THE FORMING TRIMMING INFLUENCE ON HEDGES DEVELOPMENT AND DYNAMICS OF SHOOT GROWTH.

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The technology of molding trim for different types of hedges is investigated. The methods of cutting; the hedges reaction to trimming; studying the growth of shoots dynamics on the example of experimental specimens. Installing the difference in shaping and care of free growing and formed hedges.

Keywords: hedge, forming trimming, growth, development, free growing hedge, dynamics.

The value of proper forming cutting can not be overestimated, as the appearance of hedges depends on the formation of the first three - four years. It may be noted that the golden rule in the creation of each hedge is correct and timely trimming, which stimulates the formation of abundant basal increments, or base fence will be bare and the upper part - thickened. The degree of initial cut depends on the type of plant that forms a hedge and belonging to a particular group. (Fig. 1) [1.4.]

a) b)

Figure.1. Initial forming

a) deciduous hedge, where the strong initial trimming was not held. Basal increases are small.

b) deciduous hedge that is strongly cut off when planting. As a result thick, evenly placed basal increases appeared .

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Hedges can be conditionally divided into **three** groups, depending on the necessity of realization of trimming:

Group I - squat bushy shrubs basis: Ligustrum vulgare, Cornus alba, C. sanguinea, Forsythia suspense, F. media and many others.

This group also includes evergreen shrubs: Lonicera nitida, Buxus sempervirens, Escallonia sempervirens.

Group II - relatively straight growing bushes. These are: Fagus silvatica, Carpinus betulus, Spiraea vanhouttei, S. thunbergii, S. media, S. salicifolia, S. opulifolia and many others.

Group III - pine and many other evergreen shrubs - Taxus baccata, T. Cuspidata, Thuja occidentalis, Th. orientalis, Berberis thunbergii different forms etc .

When planting them slightly messy side branches are cut off to stimulate the formation of new lateral shoots. The main stem is not cut off until it reaches the desired height. Clipping the next years is only to provide the desired shape of lateral growth.

Material and research methods. 14 experimental hedges in the village Beregomet, Vyzhnytsya district Chernivtsi region have been planted (Table. 1). They were landed between 6.04.2011.- 21.04.2011. The following species: Shrub - Thelycrania alba and Forsythia suspense and wood - Fagus silvatica and Carpinus betulus were used to create these hedges.

1. Scheme of the experimental hedges planting.

The kind of plant	Name	Planting scheme	Number of series	Length	Type of hedge		Number of garden material, number	Group of hedges initial formation
					Shaped	Unshaped		
Thelycrania alba	Th1	0,3	1	3		+	10	I
	Th2	0,3*0,4*2	2	3		+	20	
	Th3	0,3	1	3	+		10	
	Th4	0,3*0,4*2	2	3	+		20	
Forsythia suspense	Fos1	0,4	1	3	+		8	I
	Fos2	0,4*0,4	2	3	+		16	

Fagus silvatica	Fas1	0,25*0,3*2	2	3	+		24	II
	Fas2	0,25*0,3*2	2	3	+		24	
	Fas3	0,25	1	3	+		12	
	Fas4	0,25	1	3	+		12	
Carpinus betulus	Car1	0,25*0,3*2	2	3	+		24	II
	Car2	0,25*0,3*3	3	3	+		36	
	Car3	0,25	1	3	+		12	
	Car4	0,25	1	3	+		12	

The purpose of creating these hedges was to investigate:

- providing of experimental trimming (Table 2);
- Studying the trimming effect on the dynamics of shoot growth of individual plants in hedges before and after clipping;
- Comparing the dynamics of different hedges growth ;
- Comparing shaped and unshaped hedges development;
- Comparing the structure of similar and experimental hedges, their identity in species composition that grow in under conditions and in other areas [2].

