in the physiological and genetic characteristics of each horse breed (Czech *et al.*, 2019). The MCH and MCHC values in both breeds generally fell within the normal range, indicating a normocytic-normochromic condition. Microscopic examination of blood smears revealed that erythrocytes in both breeds were generally biconcave disc-shaped, anucleate, and of relatively uniform size. In some Dutch Warmblood horse samples, mild rouleaux formation was observed, which is a normal physiological finding in horses and does not indicate a pathological condition. No erythrocyte morphological abnormalities, such as anisocytosis or poikilocytosis, were observed, and there were no changes in erythrocyte staining suggestive of hypochromia or hyperchromia. These findings support the erythrocyte indices, indicating a normocytic-normochromic condition (eClinPath, 2024).

Overall, the Sumbawa horses exhibited a more consistent erythrocyte profile than Dutch Warmblood horses. The differences in hematological profiles between these two horse breeds are thought to be related to the physiological characteristics of each breed, as well as the influence of environmental factors and husbandry practices known to affect hematological parameters in horses (Sawesi *et al.*, 2023).

CONCLUSIONS AND SUGGESTIONS

Conclusions

Based on the research findings, Sumbawa horses exhibited a more consistent erythrocyte hematological profile than Dutch Warmblood horses. The RBC, Hb, and HCT values in Sumbawa horses generally fell within the normal physiological range of the reference values with relatively narrow variation, whereas Dutch Warmblood horses showed a wider range of values, and in some individuals, the values were below the reference range. The erythrocyte indices in both breeds fell within the normocytic–normochromic category, and erythrocyte morphology showed no pathological changes.

Suggestions

The Samapta Directorate of the Bali Regional Police should conduct periodic hematological monitoring of service horses, particularly non-local horses, to assess their health status and physiological adaptation and use this as a basis for adjusting their care, nutrition, and workload management. Further longitudinal research is warranted, including the addition of leukocyte parameters, biochemical profiles, and cortisol levels as stress indicators, as well as considering activity and nutritional status factors, to obtain a more comprehensive picture of horses' adaptation to the training program.

ACKNOWLEDGMENTS

The author thanks the staff of the Veterinary Parasitology Laboratory at the Denpasar Veterinary Research Institute for permitting the use of their facilities and equipment, as well as all those who assisted in the completion of this study.

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

REFERENCES

Anggraeni, H. E., & Muhammad, I. (2024). Study of the physiological status of horses before and after training in Anantya Riding Club. *Journal of Applied Veterinary Science and Technology, 5*(1), 83–86. https://doi.org/10.20473/javest.V5.I1.2024.83-86

Aragona, F., Arfuso, F., Fazio, F., De Caro, S., Giudice, E., Monteverde, V., Piccione, G., & Giannetto, C. (2023). Circadian variation of peripheral blood cells in horses maintained in different environmental and management conditions. *Animals, 13*(11), 1865. https://doi.org/10.3390/ani13111865

Asidah, E. (2020). Pengembangan pariwisata budaya pacuan kuda dalam meningkatkan kesejahteraan masyarakat Desa Brang Kolong Kecamatan Plampang Kabupaten Sumbawa-NTB. Jurnal Ilmiah Mandala Education, 6(2), 369–376. https://doi.org/10.36312/jime.v6i2.1450

Brommer, H., van Oldruitenborgh-Oosterbaan, M. S., & Kessels, B. (2001). Haematological and blood biochemical characteristics of Dutch Warmblood foals managed under three different rearing conditions from birth to 5 months of age. *Veterinary Quarterly, 23*(2), 92–95. https://doi.org/10.1080/01652176.2001.9695090

Buendia, A., Teng, K. T. Y., Camino, E., Dominguez, L., & Cruz-Lopez, F. (2021). Influence of multiple factors on hematologic reference intervals in horses residing in livery yards in Spain. *Veterinary Clinical Pathology, 50*(2), 273–277. https://doi.org/10.1111/vcp.12965

Czech, A., Kiesz, M., Kiesz, A., Próchniak, T., Różański, P., & Klimiuk, K. (2019). Influence of type of use, age and gender on haematological and biochemical blood parameters of Małopolski horses. *Annals of Animal Science, 19*(1), 85–96. https://doi.org/10.2478/aoas-2018-0031

eClinPath. (2024). *Hematology guide*. Cornell University College of Veterinary Medicine. Retrieved May 31, 2026, from https://eclinpath.com/hematology/tests/hematology-guide/

