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ALGAE FLORA OF COTTON FIELDS

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ABSTRACT: In the article, the algal flora of cotton fields in the agroecosystem of the southern regions of the Fergana Valley was studied, according to which the algae in the soil samples taken in the winter, spring, summer and autumn seasons belonged to 143 species and genera from a total of 48 soil samples, of which 52 were cyanobacteria, 37 were green, and 3 were yellow-green. , and 51 types of diatom algae were identified.

KEYWORDS: Ferghana Valley, cotton fields, soil algae, plants, species and varieties.

INTRODUCTION

The research conducted on the study of the flora of cultivated areas of the southern part of the Fergana Valley shows that more types of algae were found in the soil of cotton fields than in other areas. Activities such as carrying out agrotechnical activities, irrigation, feeding cotton with mineral fertilizers on these field soils caused the development of soil algoflora. More samples were taken from these areas than others - 48 out of 88 in total.

Winter soil samples have a temperature of 100C on the surface of 0-5cm, 20C on a depth of 10-12cm, 50C on a layer of 45-50cm, and humidity of 50%. All groups of algae, Nostoc linckia, f. muscorum, N. punctiforme, Anabaena variabilis, A. variabilis f. The rotundospore developed in a membrane on the surface of the solution. Apart from them, Dictyococcus mucosus, Protosiphon botrydioides, Chlrococcum humicola, Chlorella vulgaris, Ch. representatives of ellipsoidea, Palmella miniata and Chlamydomonada family Ch. ablona, Ch. speciosa, Ch. atoctagama and Ch. developed globose. Chlorococum humicola, Chlorella vulgaris cells Lyngbya martensiane f. Commonly found together with edaphyca threads. Representatives of the Ulothrichaceae family - Microspora tumidula, Chlorhormidium flaccidum, Ulothrix tenerrima, Stichococcus minor - were noted in large numbers on the surface of the solution along with other algae. Cylindrospermum catenatum, Phomidium molle, Ph. angustatum, Ph. foveolarum, Ph. jadinianum, Lyngbya limnetica, L. martensiana f. edophyca, Calothrix elenkinii developed. Along with the above-mentioned diatoms, navicular atomus, N. eryptocephala, N. minima, N. muralis, Pinnularia

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silvatica, Hantzschia amphioxys, H. amphioxys f. capitate, Nitzschia amphibia, N. linearis, N. palea and others were identified. In addition to these, the soil itself contains Diatoma vulgare, Denticula elegans, Navicula atomus, N. cryptocephale, N. minima, N. muralis, Hantzschia amphioxys, H. amphioxys f. capitate, Nitzschia amphibia, N. linearis, N. palea cells were found.
In water cultures, cells of Hantzschia amphioxys developed by flash, which is usually Phomidium molle, Ph. angustatum was recorded with threads.

The growth of cyanobacteria is also evident in winter soil samples from cotton fields. Among them, Nostoc linckia f. muscorum, N. punctiforme, Anabaena variabilis, A. variabilis f. rotundospora, Cylindrospermum catenatum, Calothrix elenkinii, Phormidium angustissimum, Lyngbya limnetica from cyanobacteria from green algae Chlomydomonas speciose, Ch. Atoctogama, Palmella miniata, dictyococcus mucosus, Chlorococcum humicola, Chlorella ellipsoidea, Microspora tumidula, Ulothrix tenerria, Navicula atomus, Hantzschia amphioxys and other species developed from diatom algae. In winter samples, Nostoc linckia f. Nitrogen fixers such as muscorum, N. punctiforme, Anabaena variabilis developed well.

In the winter samples, 47 species were identified from the soil of cotton fields, 16 species were identified from under the plowed layer.

Spring soil samples are 15-160C at the surface of 0-5cm, 140C at the depth of 10-12cm, 120C at the 45-50cm layer, humidity is 42%. Chlorococcales and Chlamydomonadales from the green algae in the spring soil samples clearly developed on the wall of the tube. In cultures, Gloeocapsa species f. subnuda, Anabaena variabilis f. rotundospora, A. cylindrical f. hollerbachiana, Nostoc linckia f. muscorum, Cylindrospermum lichoniforme, Tolypothrix tenuis, Oscillatoria amoena, Phormidium farealorum, lyngbya martensiana f. edaphyca, Chlamydomonas speciose, Ch. atoctogama (abundant), Dictyococcus mucosus, Protociphon botryoides, Chlorella vulgaris (very abundant), Characium strictum, Trochiscia granulate (little), Scenedesmus bijigatus, Ankitrodesmus convolutes var. minimum, A. falcatus f. terrestris, Navicula atomus, N. silicea, Hantzschia amphioxys and other species developed from diatom algae.

In the obtained soil samples, in addition to those mentioned above, Cylindrospermum catenatum, Plectonema puteale f. edaphycum, P. boryanum, Microspora tumidula, Ulothrix tenerrima, Microtamnion kuetzingianum, Bumillariopsis brevis, Heterothrix baristoliana and together with them from diatom algae Navicula atomus, N. cryptocephala var. Intermedia, Pinnularia silvatica, Hantzschia amphyoxys, Nitzschia lincapus were identified.

In the spring soil samples taken from the cotton fields, the species of the chlorococcal order and the species of the Chlamydomanada family were well developed from green algae, and they were recorded many times. Besides them, Gloeocapsa f. In the subnuda, Anabaena cylindrical f. hollerbachiana, Cylindrospermum lichoniforme, Tolypothrix tenuis, Plectonema puteale f. edaphycum was also recorded in March.

