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THE NUCLEIC ACIDS CONTENT AT *CYPRINUS CARPIO* L. AND *CARASSIUS AURATUS GIBELIO* BLOCH. SPECIES

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Key words: *Cyprinus carpio* L., *Carassius auratus gibelio* Bloch., nucleic acids

Abstract: There were recorded differences in content of phosphate and nucleic acids at two species, *Cyprinus carpio* L. and *Carassius auratus gibelio* Bloch., for total quantity and for repartition on different tissues.

Introduction

In the last years it was observed a big interest for molecular and biochemical characterization of species. In consequence, the nucleic acids content determination and interval settlement are an integral part from the complex description and characterization of one species. That's way we are proposing to settle the interval of nucleic acids variation, based on different species of *Cyprinidae* and different tissues from the same individual.

The aim of investigations

In this article, we were proposing to dignify the phosphate and nucleic acids (DNA, RNA) content from two species – *Cyprinus carpio* L. and *Carassius auratus gibelio* Bloch., on different tissues. The derivation of two species is Podu Iloaei Fishing Farm, and the period of samples harvest was august 2002.

Materials and methods

Biological material – 5 individuals from each species (*Cyprinus carpio* L. and *Carassius auratus gibelio* Bloch.). From these individuals was taken 0,2 g of liverish, gills and muscle tissue.

The extraction of nucleic acids was made after Spirin method (Nuță, Bușneag, 1977, Spirin A., 1958).

Results and discussions

In conformity with tables 1 – 4 and graphics 1 – 4, the medium values of total nucleic acids concentration, are variable between 0.346µg/mg (for muscle) and 0.117µg/mg (for gills) at *Cyprinus carpio* L. and between 0.406µg/mg (muscle) – 0.128µg/mg (gills) at *Carassius auratus gibelio* Bloch. In conclusion, the content of total nucleic acids is higher at *Carassius auratus gibelio* Bloch. comparatively with *Cyprinus carpio* L. and in the same time in the same species, is different for different organs. For explained these differences are needed cytogenetically studies that establish the number and dimensions of chromosomes per somatically cell in case of these two analysed species.

Anterior affirmations are argued by the variation of medium values of nucleic phosphate concentration too, from the analysed samples.

Table nr. 1. – Nucleic phosphate concentration (µg/mg)

Tissue	*Carassius auratus gibelio* Bloch.	*Cyprinus carpio* L..
Liver	0.022	0.013
Gills	0.012	0.011
Muscle	0.039	0.034

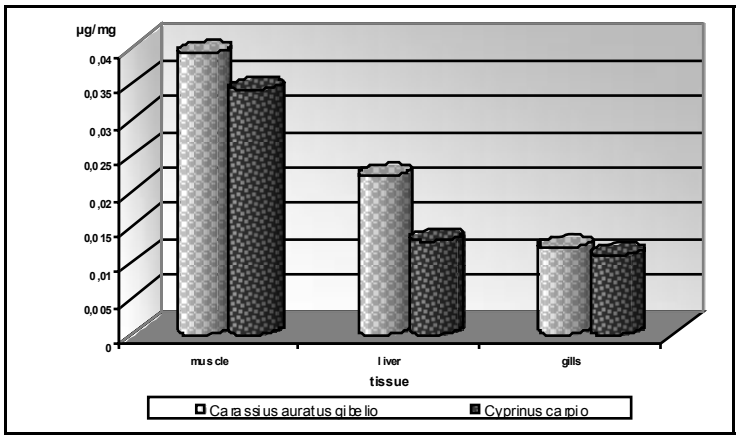
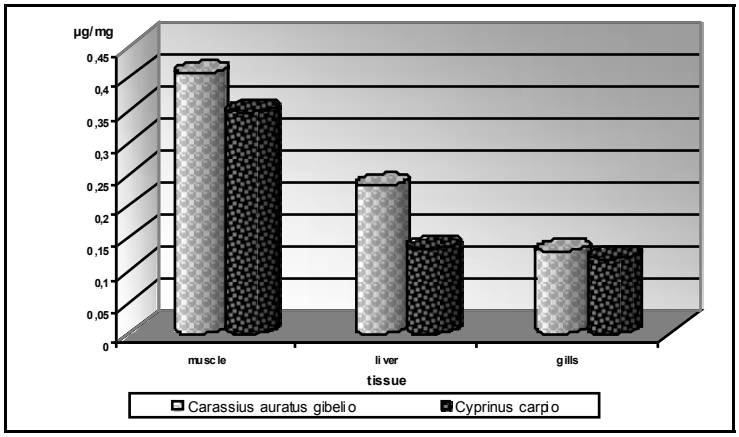