2. Providing of trimming for the period 2012 - 2013.

Name of species hedges	Number of series	Year 2012						Year 2013					
		Date	H	Date	H	Date	H	Date	H	Date	H	Date	H
Fagus silvatica	2	24.03	0,6	1.05	0,6	1.08	0,6	1.04	0,7	1.06	0,7	1.08	1,1
	2		0,25		-		-		-		-		0,3
	1		0,6		0,6		0,6		0,7		0,7		1,1
	1		0,25		-		-		-		-		0,3
Carpinus betulus	2	24.03	0,5	1.05	0,6	1.08	0,6	1.04	0,7	1.06	1,1	1.08	1,1
	3		0,2		0,3		0,4		0,5		1,1		1,1
	1		0,5		0,6		0,6		0,7		0,7		0,7
	1		0,2		0,3		0,4		0,4		0,4		0,4
Thelycrania alba	1	24.03	Unsh.	1.05	Unsh.	1.08	Unsh.	1.04	Unsh.	1.06	Unsh.	1.08	Unsh.
	2		Unsh.		Unsh.		Unsh.		Unsh.		Unsh		Unsh
	1		0,5		0,5		0,6		0,7		1,1		1,2
	2		0,5		0,5		0,6		0,7		1,1		1,2
Forsythia suspense	1	-	-	1.05	0,7	1.08	0,7	-	-	1.06	1,1	1.08	1,3
	2		-		1,0		1,0		-		1,1		1,3

Note: H - height cutting hedges, m;

Unsh.-unshaped

After forming clipping at different heights, it was found that a very negative impact on the single-row hedge of Fagus silvatica had a low trimming at a height

of 25 cm, which led to a significant decrease in the rate of plant growth and development in the hedges.

Results of investigation. Comparing experimental hedges with Fagus silvatica, we see that the double-row hedges show better growth dynamics than single row one, despite cutting height. Two-row hedge Fas2 responded to the low cut not so painfully, its average growth was 32.8 cm longer than single-row Fas4. The highest increase was in the dynamics of two-row hedge Fas1, which was formed at a height of 60cm (2012.). Its overall growth during 2013 was 76,8cm (Figure 2).

According to the results of investigation the initial cripping plants of the second group should be less intense and each type of plant should have its own cutting scheme.

