

## **PROFIL HEMATOLOGIS MARMOT (*Cavia porcellus* L., 1758) BETINA PADA TAHAPAN REPRODUKSI DI LINGKUNGAN TIDAK TERKONTROL**

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### Intisari

Marmot (*Cavia porcellus* L., 1758) dijadikan model penelitian biomedis karena kemiripan sistem imun dengan manusia, dan juga memiliki periode gestasi panjang sehingga cocok dijadikan model penelitian reproduksi. Salah satu parameter dasar dalam penelitian biomedis adalah profil hematologis normal. Acuan profil hematologis normal yang sudah ada adalah data dari *animal house* luar negeri sehingga tidak sesuai untuk digunakan di Indonesia karena perbedaan lingkungan. Selain itu penelitian sebelumnya belum meninjau profil hematologis marmot betina dengan memperhatikan tahapan reproduksi. Oleh karena itu penelitian ini bertujuan untuk mempelajari profil hematologis normal marmot betina pada tahapan reproduksi yang dikembangkan di Indonesia. Penelitian ini menggunakan 16 ekor marmot betina dengan berat badan bervariasi (100,5 - 608 gram). Siklus estrus diperiksa dengan ulas vagina. Profil hematologis diperiksa menggunakan *Hematology Analyzer*, meliputi: jumlah total eritrosit, persentase hematokrit, kadar Hemoglobin, jumlah total leukosit dan leukosit diferensial, serta jumlah trombosit. Gambaran leukosit diferensial diamati melalui apusan darah. Hepar, ren, dan lien ditimbang lalu dibandingkan morfologis dan histologisnya untuk melihat ada tidaknya abnormalitas. Marmot yang diperoleh adalah dalam kondisi non-siklus, siklus (estrus dan diestrus), serta diluar siklus (gestasi dan postpartum). Hasil pemeriksaan menunjukkan profil hematologis marmot betina dipengaruhi oleh tahapan reproduksi. Marmot non siklus memiliki profil darah merah lebih tinggi dibandingkan saat siklus, namun jumlah leukosit dan trombositnya lebih rendah. Saat diestrus kadar hemoglobin, jumlah eritrosit, leukosit dan trombosit lebih tinggi daripada estrus, namun persentase hematokritnya lebih rendah. Saat gestasi profil darah merah tinggi namun jumlah leukosit dan trombositnya rendah. Saat postpartum profil darah merah dan trombosit tinggi, namun jumlah leukositnya rendah. Leukosit diferensial marmot non-siklus, diestrus, dan postpartum paling banyak adalah neutrofil, sedangkan saat estrus dan gestasi adalah limfosit. Estrus menyebabkan berat hepar dan lien meningkat. Gestasi dan postpartum menyebabkan berat hepar, ren, lien meningkat. Morfologis dan histologis hepar, ren, dan lien tidak menunjukkan kelainan.

Kata kunci: marmot, reproduksi, eritrosit, hemoglobin, hematokrit, leukosit, trombosit, hepar, ren, lien

***HEMATOLOGICAL PROFILE OF FEMALE GUINEA PIG  
(*Cavia porcellus* L., 1758) BASED ON REPRODUCTIVE STAGE  
IN UNCONTROLLED ENVIRONMENT***

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*Abstract*

*Guineapig (*Cavia porcellus* L., 1758) is used as model in biomedical research because immune system similarity with humans, and also has a long gestational period which suitable for reproduction model. One of basic biomedical parameters is normal hematological profile. This profile references, those already exist, came from foreign animal house. Those references are not suitable for using in Indonesia due to environmental differences. Moreover previous research has not reviewed female guineapig hematological profile with reproductive stage. Therefore, this research aims to study the hematological profile of female guineapig in Indonesia based on reproductive stage. Sixteen female guineapigs with varying body weight (100.5-608 grams) were used. Estrous cycle was checked with vaginal smear. Blood was examined using Hematology Analyzer, includes: erythrocytes count, PCV, hemoglobin concentration, total leukocyte count, differential leukocyte count, and platelet count. Differential leukocyte pictures were observed through blood smear. Liver, kidney, and spleen were weighed, then their morphology and histology were compared to look for abnormalities. Samples obtained were in non-cyclic, cyclic (estrus and diestrus), and out of cyclic (gestation and postpartum). The results showed guineapig hematological profile was influenced by reproductive stage. Red blood profile during cyclic lower than non-cyclic. Hemoglobin concentration, erythrocyte, leukocyte and platelet counts of diestrus was higher than estrus, but PCV were lower. During gestation, red blood profile was high when leukocyte and platelet counts were low. During postpartum red blood profile and platelet counts were high, but leukocyte count was low. The highest differential leukocyte count in non-cyclical, diestrus, and postpartum was neutrophil, whereas in estrus and gestational was lymphocyte. Estrus cause liver and spleen weight increased. Gestation and postpartum causes liver, kidney, and spleen weight increased. Morphology and histology of the liver, kidney, and spleen showed no abnormalities.*

*Keywords: guinea pig, reproductive, erythrocyte, hemoglobin, PCV, leukocyte, platelet, liver, kidney, spleen*