

STREET PLANTATIONS OF NOVGOROD-SIVERSKY DOWNTOWN

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The inventory of tree plantations in the central part of historical small town Novgorod-Syversky of Chernigiv region was made. The assortment and state of tree species were analyzed. Tree species were estimated by ornamental-age (durability) scale.

Key words: *street plantations, tree species, age, condition*

Novgorod-Siversky is the northernmost town in Chernihiv region, located close to national borders with Belarus and Russia, a historic town, has been mentioned in ancient manuscripts for the first time in the 1147. Now it is a small town with population over 13,000 people, and an area of 2146 ha. A couple decades ago the town had a strong recreational potential (with picturesque summer vacation homes, recreation departments on the right bank of the Desna River and Pioneer camps just outside of town), most of which unfortunately has been lost. However, there's quite something citizens can be proud of - a great recreational park with a quite modern stadium, and a total area of 9ha, has been preserved in the town.

Also, there are few another objects that should be noted for their exemplary greening – “Spaso-Preobrazhensky” male monastery, the “Siversky” hotel built nearby in the early 2004 on the occasion of meeting of the three presidents, old and still functioning cemetery, adjacent to the park and hills and ravines around the town.

Objective of the research – analysis of street plantations in Novgorod-Siversky town.

Materials and methods of the research. inventorying of tree plantations was conducted by conventional methods for four streets in the downtown - Cozatska, Lenina, Svobody, Shevchenko Streets. Also a structural analysis of tree plantations with species classification for their participation share was carried out [1]:



Picture 1. Maystrenko Street (towards “Siversky” hotel and “Spaso-Preobrazhensky” Monastery)



Picture 2. View onto the “Siversky” Hotel

Grade 1 - species with very low percentage of presence (less than 0.5%), Grade 2 - low (from 0.5 to 1%), Grade 3 - with an average (from 1 to 5% inclusive), Grade 4 - high (from 5 to 10%) and grade 5 - very high percentage of presence (over 10%).

Correlation of native and introduced species was determined. Tree plantations were evaluated by ornamental durability scale [2].

Results of the research. According to the inventory, in the downtown's street plantations there are 18 tree species represent (Fig. 1), among which only one is coniferous (*Thuja occidentalis* L.), occurring solely once - in front of office building. The amount of native tree species is 54.8%.

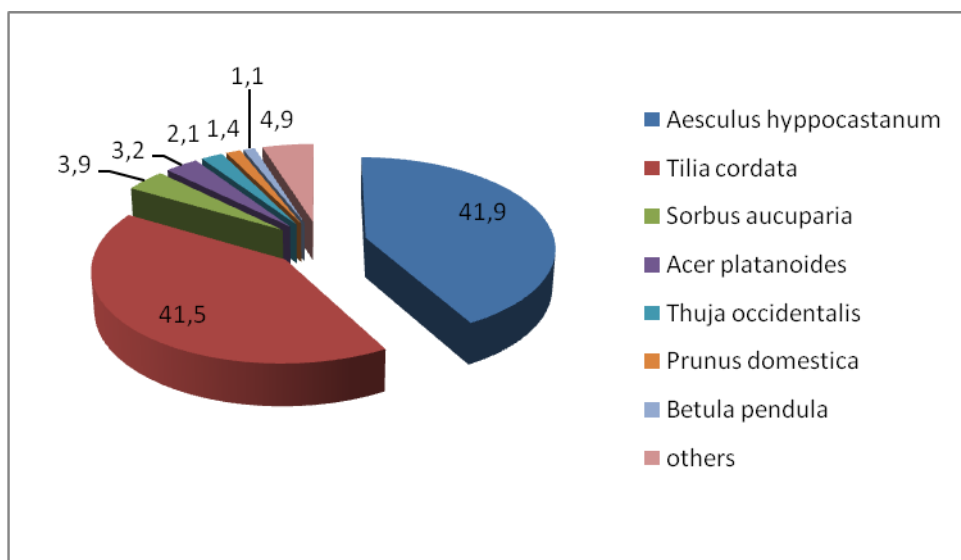


Figure 3. Tree species participation share among street plantations, %

There are two species with very high proportion of participation (Class 5): *Aesculus hyppocastanum* and *Tilia cordata*, number of which are respectively 41.9 and 41.5%; the remaining part of each species does not exceed 3.9%. Thus, the average share of participation (1.1 – 3.9%, Grade 3) has five species: *Sorbus aucuparia*, *Acer platanoides*, *Thuja occidentalis*, *Prunus domestica*, *Betula pendula*; three species – low (Class 2) and eight species – very low (Class 1), that occur singly.

