

Histomorphometrical and comparative analysis of three muscles of Buffalo (*Bubalus bubalis* L.)

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SUMMARY

Three muscles were analyzed, *Longissimus dorsi*, *Semimembranosus* and *Caput longum Tricipitis brachii* taken from nine cow buffaloes, by examining the histochemical and morphometrical characteristics of different muscle fibres types and their distribution inside the examined muscles. Cross sectional area, perimeter, maximum and minimum diameter of about 200 fibres were measured for each muscle, and fast-twitch glycolytic fibres (FG), fast-twitch oxidative-glycolytic fibres (FOG), slow-twitch oxidative fibres (SO) were histochemically differentiated. The data have been elaborated with the SPSS software. The variance analysis indicates that there are not significant differences about dimensions between FG and FOG fibres, while the average values of transversal section area and perimeter are greater than the oxidative fibres in all examined muscles. The *Semimembranosus* muscle in comparison to the *Longissimus dorsi* and to the *Caput longum Tricipitis brachii* muscles has muscle fibres with the smallest value of transversal section area and perimeter. The balanced distribution and intense myofibrillar adenosine triphosphatase and succinic dehydrogenase activities of the three fibres types in *Caput longum Tricipitis brachii* muscle can be justified by the function performed by this muscle which, together with the other heads of the *Triceps brachii* acts essentially as extensor of the forearm in fact, differences in the dimensions of the different fibre types inside the three examined muscles have been underlined; this fact can be justified for every muscle performs different motor functions.