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S3.02. Current state of phytoplankton in the Prut River lower sector

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In the composition of the Prut River phytoplankton 71 species and interspecific taxa of planktonic algae have been identified during 2014: *Cyanophyta* – 7, *Bacillariophyta* – 35, *Chlorophyta* – 25, and *Euglenophyta* – 4. The most widespread species were: *Merismopedia tenuissima, Oscillatoria planctonica, Melosira italica, Navicula cryptocephala, Synedra acus, Synedra ulna, Cocconeis placentula, Cyclotella kuetzingiana, Nitzschia acicularis, Nitzschia sigmoidea, Gomphonema olivaceum, Scenedesmus quadricauda, Euglena polymorpha, Trachelomonas hispida*. From quantitative point of view, the development of phytoplankton varies widely in Lower Prut, both in seasonal aspect and depending on sampling station.

Phytoplankton density oscillated within 0.56 –7.98 million cells/l, the higher values being registered in spring at Slobozia Mare station (6.35 million cells /l) and in autumn at Cahul (7.98 million cells/l) and upstream to Goteşti (7.25 million cell./l) stations, due to development in large quantities of *Cyanophyta*: *Synechocystis aquatilis, Aphanizomenon flos-aquae, Microcistis aeruginosa* and *Merismopedia tenuissima*. The phytoplankton biomass varied from 0.53 to 4.55 g/m^3, the highest values being found in summer at Slobozia Mare station (3.26 g/m^3), Giurgiuleşti port (4.55 g/m^3), and in autumn - upstream to Goteşti village (3.11 g/m^3). They were conditioned by the abundant development of *Bacillaryophyta* species: *Amphora ovalis, Gomphonema olivaceum, Nitzschia palea, Stauroneis anceps, Synedra acus, Surirella robusta var. splendida.* Planktonic algae are very sensible to modification of environmental conditions, and many of them are used as indicators of water saprobity. The data on the composition of phytoplankton indicator species served as base for the calculation of water saprobity index. Forty four species - indicators of water saprobity were identified, the most frequently met being: *Merismopedia tenuissima, Aphanizomenon flos aquae, Navicula cryptocephala, Synedra acus, Synedra ulna, Surirella robusta v.splendida, Cocconeis placentula, Cyclotella kuetzingiana, Nitzschia acicularis, Nitzschia sigmoidea, Gomphonema olivaceum, Scenedesmus quadricauda, Euglena polymorpha, Trachelomonas hispida*. More than 59% of them were β-mesosaprobic species, among of which the most frequent were: *Aphanizomenon flos-aquae, Synedra acus, Synedra ulna, Cocconeis placentula, Cyclotella kuetzingiana, Nitzschia sigmoidea*. The share of α-mesosaprobic species was equal to 14% (*Hantzschia amphioxys, Euglena polymorpha*), of

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o– β –mesosaprobic species - to nearly 9% (*Asterionella formosa, Melosira italica*), of β –α–mesosaprobic species - 7% (*Merismopedia tenuissima*), o–oligosaprobic species - 5% (*Cyclotella comta*). The least present were χ–xenosaprobic (*Fragilaria virescens)*, α–β –mesosaprobic (*Cyclotella meneghiniana*) and β –o–mesosaprobic species (*Navicula gracilis)*, which made all together 6%.

Values of saprobic index, calculated for different stations on the Lower Prut and seasons varied from 1.73 to 2.36, thus indicating the presence of the β-mesosaprobic zone and the water quality classes 3a „satisfactorily clear" - 3b „ weakly polluted".

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