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Thus, a total of 50 species and species were identified from spring soil samples taken from cotton fields. 14 types of algae were recorded from the soil under the plowed layer.
Summer soil samples from the cotton field on June 20, 2020, the soil temperature at the surface of 0-5cm was 240C, at the depth of 10-12cm it was 230C, at the layer of 45-50cm it was 210C, and the humidity was 40% (the day after watering). Although the air temperature is 30-350C, due to the fact that irrigation is carried out, algae are well developed. After each watering, the cotton rows are loosened with a tractor and mineral feeding is done as needed. The conducted agrotechnical activities have a positive effect on the activities of cotton and algae in its soil. In flasks with summer soil samples, cyanobacteria Phormidium foreolorum, Ph. Lamminosum, Ph. Tenua Lyngbya martensianaf. Edaphyca L. lagerhemii f. edaphyca, Plectonema boryanum, chlorococcum, humicula and chlorella vulgaris developed. The membrane on the surface of the solution in the flask contains Protosiphon botryoides, Scenedesmus cuadricanda, S. Bijugatus, Ankistrodesmus falcatus f. terrestris, A. braunii, Chlorhormidium flaccidum, Ulothrix tenerrima, Bumilleriopsis brevis, Tribonema minus, Heterothrix bristoliana and Navicula atomus, Hantxzschia amphioxys, Nitzschia palea and others from diatom algae were found. Cylindrospermum michailovskence, Oscillatoria nigra, Borzia trilocularis, Phormidium and others were found in the film formed at the bottom of the flask. Here, from diatom algae Cyclotella kuetzingiana Diatoma vulgare, Synedra tabulate var. facciculata, S. ulna, Achnanthes linearis, Navicula atomus, N. minima, N. sillecia, N. radiosa, Pinnularia gibba, Hantzschia amphioxys, Hitzschia palea and others were identified. In addition, diatoms Cyclotella kuetzin giana, tabellaria flocculosa, T. tenestrata, Meridion cicrulara and Diatoma vulgare, Synedra tabulata var. facciculata, S. ulna, Navicula bacillum var. elongate, N. radiosa, N. viridula var. pamiriensis, Pinnularia gibba, P. viridis var. falle and others were also noted.

Cylindrospermum michailovskoense, Oscillatoria nigra, Phormidium foveolarum, laminosum, Ph. Tenue, Lyngbya marten siana f. edaphyca, L. lagerhemii f. edaphyca, from the cyanobacteria Plectonema boryanum; from the green algae Scenedesmus quadricanda var. africana, Ankistrodesmus falcato fiter restris, A. Braunii, Chlorhormidium flaccidum, Ulothrix tenerrima, Microtamnion kuetzingina, Bumillariopsis brevis from yellow greens, Tribonema minus, Heterothrix bristoliana and Synedra tabulate var from diatoms. Fasciculate, Navicula atomus, Nisilicae, Hantzschia amphioxys, Nitzschia amphibia developed well. Named species and varieties were found in our samples and developed well in cultures.

A total of 67 species and varieties were identified from summer samples taken from cotton fields. 17 species were recorded from the soil below the plowed soils.

Autumn soil samples were taken at 0-5 surface temperature 180C, 10-12 cm depth 170C, 45-50cm layer 15,50C humidity 32%. By autumn, the cotton fields were not irrigated. There was not much precipitation. In October, green chlorococci "turning green" in some soils of cotton fields was also noted. In autumn soil sample cultures, Merismopedia tenuissima, Gloeocapsa punctata,

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Oscillatoria brenis, O. Amoena, Phormidium curtum from cyanobacteria at the solution level in flasks: from green algae Chlorococcum humicola, Ch. infusionum, Chlorella vulgaris, Ch. terricola, Chloroplana terricola, Characium ovatum f. minus, Scotiella levicosta, Keratococcus bicandatus and others were detected. Nostoc linckia f. Muskorum, N. Linckia f. Humifusum, N. Punctiforme f. Populorum, Anabaena cylindrical f. Hollerbachiana, Plectonema tenue, Lyngbya martensiana, Protosiphon botryoides, Scenedesmus obliquus var. alternans, Chlorhormidium floccidum, Ulothrix tenerrima, Stichococcus minor, Bumillariopsis brevis, Heterothrix bristoliana and with them Navicula atomus, N. minuscula, N. miniata, Niradiosa, Denticula elegans, Hantzschia amphyoxys, Nitzschia amphibia, Nipalla developed from diatom algae. Microcystis pulverea f. minor, Nodularia harveyana f. Sphaerocarpa, Scytonema ocellatum, Gleothrichia natans, Phormidium circum, Plectonema radiosum, Hypomonas chlorococcoides and others, from diatom algae Cyclotella kuetzingiana, C. moneghiniana, Synedra amphicephala, S. tabulate var. Acuminate, Navicula minuscula, N.radiosa, Pinnularia gibba, Hantzschia amphyoxys, Nitzschia amphibia, N. vermicularis and N. palea were identified. Empty cells of Cyclotella meneghiniana, C. kuetzingiana, Tabellata flocculosa and Synedra amphicephala, Achnantes hungarica, Stauroneis anceps, Navicula contenta, N. Exigua, N. Minuscula, N. Radiosa, Gomphonema constrictum, Rhapolodia gibba, Nitzschia ventricularis and others were detected from the soil samples. . From a total of 48 soil samples, 143 species and genera were identified, of which 52 were cyanobacteria, 37 were green, 3 were yellow-green, and 51 were diatoms.

The given data indicate that the soil of the cotton fields is rich in algae species. When cotton fields are watered from the irrigation network, algae cells also get into it. Therefore, many real water forms were recorded.

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