

PLANTS SPECIES IDENTIFIED IN FRONT GARDENS OF TOWN'S HOUSING ESTATES

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Abstract. Front gardens constitute a traditional form of greenery, mainly characteristic of single family houses. Little gardens established in the areas adjacent to blocks of flats constitute a relatively new phenomenon in urban landscape. The occurrence of plants in front gardens of Lublin's housing estates was examined in the years 2008–2009. Two years ago were made additional comparative work in Łęczna and Biała Podlaska in order to find out to the effect that species composition of front gardens. The studies were undertaken in order to determine the generic differentiation of the plants in spontaneously setting-up gardens. The list included all plants, if they were planted by the hosts of a garden, the plants from planned plantings performed by specialist firms within housing estate greenery management were neglected. In the case of synanthropic plants and spontaneously passing from natural communities, only those were taken into consideration, which were purposefully planted or incorporated into the gardens and were not an effect of negligence. In total 262 species were determined in 325 gardens. Perennial plants were predominant: 152 species, one-year plants 52 and shrubs were represented by 49 plants, two-year plants – 9 species. As to the numerical force of occurrences in gardens the first place was taken by orris iris – 147 occurrences, then tagetes, encountered in 133 gardens and roses – in 116.

Key words: species composition, decorative plants, green areas, Poland

INTRODUCTION

In the block of flats much less attention is devoted herbaceous plants planting. The flowerbeds and borders maintenance is expensive, time and work – consuming. Main attention is focused on trees and shrubs planting, herbs of undergrowth are neglected, which enhance the aesthetics, favourable for human health and precious for animals. Front gardens constitute a specific type of urban green areas. Their uniqueness results from the fact that these are creations made by private persons on public green areas, in

this case – of housing estates. They generally do not have legal regulations, only in housing communities appropriate records are encountered concerning the usage of areas situated under balconies. During the development of towns front gardens are initially formed as the response of the inhabitants of villages moving into towns to live in multi-family buildings. They are also formed, because the view from the window becomes a substitute for summer calmness and piece. The front gardens arise at entrances or under balconies of blocks of flats. The gardens are not set up according to the designs prepared by professionals, but they reflect the inventiveness of their formers. The structure of a front garden in town has an open form and the composition is subjected to the basic function of representation [Gawryszewska 2004 2006].

Decorative plants occurring in front gardens of the foregoing towns has not been a subject of research so far. The floral works concerning front gardens are first of all surveys of species occurring in front gardens and village gardens [Hetman and Mazur 2004, Szymańska and Marszałek 2007]. A substantial part of works concerns changes in the look of the contemporary village gardens [Szczęblewska 2000, Lipińska et al. 2006, Bach and Bałdysiak 2008]. Foreign literature also lacks floral elaborations, general indications are encountered, which concern plantings in natural gardens or rural-style flower-beds [Oudolf and Gerristen 2003]. In broader elaborations concerning urban ecology or urban biotope stock-taking general information can be found on the need to include these forms of greenery in the system of green areas [Fabijanowska 2001]. Studying the flora of front-gardens, however, was not the main purpose of the above-mentioned works.

The aim of the foregoing paper is taking stock of the species occurring in front-gardens, determining the specificity of flora in various towns, as well as the frequency of occurrence, origin of the plants, diversity depended on light conditions. Definition of occurrence the most often species can be helpful in species selection for urban florbeds. What is of special importance, is to determine the occurrence of synanthropic species, commonly treated as „weeds”. The presence of these species in urban front gardens allows to find out which species gained the approval of the town dwellers.

MATERIALS AND METHODS

The studies were conducted on the premises of the town of Lublin, is medium-sized, of the area of 147.55 km² and two smaller towns: Łęczna (area of 19 km²), Biała Podlaska (area of 49.4 km²), which are situated in eastern Poland. Lublin is placed in 51°08' to 51°18' north latitude and 22°27' to 22°41' east longitude. Łęczna is placed in 51°18'N 22°53'E, Biała Podlaska 52°02'N 23°07' E. In Kondracki's physico-geographical classification [2002], towns lie in the region of Central European Lowland in the province of Polish Uplands. In the urban area, the predominant factor forming the elements of natural environment: soil, climate, water relations, is human activity. In the built-up areas the so-called anthropogenic soils predominate, which have changed structure and composition. Comparing the climate of town with that of unbuilt areas, it can be said that it is warmer, dryer and has longer windless periods, as well as lower mean wind velocity. The town's water balance is significantly affected by: the development of sewage system, increase of im-

permeable surfaces and introduction of high buildings, requiring deep dehydration of the ground. Consequently, in spite of relatively high precipitations (566.1 mm), in the areas of largest urban investments soil overdrying is observed [Stochlak 1993].

