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قياس قطر كرات الدم الحمراء كوسيلة للاستعراف على الحيوان مع الاشارة بقياسه في الجاموس المصري

عادل شحاته ، ثابت عبد المنعم

دلت نتائج هذه الدراسة على أن متوسط قطر كرات الدم
الحمراء في الحيوانات المصرية كما يأتي .

- ٨٥ ره ميكرون في القطط ، ٧٧ ميكرون في الكلاب ،
٩٦ ره ميكرون في الأرانب ، ٦٥ ره ميكرون في الاغنام ،
٣ ميكرون في الماعز ، ٨٤ ره ميكرون في الابقار ،
٨٤ ره ميكرون في الحمير ، ٣ ره ميكرون في الخيول ،
٦٤ ره ميكرون في الانسان ، ٥٣ ره ميكرون في الجاموس
المصري .

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**MEASUREMENT OF RED CELL DIAMETERS AS A TOOL FOR ANIMAL
IDENTIFICATION WITH SPECIAL REFERENCE
TO EGYPTIAN WATER BUFFALOES**
(With One Table)

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SUMMARY

The present study recorded the red cell diameters in Egyptian animals with special reference to Egyptian water buffaloes, as a tool for animal identification through examination of fresh blood specimens. The diameters were 5.85, 7.7, 6.96, 3.65, 3, 4.84, 5.84, 5.3, 7.64, and 5.53 microns for cat, dog, rabbit, sheep, goat, cow, ass, horse, human, and buffaloes respectively.

INTRODUCTION

For the distinction of the species of mammals through examination of fresh blood specimens, the diameters of red cells, is the only criterion (SOLIMAN, 1966). The previous results of red cell diameter measurements recorded by DUKES (1955), SMITH and FIDDES (1955), SOLIMAN (1966), and BREAZILE (1971) showed great variations. This variance with the absence of buffalo's red cell diameters in the obtained literatures initiated us to investigate this study on Egyptian animals.

MATERIAL and METHODS

Blood films were made from different mammals (40 buffaloes, 7 cats, 18 cows, 7 dogs, 15 ass, 9 goats, 18 horses, 29 human, 32 rabbits, and 30 sheep) and stained with Gimsa stain. The red cell diameters were measured using the eye-piece micrometer (PRICE-JONES, 1933). The method has the advantages of directness and simplicity and can be quickly applied (DACIE and LEWIS, 1975).

RESULTS

Results obtained were recorded in table (1).

DISCUSSION

Many authors recorded the measurements of red cell diameters through examination of fresh blood specimens as a method for animal identification. The diameter of red cells is generally relatively constant for a given species (BREAZILE, 1971). Our results revealed that the diameter of cat erythrocytes ranges from 4.5 to 6 microns with an average of 5.85 microns. In cow the erythrocytes ranges between 4.5 to 6 microns with an average of 4.84 microns. That of the dog ranges between 7.5 to 9 microns with an average of 7.7 microns. The average

diameters of the erythrocytes of both ass and horse are 5.84 and 5.3 microns respectively. In sheep the diameter ranges from 3.0 to 4.5 with mean size of about 3.65 microns. The diameter of red cells in goats ranges from 2.25 to 4.5 with an average diameter of about 3 microns. In the rabbit the range was from 6 to 7.5 microns with an average of 6.96 microns. In human the range is 6.75 to 9.0 microns, with an average of 7.64 microns. Our figures showed a limit difference when compared with those recorded by DUKES (1955), SMITH and FIDDES (1955); SOLIMAN (1966), and BREAZILE (1971). The authors also recorded the buffaloes red cell diameters for the first time, which ranges from 4.5 to 6.75 microns, with an average diameter of 5.53 microns. From the recorded results we can notice the main difference between the red cell diameters of both cow and buffalo, and the authors give attention for, recording each result separately not under the term cattle.

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Table (1)
Red cell diameters in Egyptian animals

Animal	No. of Animals	Mean \pm S.E. (microns)	Average	
			Mini.	Max.
Cat	7	5.85 \pm 0.53	4.5	6.0
Dog	7	7.7 \pm 0.45	7.5	9.0
Rabbit	32	6.96 \pm 0.71	6.0	7.5
Sheep	30	3.65 \pm 0.70	3.0	4.5
Goat	9	3.0 \pm 0.65	2.25	4.5
Cow	18	4.84 \pm 0.52	4.5	6.0
Ass	15	5.84 \pm 0.71	4.5	7.5
Horse	18	5.30 \pm 0.60	4.5	6.75
Human	29	7.64 \pm 0.35	6.75	9.0
Buffaloe	40	5.53 \pm 0.62	4.5	6.75