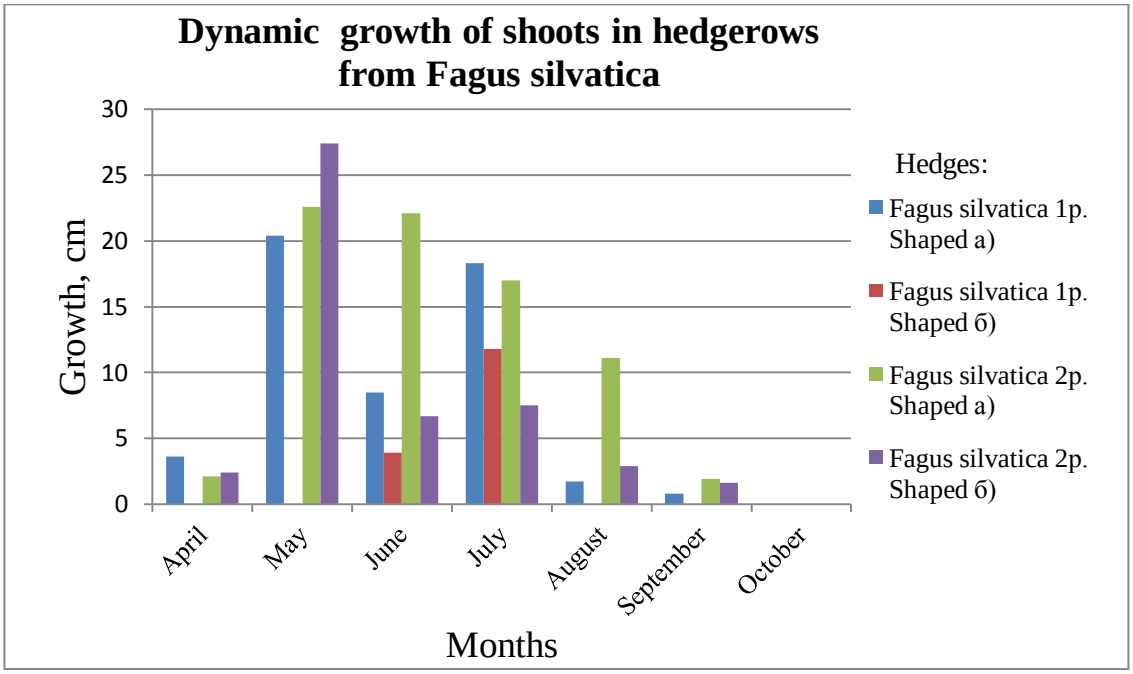

Figure. 2

Correctly chosen initial formation was applied to hedges of Thelycrania alba, which belongs to the first group. Comparing shaped and unshaped hedges of Thelycrania alba, we note that the total increase for 2013 year differs slightly. So, two-row hedge gave the greatest increase, 108,1cm (Fig. 3), that is 13,3cm longer than unshaped hedge. A similar difference in growth of one row hedges was 2,1cm.

Having analyzed these hedges, we can say that they are characterized by a stable trend in most of the shoots regardless of row, structure and shape hedges. As a result a full hedge can be created in 3-4years.

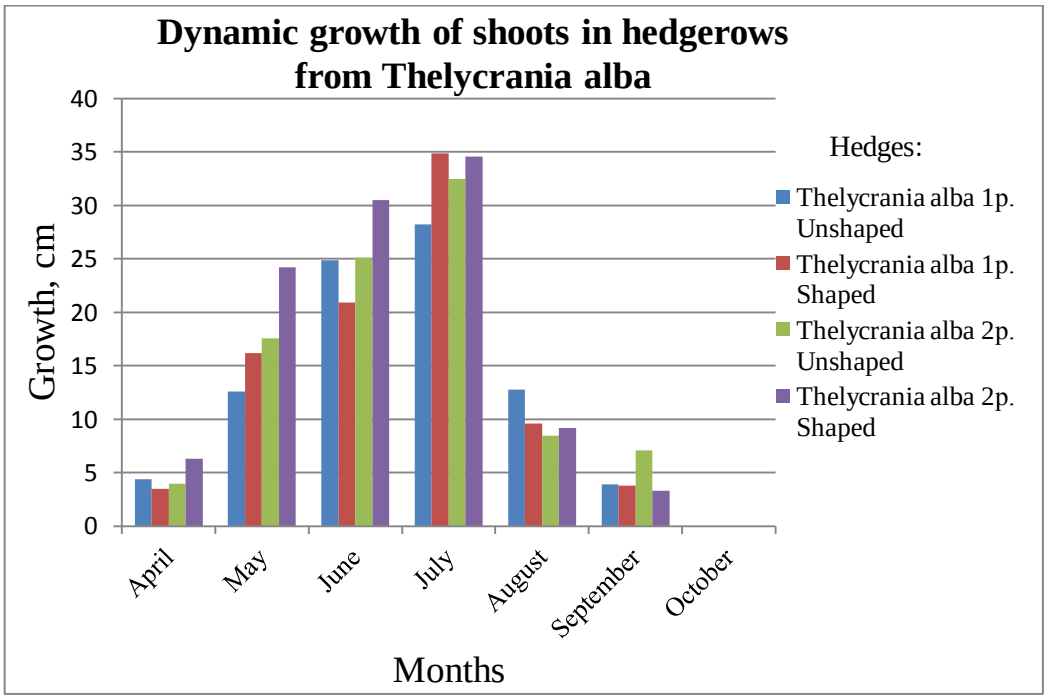

Figure.3

Forsythia suspensa belongs to the I st group of hedges. It is known that generative buds are laid on last year's shoots, so forming trimming is conducted after blooming, this provides aesthetic appearance, texture, regular and abundant flowering (Fig.4).

Figure.4 Forsythia suspensa hedges (Fos2) after the third forming trimming 01.06.2013.

It is a misconception that unshaped hedges do not need care in the form of corrective trimming, which includes removing protruding and dry shoots.

