MORPHOMETRY OF RED BLOOD CELLS ON THE BOVINES

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Aim: This study has been conducted on the bovines of the Black and White breed in order to reveal the influence of age, sex and altitude on the morphometry of red blood cells.

Materials and methods: The study has been performed on a bovines population of the Black and White breed. The population has been divided as follows:

- G 01 : 15 adult males.
- G 02 : 15 adult females.
- G 03 : 07 young males.
- G 04 : 07 young females.

Each three groups live at a different altitude region:

- Region A : Wilaya of Batna at 1000 metres or high above the sea-level.
- Region B : Wilaya of Biskra at 110 metres above the sea-level.
- Region C : Wilaya of El-Oued at or under the sea-level (zero metre).

Blood samples were obtained by venopuncture of the jugular vein. Blood smears have been executed on a glass slides immediately after sampling. The smears were colored according to the May-Grundwald-Giemsa method.

The morphometric study was achieved using with a graduated ocular and a micrometric slide with an immersion optic microscope at a grossissement of 100. The statistical analysis was undertaken using the T student test.

Results: The result did show a significant influence of age on the morphometry of red blood cells, the young bovines red blood cells are significantly larger in the three region.

Indeed, sex have a significant influence on the size of red blood cells, the erythrocytes of males are significantly larger than the females erythrocytes in the three region.

However, concerning the altitude, the study showed a significant difference between the Wilaya of Batna group and the two other groups. The bovines red blood cells of Batna Wilaya are significantly larger than the bovines red blood cells of Biskra and El-Oued groups.

Conclusion: The morphometric study of the red blood cells of the bovines that had been achieved on 132 blood smears in order to study the influence of age, sex and altitude showed:

- The red blood cells of young are significantly larger than the adult red blood cells.
- The males red blood cells size are larger than the red blood cells of females.
- The altitude had a significant influence expressed by an enlargement of the red blood cells of bovines living at high altitude.

Keywords: Bovines, Age, Sex, Altitude, Batna, Biskra, El-Oued, Morphometry, Graduated Ocular, Micrometric Slide.