

Determining age and sex of cattle on line osteometric parameters branch of the mandibular bone in the aspect of forensic veterinary examination

Yatsenko I.V., Shevchenko K.A., Getmanets O.M.

The dependence of the linear osteometric parameters of cattle's mandible on the age and sex of the animal has been studied. It has been shown that in regression analysis should to apply two nonlinear third order regression functions from the linear osteometric parameters of mandible: first for sub-threshold period (from birth to threshold criterion) and second for above-threshold period (from threshold criterion to before the deadline for research). The coefficients of determination for a combined equations of regression exceed the value $R^2 = 0,998$, and the standard error of the of the animal's age is within 3,27 months for the whole age range. The value of threshold age criterion is more for females than for males of cattle. To determine the age and sex of animals can be within the standard error of regression from several values of (at least two) mandible body measurements.

It is established that the dependence of the age of cattle from the values of the linear osteometric parameters branch of the mandibular bone has a tendency to slow growth from birth to a certain limit values (2-4 years), which corresponds to relatively rapid bone growth. Further, this dependence becomes much steeper, which indicates slow growth and a corresponding increase in the size of the bones with age.

The threshold age is more important for females' cattle than for males.

In order to apply the regression analysis considered two non-linear regression function of the third degree for linear osteometric parameters: one before reaching the age limit, the second - after. The coefficients of determination for the combined regression equation exceeded the value of 0,993, and the standard error in the determination of the age of the animal is not higher than the value $S = 3,66$ month on all age range. This demonstrates the accuracy and quality of the obtained regression equations, which determine the age of cattle.

Proven ability within the standard error of the regression to determine the age and sex of the animal at the same time the values of several (at least two) measurements linear osteometric parameters branch of the mandibular bone.

Judicial-veterinary examination, mandybulometrics, mandible, cattle, age, sex