The age of trees in street plantations ranges from a few years old (single entities of *Fraxinus excelsior*, *Morus alba*, *Ulmus scabra*) to 60-70 years old or more (*Populus nigra*, *Tilia cordata*, *Acer platanoides*, *Aesculus hyppocastanum*). Average age – is 57 years. The average height of tree species ranges from 1-3 to 11-15 m. The height of two most represented species is about 7 m ($7,1 \pm 3,1$ m for *Tilia cordata* and $7,2 \pm 0,2$ m for *Aesculus hyppocastanum*). Their average diameters are respectively $73,2 \pm 11,2$ and $59 \pm 1,75$ cm.

The average durability class of trees among the studied street plantations is 2.1. 88.6% of the trees belong to the second durability class (part of a species, that preserve ornamental qualities to the age from 30 to 50 years), remaining 11.4% – to third (group of short lifespan species, that retain decorative qualities up to the age of 25-30 years). This is not an optimistic index at all, looking at the fairly high average age of trees (Table 1), which indicates that plantations have mostly exceeded its planned limit of ornamental age for urban areas and will require radical reconstruction in the near future.

1. Structure of street plantations

Total trees, %	Age group, years			Weighted average			
	Under 15	from 16 to 50	over 50	height, m	diameter, cm	General condition, points	ornamental condition, points
100,0	0,9	10,5	88,6	6,9	61,5	2,9	2,8

Condition of trees is close to satisfactory (average grade Class – 2.9, Figure 4), ornamental state, – 2.8.

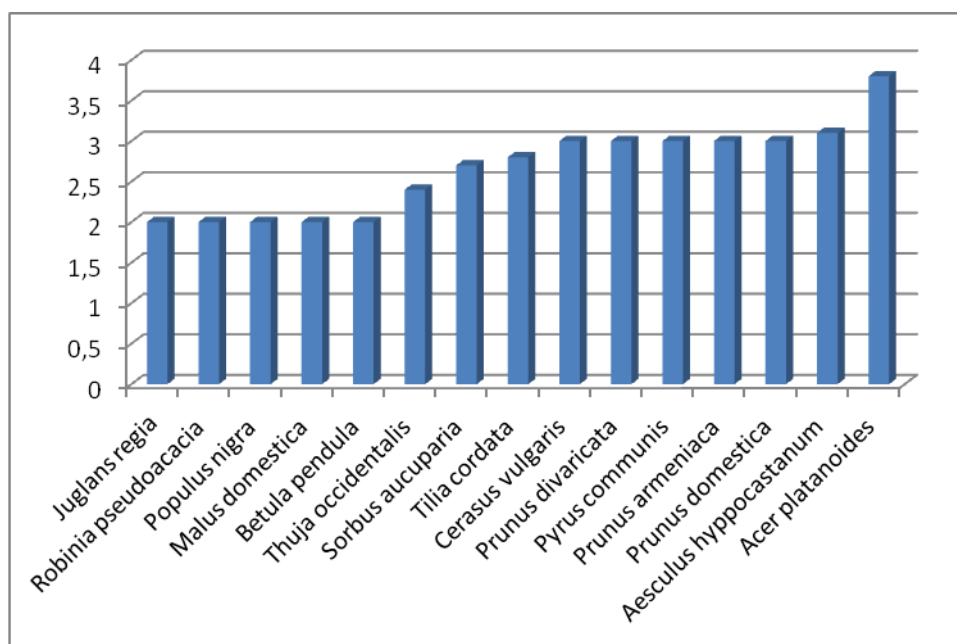


Figure 4. Tree condition by species, points

Following trees have a somewhat worse general and ornamental condition: *Aesculus hyppocastanum* and old *Acer platanoides* trees. *Betula pendula*, *Malus*

domestica, *Juglans regia*, *Populus nigra* trees – are in a good condition; *Juglans regia*, *Betula pendula* and some *Acer platanoides* trees have the highest ornamental state.

Conclusions

The study of street plantations has shown that the assortment of trees is quite poor – only 18 tree species, six of which have been introduced manually. Introduced species comprise 45.2 % of represented trees. Two tree species – *Aesculus hyppocastanum* and *Tilia cordata* are accounting for 83.4 %. Tree plantations as a whole have a satisfactory condition. The average durability class of tree plantations is 2.1. The average age of trees in street plantations is over 50 years old, meaning it has reached the limit age of ornamental status. Reconstruction of street plantations must provide introduction of shrubs in accordance with existing regulations. The town can boast a very high-ornamental example of street design.

LITERATURE

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