Therefore, dynamic growth in forming hedges of beautiful flowering species like Forsythia is stable and positive, (Fig. 5).

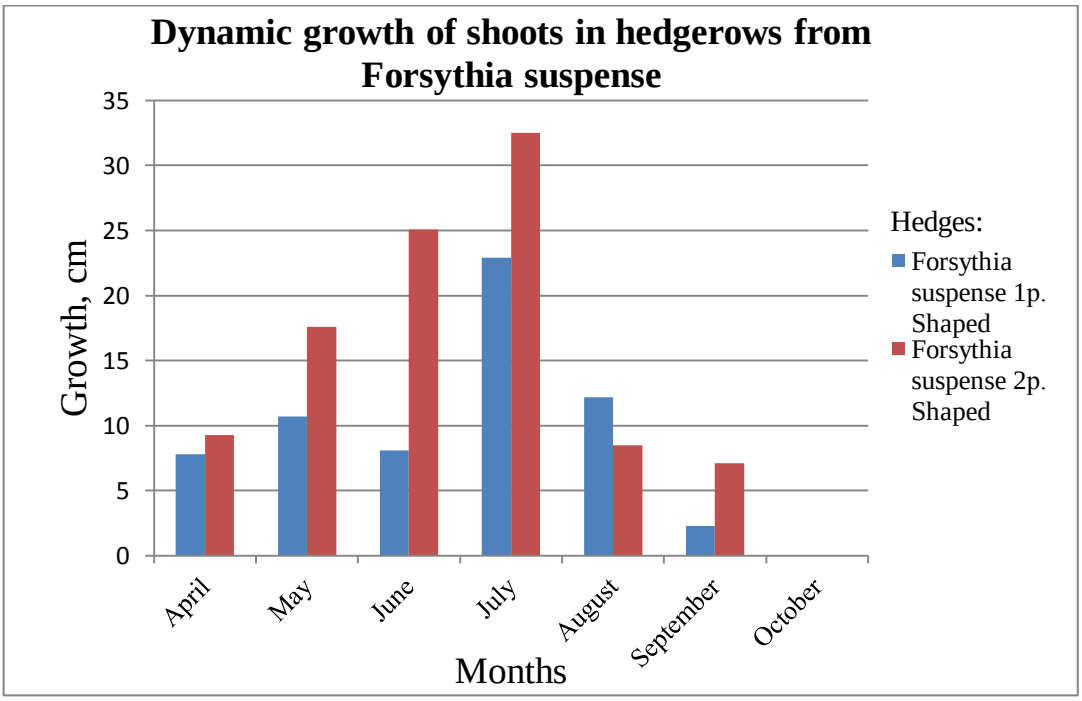

Figure.5

As we can see from the chart, the double-row hedge of Forsythia suspense, has greater overall increase of 36% than single-row, this is due to the microclimate in hedges. Under the influence of winds single-row hedge began to lose its shape and the bush hedges bowed their heads and needed immediate support, garters. That is why, we recommend only multi row of Forsythia suspense.

To create experimental hedges one more tree species - Hornbeam except forest beech was used. Compared to beech forest, Hornbeam has better growth dynamics, tolerate a trimming easier. So having applied the low (20 - 30 cm) forming trimming similar to hedges of hornbeam and beech we have got quite different reactions of plants to them. Hedges of hornbeam showed better growth and fast recovery after cutting than beech.

Comparing the same species, is also evident that multi hedges have better growth dynamics than one row – hedges (Fig. 6).

The overall growth of shoots in three-row hedges is high, which is 110,4cm during the growing season 2013.

The aesthetic appearance of Carpinus betulus hedges is satisfactory now, it indicates that we need more time and care to create a full hedge of beech.