Gaina, C. D., & Foeh, N. D. F. K. (2018). *Studi performa umum tubuh dan status fisiologis kuda Sumba*. *Jurnal Kajian Veteriner*, *6*(2), 38–44. https://doi.org/10.35508/jkv.v6i2.376

Jamieson, C. A., Baillie, S. L., & Johnson, J. P. (2022). Blood transfusion in equids—A practical approach and review. *Animals, 12*(17), 2162. https://doi.org/10.3390/ani12172162

Mayaki, A. M., Likita, Y. I., Alaba, O. A., Osereime, A., Akinniyi, O. O., Ajani, T. F., Azeez, O. I., Oyagbemi, A. A., Omoniwa, D. O., Ohore, O. G., & Omobowale, T. O. (2025). Age, sex, breed and activity-related effects on some haematological parameters of horses in South Western Nigeria. *Sahel Journal of Veterinary Sciences, 22*(2), 13–19. https://doi.org/10.54058/0nercg44

Rovere, G., Ducro, B. J., Van Arendonk, J. A. M., Norberg, E., & Madsen, P. (2016). Analysis of competition performance in dressage and show jumping of Dutch Warmblood horses. *Journal of Animal Breeding and Genetics, 133*(6), 503–512. https://doi.org/10.1111/jbg.12221

Satué, K., Muñoz, A., & Gardón, J. C. (2014). Interpretation of alterations in the horse erythrogram. *Journal of Hematology Research, 1*(1), 1–10. https://doi.org/10.12974/2312-5411.2014.01.01.1

Sawesi, O., Elbaz, A. K., Mahmoud, A., Duro, E. M., Alghamudi, A. A., Alsharif, M. A., & Alhadi, A. A. (2023). Hematological reference values of horses in Western Libya and their relationship to breed, age and management. *Open Veterinary Journal, 13*(12), 1696–1707. https://doi.org/10.5455/OVJ.2023.v13.i12.18

Wibisono, H. W., Wandia, I. N., & Suatha, I. K. (2017). Morfometri kuda jantan dewasa yang dipelihara di Kabupaten Lombok Timur, Nusa Tenggara Barat. *Indonesia Medicus Veterinus*,

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

6(1), 55–61.

Tables

Table 1. Blood Sample Examination Results of Dutch Warmblood Horses

No.	Horse Name	RBC (10^6/µL)	HB (g/dL)	HCT (%)	MCV (fL)	MCH (pg)	MCHC (g/dL)
1	Collin	5.35	8.9	22.6	42.2	16.6	39.5
2	Indiro	9.71	15.0	40.8	42.0	15.5	36.8
3	Zeno	7.23	11.0	29.6	40.8	15.2	37.3
Mean		7.43	11.63	31.00	41.67	15.77	37.87
Standard deviation		2.19	3.10	9.18	0.76	0.74	1.44
Normal Value (eClinpath, 2024)		6.6–9.7	11.8–15.9	34–46	43–55	14–20	34–37

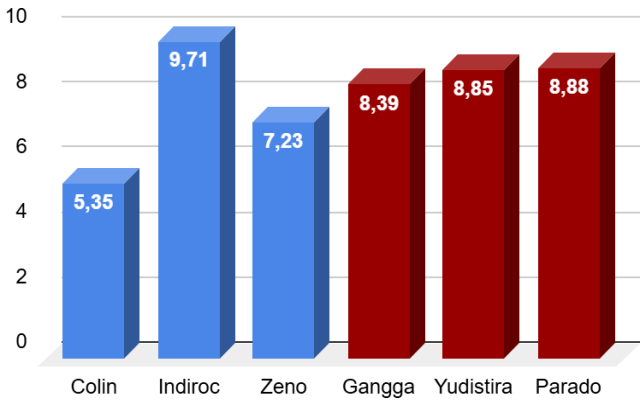
Table 2. Blood Sample Examination Results of Sumbawa Horses

No	Horse Name	RBC ($\times 10^6$µL)	HB (g/dL)	HCT (%)	MCV (fL)	MCH (pg)	MCHC (g/dL)
1.	Gangga	8,39	13,5	37,3	44,4	16,1	36,2
2.	Yudistira	8,85	16,4	48,2	48,4	18,5	38,3
3.	Parado	8,88	14,7	40,4	45,5	16,5	36,4
Mean		8,71	14,87	41,97	46,10	17,03	36,97
Standard deviation		0,27	1,46	5,62	2,07	1,29	1,16
Normal Value (eClinpath, 2024)		6,6–9,7	11,8–15,9	34–46	43–55	14–20	34–37

