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## **STUDY OF FOREST PROTECTION PLANTINGS RECLAMATION IN THE VICINITY OF THE PLATNIROVSKAYA VILLAGE**

*Abstract: the purpose of the article is to study the state of protective forest strips on the example of LLC «SPHERE» of the Krasnodar Territory and their phytosanitary condition with the prospect of further use of the results for project planning on their reclamation. The scientific novelty is that for the first time an assessment of the phytosanitary condition of the protective forest strips based on LLC «SPHERE» was carried out due to the routing and geobotanical description methods.*

*Keywords: land reclamation, forest protection plantations, geobotanical description, bonitet, environmental assessment.*

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## **ИССЛЕДОВАНИЕ ЛЕСНЫХ МЕЛИОРАТИВНЫХ НАСАЖДЕНИЙ В ОКРЕСТНОСТЯХ СТАНИЦЫ ПЛАТНИРОВСКАЯ**

**Аннотация:** цель статьи заключается в изучении состояния полегающих лесных полос на примере ООО «СФЕРА» Краснодарского края, их фитосанитарного состояния с перспективой дальнейшего использования результатов для планирования проекта по их рекультивации. Научная новизна состоит в том, что впервые была проведена оценка фитосанитарного состояния полегающих лесных полос ООО «СФЕРА» с помощью методов маршрутного и геоботанического описания.

**Ключевые слова:** мелиорация, лесозащитные насаждения, геоботаническое описание, бонитет, экологическая оценка.

### *Introduction.*

Protective forest stands are green spaces of anthropogenic origin that protect the soil from wind and water erosion, regulate the microclimate of fields and perform many other functions. Forest belts are divided according to their functions into windproof, water-regulating, pasture-protective, coastal, channel and roadside.

In the process of conducting the research, such tasks were solved: 1) the establishment of the species composition of protective forest plantations; 2) the measurement of morphological indicators; 3) the assessment of the phytosanitary condition; 4) the study of agrocenoses species diversity.

The aim of the research is that the processes of erosion and deflation have a great impact on the agricultural landscapes state, in which there is a decrease in the humus content level. The way out of the situation is a system of measures aimed at overcoming the harmful effects of dry winds on the harvest.

The following methods were used:

1) a route method that helped to determine the diversity of phytocenoses and their placement in ecological niches;

2) a geobotanical description, in which a 10×10 meter platform was laid, then the number of trees on the selected site was calculated, the height of the trees was determined (this indicator was obtained by the method of «a little man» (i.e. one person stands at the base of the tree, and the other counts how many times he will fit to the middle of the trunk). The final figure was multiplied by the height of a person and then

multiplied by 2). The bonus class (determined mainly by the tree species, average age and height of the plantation; carried out according to the table of M.M. Orlov, 1931) [3] and stand formulas were compiled (the composition of plantings was determined by the share of participation of each species in the total stock of plantings, written in the form of a formula) [1].

### *Characteristics of forest protection plantations reclamation*

So, the research of protective and reclamation plantations took place in the vicinity of the Platnirovskaya village on the territory of LLC «SPHERE». These forest belts serve as windproof barriers (Fig. 1, Fig. 2 – T.K. Samsonova's archive photo).



Figure 1. Protective and reclamation plantings of LLC «SPHERE»

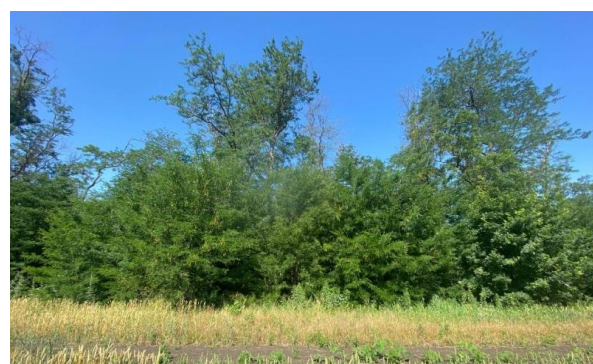


Figure 2. Forest belt No. 2

The coordinates of the test site are: 45.36602° North, 39.34892° East. The length of the plot is 20 m, the width is 13 m. The plot area is 260 m<sup>2</sup>. Wheat crops are located opposite the forest belt. Among the young trees grow: a) common ash (*Fraxinus excelsior*) – 111 trees (h = 3,4 m, ecological state 2); b) gledichia tricolor (*Gleditsia triacanthos*) – 17 trees (h = 3,5 m, ecological state 2); c) karagana treelike (*Caragana arborescens*) – 1 tree (h = 2,5 m, ecological state 2); d) petiolate oak (*Quercus robur*) – 2 trees (h = 0,5m, ecological state 2); e) mahalebka ordinary (*Prunus mahaleb*) – 2 trees (h = 3 m, ecological state 2); f) one-petaled hawthorn (*Crataegus monogram*) – 7 trees (h = 2 m, ecological state 2); g) tatar honeysuckle (*Lonicera tatarica*) – 3 trees (h = 2 m, ecological state 3). There were 160 trees on the site in total. The table below shows the data on tree species for the test site (Table 1).

Table 1

### Tree species in forest belt No. 2

No.	Tree species	H, m	d, cm	Bonitet	Ecological state
1	Gledichia tricolor	15	56	5	3
2	Gledichia tricolor	14	36	4	3
3	Common ash	10	32	4	4
4	Common ash	12	26	5	4
5	Gledichia tricolor	15	35	4	4
6	Common ash	12	32	5	4
7	Common ash	14,5	35	4	3
8	Common ash	15	36	4	4
9	Gledichia tricolor	6,6	27	4	3
10	Gledichia tricolor	10	36	4	3
11	Common ash	6,8	13	5	3
12	Common ash	12,2	30	5	3
13	Common ash	5	16	5	3
14	Common ash	10	32	4	4
11	Common ash	12	19	5	3

The formula of the composition of the plantings: 7CA3GT (CA – Common ash; GT – Gledichia tricolor). The table below shows the average values on each tree species (Table 2).

Table 2

## Average values of tree species

No.	Tree species	H, m	d, cm	Bonitet	Ecological state
1	Common ash	9,8	24,5	5	3
2	Gledichia tricolor	13,8	28	4	3

We also calculated the number of fallen trees – 2, the number of stumps – 11. During the desk research, the following values were calculated: a) the average distance between rows – 1,5 m; b) the average distance between trees – 1,5 m; c) the power supply area:  $S_{power} = 1,5 * 1,5 = 2,25 \text{ m}^2$ ; d) safety factor:  $F_{safety} = 654/4444 = 0,15$  [2].

So, common ash (*Fraxinus excelsior*) referring to the olive family is predominant in forest belt No. 2.

The received data can be used during practical lessons on studying ecology of natural and artificial tree distribution.

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