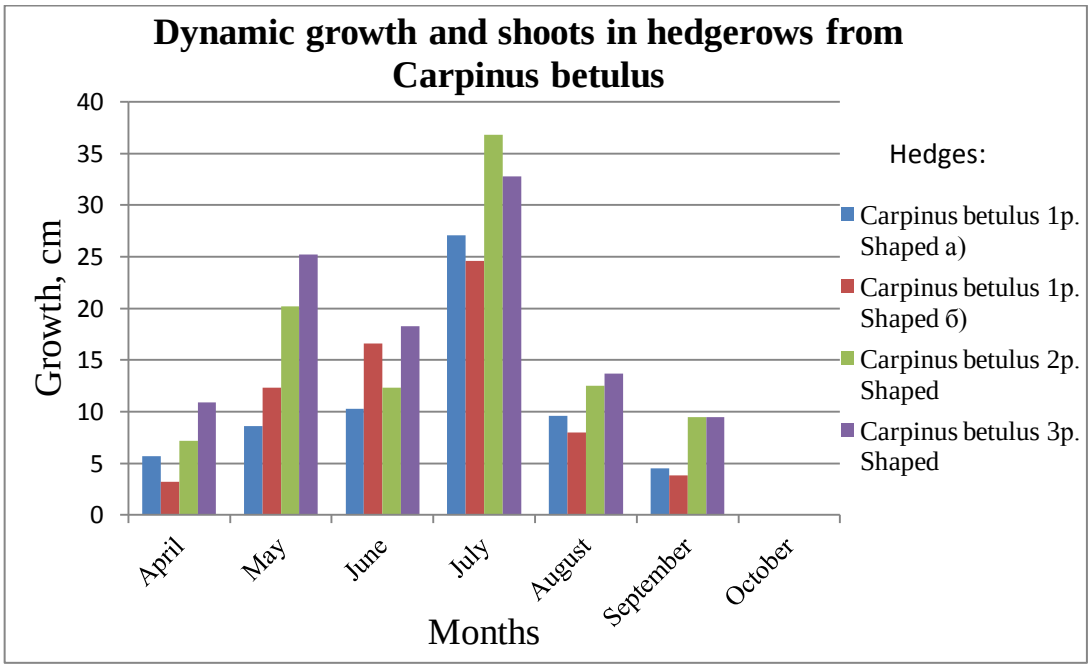

Figure.6

The above investigations indicate that multi row plantings create better hedges. Creating these hedges was provided with all the agronomic rules. And the final forming trimming will make an aesthetically valuable and functional hedge.

Conclusions. Therefore, every hedge, shaped or unshaped, low or high, requires care and trimming - creating, correcting or health trimming.

- Minimal interference to the Care Hedge once in the growing season - is in August, the maximum interference for shaped hedges, depending on the species, every 4 - 6 weeks.

- Formation of hedges in the first years of its life is of great importance. That is, the formation of equal placement of branches that form the skeleton of hedges. It will resist heavy mass air flow, perform sanitary - hygienic function and form healthy live weight.

- Providing of the root and aerial parts hedges care. The care of a root system means a timely and repeated fertilization and soil of organic and mineral fertilize.

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Мирончук К.В. **Вплив формувального обрізування на розвиток живоплотів та динаміку приросту пагонів.**

Описано технологію формувального обрізування для різних типів досліджуваних живоплотів. Ознайомлення зі способами стрижки; дослідження реакції живих огорож на обрізування; вивчення динаміки приросту пагонів на прикладі експериментальних екземплярів. Встановлення різниці, у формуванні та догляді, вільноростучого та формованого живоплоту.

Ключові слова: живопліт, формуюча стрижка, приріст, формування, вільноростучий живопліт, динаміка.

Мирончук К.В. **Влияние формовочной обрезки на развитие згороди и динамика приростов побегов.**

Описана технология формовочного обрезки для различных типов исследуемых живых изгородей. Ознакомление со способами стрижки; исследование реакции живых изгородей на обрезку; изучение динамики прироста побегов на примере экспериментальных экземпляров. Установка разницы, в формировании и уходе, вольноростучый и формируемой живой изгороди.

Ключевые слова: живая изгородь, формирующая стрижка, прирост, формирования, вольноростучая изгородь, динамика.