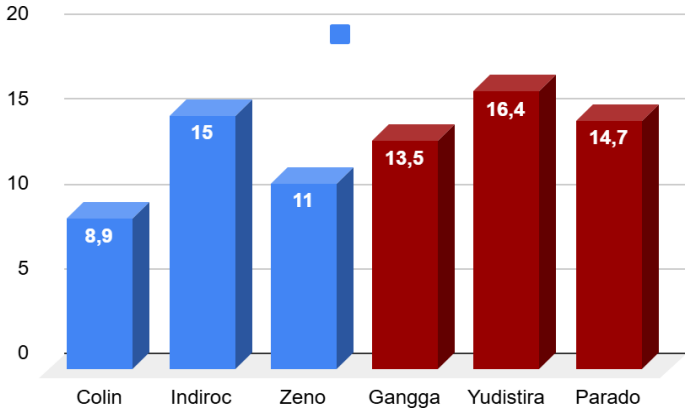
Terakreditasi Nasional Sinta 4, berdasarkan Keputusan Direktur Jenderal
Pendidikan Tinggi, Riset, dan Teknologi No. 158/E/KPT/2021

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20

Graphs



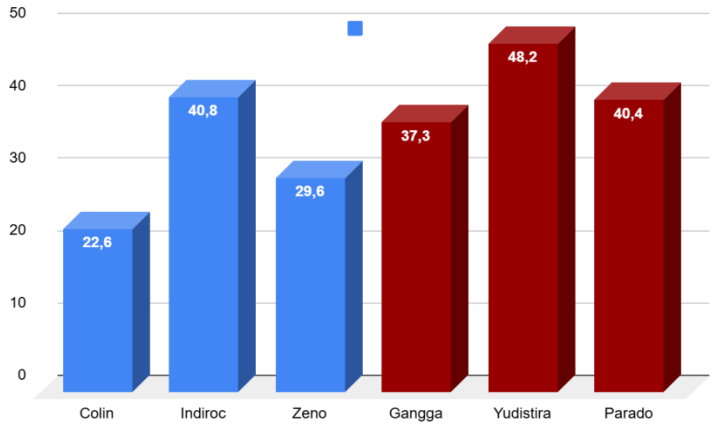
Graph 1. RBC Data of Dutch Warmblood Horses and Sumbawa Horses at the Directorate of Samapta, Bali Regional Police



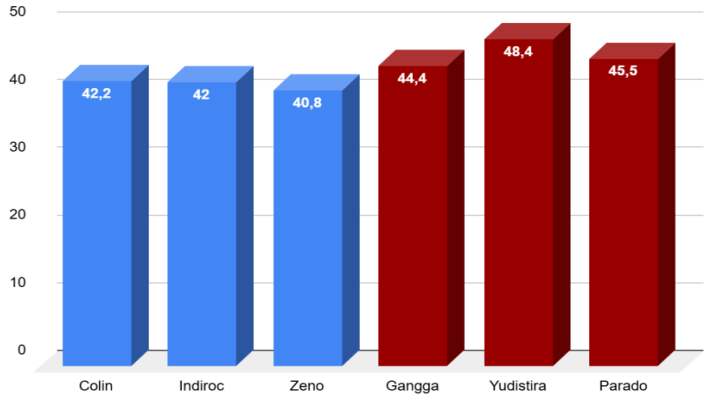
Graph 2. Hemoglobin Data of Dutch Warmblood Horses and Sumbawa Horses at the Directorate of Samapta, Bali Regional Police

Terakreditasi Nasional Sinta 4, berdasarkan Keputusan Direktur Jenderal Pendidikan Tinggi, Riset, dan Teknologi No. 158/E/KPT/2021

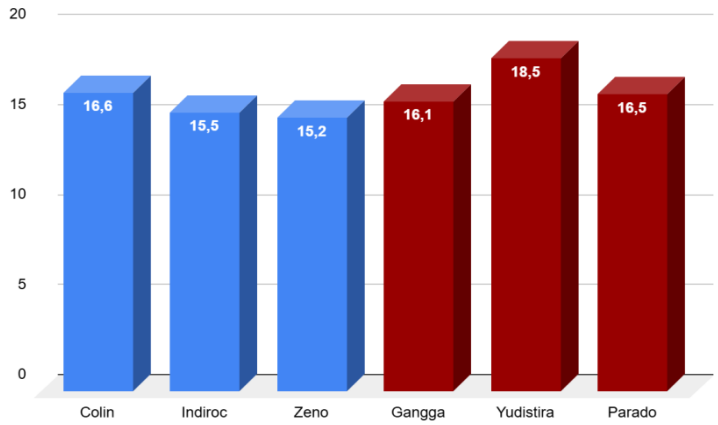
Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20



