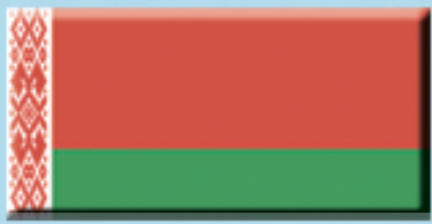


ADDING OF MICROALGAE CHLORELLA VULGARIS IMPROVE BIOLOGICAL PARAMETERS OF FISHPOND

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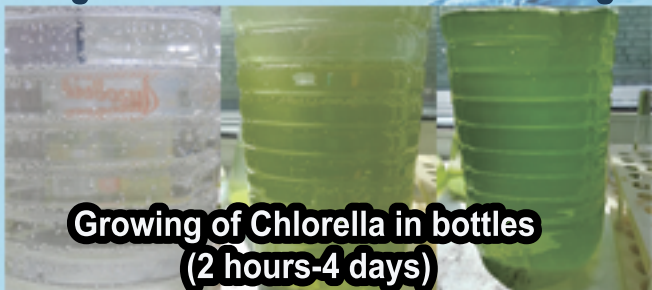


Aquaculture is one of the most promising industries for low-volume private agriculture in Belarus. But breeding fish in ponds leads to changes in water quality, resulting in eutrophication and subsequent pollution.

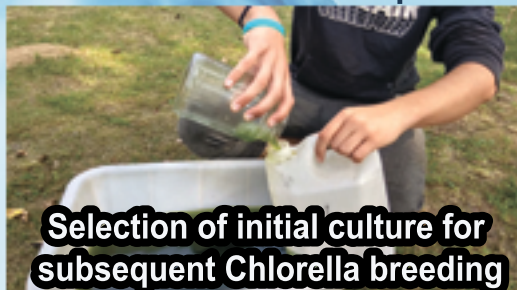
To speed up the processes of biological rehabilitation the use of the method of biological rehabilitation due to the algolization of the Chlorella is possible.



Pond in Koritsa village - place of completing of the practical stage of work



Growing of Chlorella in bottles (2 hours-4 days)



Selection of initial culture for subsequent Chlorella breeding

The GOAL is to study the possibility of using the selected Chlorella strain to improve the quality of water in the fish pond.

TASKS (2016-2018):

- 1) Select and characterize fish ponds for research.
- 2) Assess the state of water in the ponds under study before algolization begins.
- 3) To select the active strain of chlorella, the most successful in reproduction in water of ponds.
- 4) To conduct the production of chlorella suspension for algolization of the pond.
- 5) Assess the dynamics of the variability of water quality indicators after algolization.
- 6) To assess the effect of algolization on the production of mirror carp.
- 7) Formulate practical guidelines for algolization of fish ponds.

The NOVELTY of our research consists in the selection of the active strain of Chlorella and the selection of unique parameters of algolization of fish ponds in Belarus.

ECONOMIC efficiency of this project is the potential increase in fish productivity after algolization.

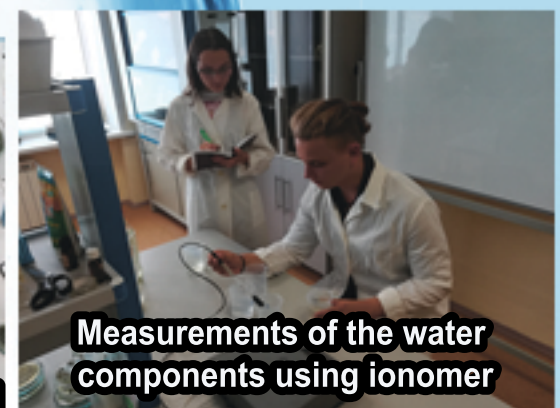
The global BENEFIT of the project is to minimize the harmful effects of the fish farm on the environment and the biological restoration of the natural balance in the fish-growing region.

RESULTS.

1. To prevent the mass development of blue-green algae and biological recovery of pond water, it is possible to carry out algolization of the fish pond with planktonic strains of chlorella.
 2. In a mini installation at home, you can successfully cultivate chlorella, which allows you to get about 40 liters of live algae biomass from 200 ml of suspension for three days.
 3. With introduction of chlorella into the fish pond 2 with an area of 0.50 ha at spring 2018, the number of aquatic organism increases, the hydrochemical, especially oxygen regime of reservoirs improves, which increases the productivity of fish ponds by 2.5 times compared to the average standards for hinged carp mirror.
 4. Growing three-age mirror carp larvae in the test ponds, fingerlings of the first planting material showed optimal results compared to the second and third yearling fingerlings, which suggests that the optimum time for fish planting material was earlier introduction into the reservoir.
- This method of algolization of ponds is suitable for reservoirs with a high density of fish landing. The use of this technique is suitable for small farms in the Republic of Belarus.



Counting the CFU in different samples from the pond



Measurements of the water components using ionomer