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Determination of decorative value of green hedges in Chernivtsi region

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Abstract. The decorative value of the most common varieties of green hedges in Bukovyna has been determined. Green hedges with a high degree of decorative value have been distinguished. A number of species have been proposed as candidates for planting of greenery for amenity and decoration.

Keywords: *hedges, aesthetic evaluation, decorative, evaluation criteria*

The objective of the study is to analyse green hedges growing within Chernivtsi region for the purpose of establishing their decorative value, to distinguish specific and individual decorative peculiarities, as well as to reveal prospects for using green hedges in Bukovyna.

One of the decorative components of any greenery in populated areas is the green hedge, this is especially true once there is a relationship between functionality and decorative value. While the functionality of each green hedge can be determined reasonably well [1, 5], the decorative value determination is a matter of individual opinion.

There is a variety of procedures to determine the decorative values of trees and shrubs: N. Kotelova, N. Grečko, 1969; N. Kotelova, O. Vinogradova, 1974; H. Â kubov, 2005; A. Kalmykova, 2009. They are all based on the merit point system. When making a general assessment of decorative value of green hedges in Bukovyna, T. Andruško and A. Tereškin scale of value was used to determine decorative features of shrubs (Andruško, 2012).

The procedure involves the analysis of decorative features for free-growing shrubs such as architectonics of shrubs; the colour of shoots; the terms and duration of the foliage cover; texture, colour, seasonal foliage colour change; the terms and duration of flowering; the size of inflorescence; the inflorescence colour set-off against the background of foliage; the mode of fruit dispersal and preservation; the size and decorative value of fruits; colour set-off; the density of fruits in the crown; the fragrance and acceptance of shrubbery on the background of landscape.

Since the given procedure is used to assess separately growing shrubs, while we are to assess green hedges (continuous shrub row planting), it was modified and supplemented with decorative features: the integrity of green hedge; the height of bareness from below; its contour; assessment of evergreen hedge; the division of phenophases of flowering and fruiting. Depending on the manner of creation, all the hedges were classified into shaped (specially pruned and trimmed) and free-growing (a complete analysis and tables are to be presented in the dissertation work).

The species composition of green hedges in Chernivtsi region is of a great diversity: about thirty plant species are on record (Table 1); however, no more than seven of them are used more frequently than others. That is why an analysis was done to find out the most freguently used plant species (Table 2). [7, 8]

Table 1. Analysis of green hedges in Chernivtsi region for their plant species used.

Name of species	Number of pieces	%
Acer Ginnala	1	0.36
Acer platanoides	3	1.07
Buxus sempervirens	52	18.5
Carpinus betulus	55	19.6
Cotoneaster melanocarpa	4	1.4
Crataegus monogyna	1	0.36
Forsythia suspense	2	0.71
Juniperus Sabina	1	0.36
Juniperus virginiana	1	0.36
Ligustrum vulgare	32	11.4
Parthenocissus quinquefolia	10	3.56
Philadelphus coronaries	1	0.36
Physocarpus opulifolius	16	5.69
Picea abies	3	1.07
Robinia pseudoacacia	1	0.36
Spiraea media	9	3.2
Spiraea salicifolia	2	0.71
Spiraea Vanhouttei	16	5.69
Symphoricarpus albus	7	2.49
Syringa vulgaris	6	2.13
Thelycrania alba	48	17.1
Thelycrania sanguinea	4	1.4
Thuja occidentalis	4	1.4
Tilia cordata	1	0.36
Tilia platyphyllos	1	0.36
Total	281	100

Based on the modified scale, distinguished were green hedges of various degrees of decorative value: of very high degree – 40- 49 points; high degree – 31-39 points; medium degree – 22-30 points; low degree (less than 21 points) (Fig. 1).

Based on the data from Fig.1 and Table 2, we can see that the decorative value of green hedges that are specially shaped are rated higher in most cases as compared to free-growing hedges. Buxus sempervirens and Ligustrum vulgare-formed hedges are best amenable to shaping, these are small-leaved species that are able to withstand heavy pruning to form different figures of regular and irregular shape. Therefore they get the highest decorative rating only when they are subjected to pruning.

There is little difference, up to 2 points, between the trimmed and free-growing hedges of lovely flowering and broadleaved species. The best example of this are Symphoricarpus albus-formed and Thelycrania alba-formed hedges which have the same or approximately the same decorative rating both in shaped and free-growing conditions.