Graph 3. Hematocrit Data of Dutch Warmblood Horses and Sumbawa Horses at the Directorate of Samapta, Bali Regional Police



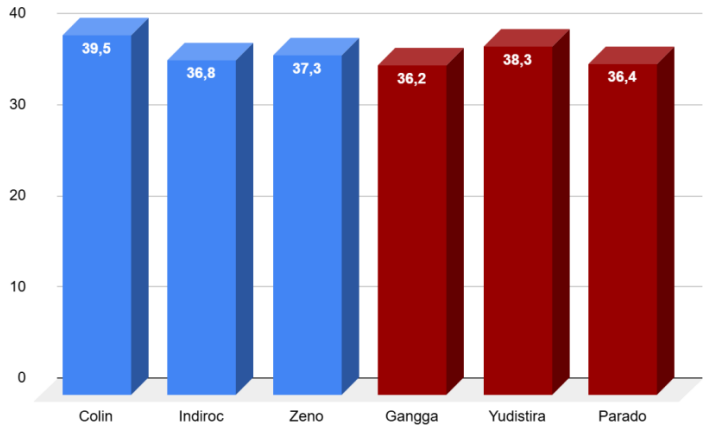
Graph 4. MCV Data of Dutch Warmblood Horses and Sumbawa Horses at the Directorate of Samapta, Bali Regional Police



Graph 5. MCH Data of Dutch Warmblood Horses and Sumbawa Horses at the Directorate of Samapta, Bali Regional Police

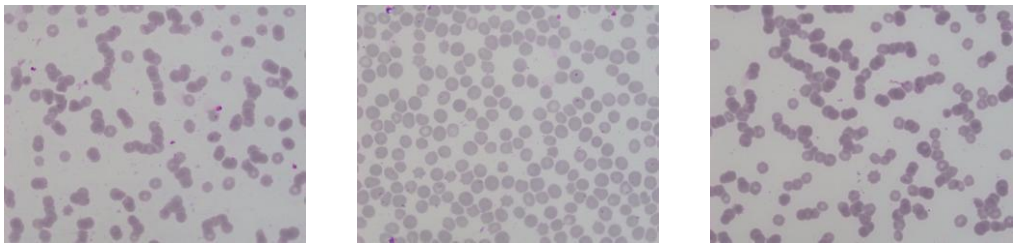
Terakreditasi Nasional Sinta 4, berdasarkan Keputusan Direktur Jenderal
Pendidikan Tinggi, Riset, dan Teknologi No. 158/E/KPT/2021

Volume 18 No. 3: 685-695
June 2026
https://doi.org/10.24843/bulvet.2026.v18.i03.p20



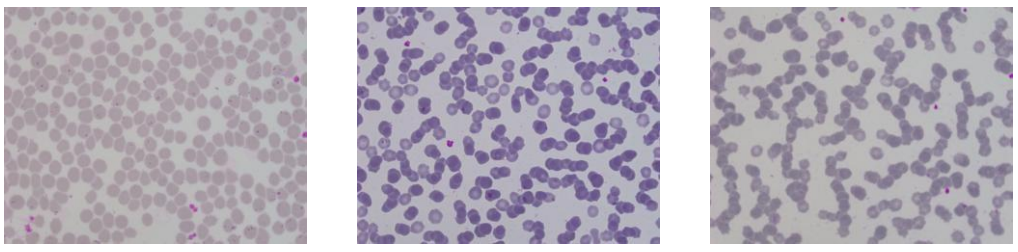
Graph 6. MCHC Data of Dutch Warmblood Horses and Sumbawa Horses at the Directorate of Samapta, Bali Regional Police

Figures



Collin Indiroc Zeno

Figure 1. Erythrocyte Examination Results of Dutch Warmblood Horses (Giemsa Staining, 1000× Magnification)



Gangga Yudistira Parado

Figure 2. Erythrocyte Examination Results of Sumbawa Horses (Giemsa Staining, 1000× Magnification)