Table nr. 2. – Total nucleic acids concentration (µg/mg)

Tissue	*Carassius auratus gibelio* Bloch.	*Cyprinus carpio* L.
Liver	0.231	0.133
Gills	0.128	0.117
Muscle	0.406	0.346



If we analyse just the DNA concentration, in the same organs and in the same individuals, we can establish that the differences between the tissues of the same individual and the differences between the individuals of two species are maintained. In case of *Cyprinus carpio* L. species, the higher concentration of DNA is in muscle tissue (0.339µg/mg) and the smaller concentration is in gills (0.115µg/mg); at *Carassius auratus gibelio* Bloch. the smaller concentration is in gills (0.125µg/mg) and the higher is recorded in muscle (0.398µg/mg).

Table nr. 3. – DNA concentration (µg/mg)

Tissue	*Carassius auratus gibelio* Bloch.	*Cyprinus carpio* L.
Liver	0.226	0.130
Gills	0.125	0.115
Muscle	0.398	0.339

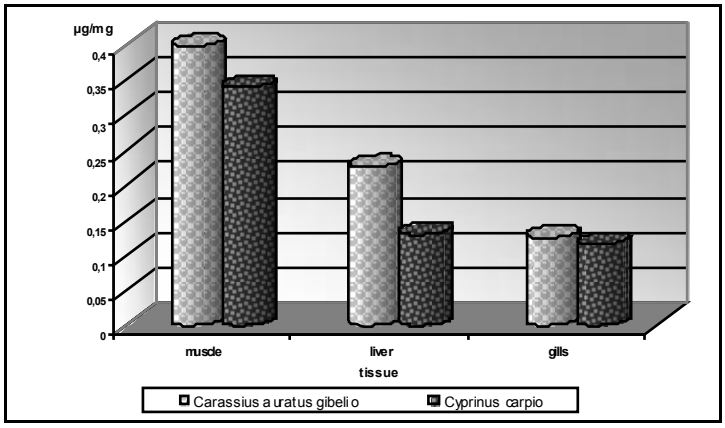
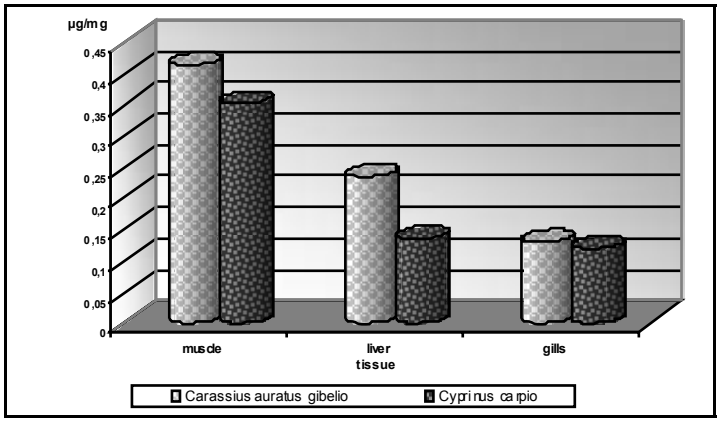


Table nr. 4. – RNA concentration (µg/mg)

Tissue	*Carassius auratus gibelio* Bloch.	*Cyprinus carpio* L.
Liver	0.235	0.135
Gills	0.130	0.119
Muscle	0.414	0.352



Obvious, referred at the used methods for determination of nucleic acids concentration, the behaviour of DNA and RNA concentration, it is normal as well as the second, respect the differences recorded by the first, between the organs of the same

individual or between the individuals of two species. In consequence, at *Cyprinus carpio* L., the smaller quantity of RNA was recorded in gills tissue and the higher in muscle. The same variation was recorded at the *Carassius auratus gibelio* Bloch. the smaller quantity was in gills, and the higher in muscle. However, at these two species, the quantity of RNA was higher than the quantity of DNA.

Conclusions

The content of total nucleic acids had recorded higher values at *Carassius auratus gibelio* Bloch. comparative with *Cyprinus carpio* L., different from three types of tissues.

The quantities of DNA were little lowering comparative with the quantities of RNA, at two different species and in three types of tissue.

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