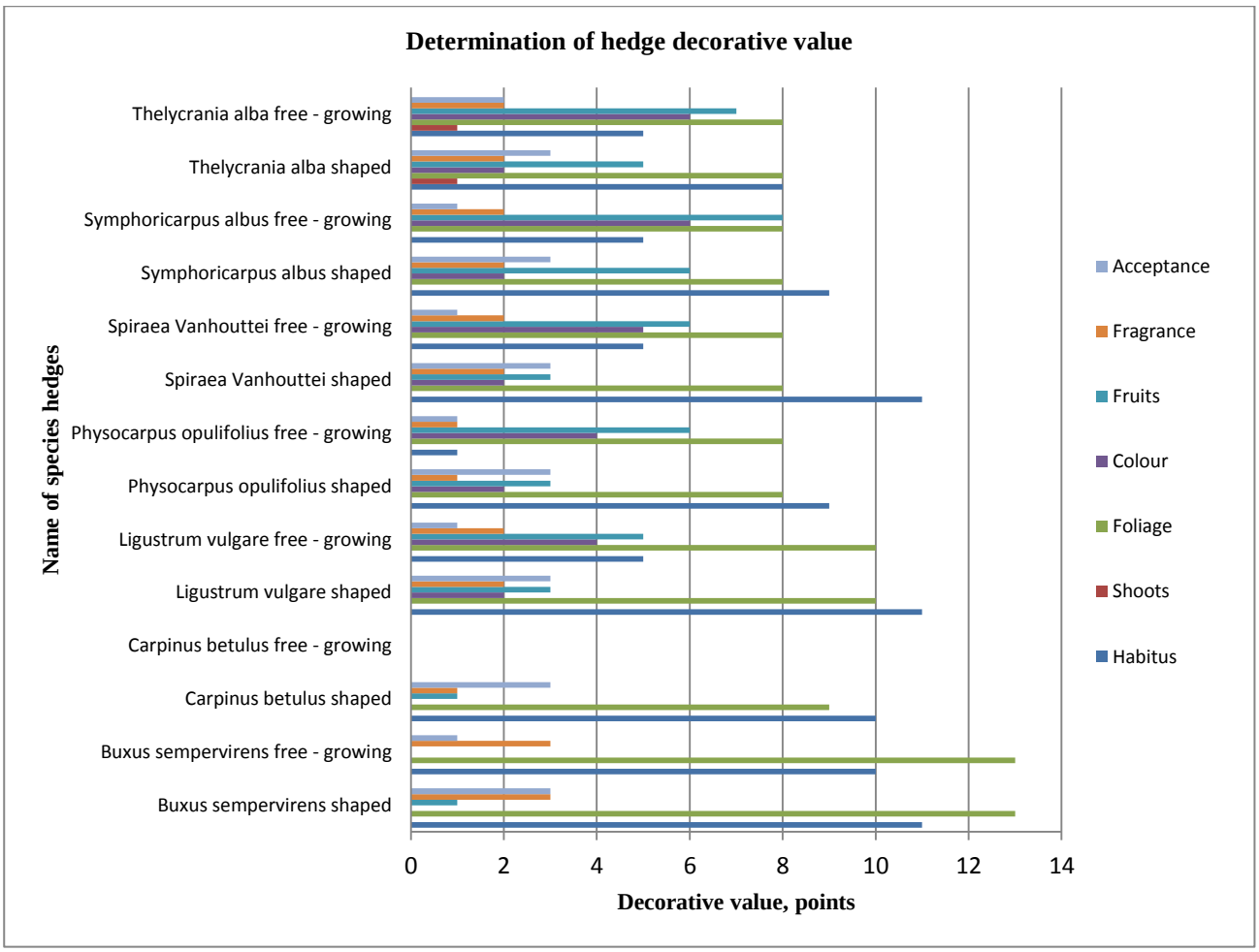

Table 2. Decorative value of green hedges

No. order	Name of species	Type of green hedge	Decorative value of hedge	
			Points	Degree
1	Buxus sempervirens	Shaped	31	High
		Free-growing	27	Medium
2	Carpinus betulus	Shaped	24	Medium
		Free-growing	-	-
3	Ligustrum vulgare	Shaped	31	High
		Free-growing	27	Medium
4	Physocarpus opulifolius	Shaped	26	Medium
		Free-growing	21	Low
5	Spiraea Vanhouttei	Shaped	29	Medium
		Free-growing	27	Medium
6	Symphoricarpus albus	Shaped	30	High
		Free-growing	30	High
7	Thelycrania alba	Shaped	29	Medium
		Free-growing	31	High

Buxus sempervirens–formed green hedge is worthy of special attention, this hedge keeps up its decorative value all the year round, giving off sweet aroma when flowering. Also, of some unconventional appearance in wintertime is Thelycrania alba-formed hedge due to its red-brown shoots and architectonics, while in autumn it puts on violet-red foliage.

During the flowering period, the most attractive is a free-growing Spiraea Vanhouttei-formed hedge. Its tassel-assembled flowers are arranged along the whole length of the shoots, which endows the hedge with highly aesthetical attractiveness (Fig.2).

Noteworthy is also Symphoricarpus albus-formed hedge (30 points) that is valued for its long-term preservation of fruits which remain on the plants untill the next season. The white-coloured fruits are most conspicuous in late autumn and early spring in the absence of snow.

During the flowering and fruiting periods Carpinus betulus-formed hedge does not change the degree of its decorative value. This is due to its inexpressive small flowers of green-reddish catkins and fruits that blend in with the leaves or they are not conspicuous at all in the shaped hedge. Also, the colour of the foliage differ little in autumn and wintertime.

a) b) c)

Figure 2. a) free-growing Symphoricarpus albus-formed green hedge in Lesia Ukrainka street, the city of Chernivtsi; b) free-growing Spiraea Vanhouttei-ormed green hedge in Vorobkevych street, the city of Chernivtsi; c) Buxus sempervirens-formed hedge in Chervonoarmiyska street, the city of Chernivtsi.

This type of hedge has a marked advantage: it is possible to form hedges of various height (1–3 m) and length; also this is the least expensive species to use.

In general, proper tending green hedges always yields good results regardless of which species is used.

As a result of the assessment of green hedges conducted by the scale of decorative values, the following species have been found to be of highly decorative value throughout the whole growing season: Buxus sempervirens, Ligustrum vulgare, Symphoricarpus albus. The species Spiraea Vanhouttei, Carpinus betulus are found to be of medium decorative value.

In our opinion, the assortment of species used for green hedges in Chernivtsi region can be qualitatively and quantitatively increased by using highly decorative species such as Berberis thunbergii, Taxus bacata, Laurocerasus officinalis, Cotinus coggygria and many others.

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Мирончук К.В. Оценка декоративных качеств живых изгородей в Черновицкой области

Аннотация. Проведено общую оценку декоративности наиболее распространенных видовых живых изгородей Буковины. Выделены живые изгороди с высокими показателями декоративности для будущего использования в озеленении.

Ключевые слова: *живая изгородь, эстетическая оценка, декоративность, критерии оценки*