

RESEARCH CONCERNING THE IDENTIFICATION AND SPREAD OF AQUATIC MACROPHYTES FROM TWO FRESHWATER FISH TANKS

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Abstract

Water tanks, regardless of the nature and dimensions, including two biotypes: water mass (pelagialul) and substrate (bentalul). Water mass is populated by animal and vegetable organisms, which together form pelagosul. During the period 1 June to 15 July 2010 were carried out research activities to identification and quantitative determination of aquatic vegetation present in two freshwater pools (A and B), each basin with an area of 1500 m². The research was conducted at the Research Station of Aquaculture and Aquatic Ecology over a period of 45 days and has identified an emersion submersion and floating vegetation. Aquatic macrophytes were analyzed using the Identification Manual by specific vegetation area, looking at the stem, leaves, inflorescence and whole plant. The plants identified were harvested and arranged on associations to be incorporated systematically, then he determined their biomass.

In the studied water basins was identified emersion submersion and floating aquatic vegetation. Thus, we determined 29 taxons belonging to 12 families of emersion, submersion and floating aquatic macrophytes. Following measurements done an excess of emersion aquatic vegetation (*Phragmites communis*), whose development can be prevented effectively by stocking ponds with herbivorous fish (*Ctenopharyngodon idella*).

Key words: plants, basin, macrophytes, aquatic

INTRODUCTION

From June 1 to July 15 2010, activities were carried out research to determine the quantitative and qualitative aquatic vegetation present in two freshwater pools (A and B), in the Research Station of Aquaculture and Aquatic Ecology Iasi, each pool having an area of 1500 m². During the investigations, which were conducted over a period of 45 days was identified emersion, submersion and floating aquatic vegetation.

MATERIAL AND METHODS

Aquatic macrophytes were analyzed using the Identification Manual by specific vegetation area, looking at the stem, leaves, inflorescence and whole plant. The plants identified were harvested and arranged on associations to be incorporated systematically, then he determined their biomass. Quantitative Determination of emersion, submersion and floating aquatic

vegetation, was realized on area of 1500 square meters. Surface of each pool was divided into plots with an area of one square meter, plants from each plot were grouped into families and weighed. Then, we determined the amount of biomass per square meter for each taxon. and the whole area of harvest. Two collections were made for each group of macrophytes, and the results have been scheduled.

RESULTS AND DISCUSSION

In the studied water basins was identified emersion, submersion and floating aquatic vegetation. Thus, we determined 29 taxons belonging to 12 families of emersion, submersion and floating aquatic macrophytes.

Emersion aquatic plants identified in the fisheries basin A are following:

Typha angustifolia, *Typha latifolia* –*Typhaceae*
- family

Phragmites communis, *Phalaris arundinacea* – *Poaceae*-family

Glyceria aquatica, *Glyceria* genus – *Poaceae* - family

Carex vulpina - genus *Carex* - *Cyperaceae* - family

Carex humilis – *Cyperaceae*- family

Bolboschoenus maritimus – *Cyperaceae*-family

Scirpus lacustris – *Cyperaceae* - family

In the flood banks, associations with *Carex*, *Typha* and *Phragmites* met amphibious plant shrubs that:

Polygonum amphibium - *Polygonaceae* - family

Butomus umbelatus – *Butomaceae* - family

Sparganium ramosum *Sparganiaceae*-family

Sparganium simplex *Sparganiaceae*-family

Juncus effusus - *Juncaceae* -family

Salix alba – *Salicaceae*- family

Salix triandra - *Salicaceae* -family

Unlike fish pool A, pool B pisciol missing these emersion aquatic plants: *Carex humilis* - family-family *Cyperaceae* and *Sparganium ramosum* *Sparganiaceae*.

Table 1 Spread of emersion aquatic plants in the studied aquatic basins

Basin A	Aquatic plant	Basin B
8.2 kg/sm	<i>Phragmites communis</i>	7.6 kg/sm
5.5 kg/sm	<i>Typha latifolia</i>	6.3 kg/sm
4.4 kg/sm	<i>Typha angustifolia</i>	4.1 kg/sm
4.3 kg/sm	<i>Scirpus lacustris</i>	3.4 kg/sm
2.4 kg/sm	<i>Carex vulpina</i>	2.9 kg/sm

Among the submersion plants have best developed the characteristic species for stagnant and flowing smoothly water. The most common aquatic species found in the basin were:

Ceratophyllum submersum, *Ceratophyllum demersum* - Genus *Ceratophyllum* - *Ceratophyllaceae* family

Myriophyllum spicatum - Genus *Myriophyllum* – *Ceratophyllaceae* - family

Myriophyllum – *Ceratophyllaceae* - family

Potamogeton pectinatus -

Potamogetonaceae- family

Ranunculus fluitans s- *Ranunculaceae*- family

Plantago Colonialism - *Alismaceae* - family

The water basin B was also highlighted in addition to the aquatic basin, *Potamogeton crispus* - *Potamogetonaceae* family.

Table 2 Spread of submersion aquatic plants in the studied aquatic basins

Basin A	Aquatic plant	Basin B
0.185 kg/sm	<i>Alisma plantago</i>	0.169 kg/sm
0.124 kg/sm	<i>Ranunculus fluitans</i>	0.120 kg/sm
0.120 kg/sm	<i>Potamogeton pectinatus</i>	0.123 kg/sm
0.116 kg/sm	<i>Ceratophyllum demersum</i>	0.090 kg/sm

Following measurements done found an excess of emersion aquatic vegetation emersion (*Phragmites communis*), whose development can be prevented effectively by stocking ponds with herbivorous fish (*Ctenopharyngodon idella*). In the case of plants floating in water basins have identified four known species of duckweed in our country, grass frog and lintariță:

Hydrocharis morsus wound - *Hydrochariaceae* family

Trisulca Lemna, *Lemna minor*, *Lemna Gibb*,

Lemna polyrrhiza - *Lemnaceae* family

Azolla caroliniana - Family *Lemnaceae*.

Table 3 Spread of floating aquatic plants in the studied aquatic basins

Basin A	Aquatic plant	Basin B
1.220 kg/sm	<i>Lemna</i>	1.260 kg/sm
0.490 kg/sm	<i>Hydrocharis morsus-ranae</i>	0.370 kg/sm
0.342 kg/sm	<i>Azolla caroliniana</i>	0.358 kg/sm

CONCLUSIONS

1. Following the determinations made were found an excess of emersion aquatic vegetation (*Phragmites communis*), whose development can be prevented effectively by stocking ponds with herbivorous fish (*Ctenopharyngodon idella*)

2. Taking into account the large amount of phyto-mass and substantial quantity of organic matter content, the aquatic vegetation in the two basins studied may be an important food source for fish macrofitofagi.

3. Aquatic vegetation in water basins, which were carried out extensive research is a trophic resource, and in the absence of specific consumers (fish macrofitofagi), luxury development of emersion vegetation have negatively influence of the life of the basin and also a considerable amount of organic substances and energy remain untapped.

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