High, multi-family buildings predominate in the city centres and spread towards the suburbs. At the border of the town there is a ring of settlement buildings and arable fields. In this paper front gardens were considered, which occurred at multi-family buildings in all districts of the towns. Studies on the generic composition of front gardens, as well as of frequency of occurrence of particular plant species were performed in summer (June–August), when there is the greatest number of plants, most of them are in full bloom and the studies can be performed without entering on territory of private gardens. The generic composition of 201 front gardens in Lublin, 51 in Łęczna, 73 in Biała Podlaska was assessed. The examined gardens were intimated geographical direction and light exposure. They were encountered in front of the blocks of flats and under balconies. In the assessment of generic composition the plants planted by the inhabitants were taken into consideration, and not those planted by the housing cooperative employees, or by the employees of appropriate companies dealing with greenery. For instance, if by each stairway entrance in a block of flats a privet hedge was planted, then such species was not taken into account in the studies, just like the shrubs repeating in the surroundings of the block of flats. In the case of synanthropic plants, as well as coming from natural communities, only these were taken into consideration, which constituted elements of the composition and not an effect of weeding. In the case of shrubs all species and varieties of roses, junipers and thujas were totalized. The plants surveyed in gardens were divided into the following categories: shrubs and undershrubs, perennial plants, two-year and one-year plants. The number of species occurring in particular gardens was determined, as well as the compositional system of plants and size of the gardens. The small architectural forms, as well as elements of water, were also taken into consideration. During chamber works the qualitative plant composition were analyzed, as well as their membership in different groups, among others scented plants were distinguished, as well as wintergreens, herbs and protected plants. The plant nomenclature was taken from the key Zander Handwörterbuch der Pflanzennamen [Erhardt et al. 2000].

RESULTS

Structure of Gardens. The size of front gardens ranged from 0.5 to 40 m². The smallest were in the form of a ridge along the lawn leading to the entrance or small lobe „cut out” in the lawn grass. These gardens were the poorest: only 2–3 species of plants were distinguished there. In Lublin and Biała Podlaska the forms of the surface up to 6 m² were predominant, instead in Łęczna up to 20 m². They were encountered both in front of entrances and under balconies. Not many front gardens occupied large surfaces of more than 30 m² (fig. 1), those distinguishing gardens were encountered in front of the entrance and continued along the building, few were private gardens connected with the balcony part.

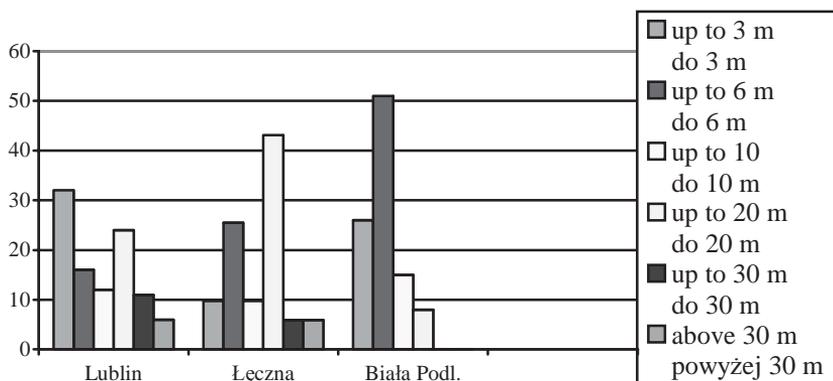


Fig. 1. Differentiated sizes of front gardens occurring in Lublin, Łęczna, Biała Podlaska.
 Rys. 1. Zróżnicowanie wielkości przedogródków występujących w Lublinie, Łęcznej, Białej Podlaskiej

Near blocks of flats with staircase entrances there appeared front gardens of the length equal to the length of the block or the distance between staircase entrances, but the generic composition and arrangement of plants indicated separate property and were so treated. It is worth noticing that the most beautiful front gardens, the most differentiated ones, occurred where the residential quarters' authorities accepted the management of areas near blocks of flats by their inhabitants. In the case of Kalinowszczyzna housing estate (in Lublin) there is even an encouragement from the authorities, involving organizing competitions aiming at choosing the most beautiful mini-gardens. In this part of Lublin the front gardens are distinguished by a large variety of plants, the presence of small garden forms, benches, bowers little lakes, as well as thematic gardens, rock-gardens and by-water gardens. The garden form like these were not found in other places. The smallest quantity of front gardens was encountered in new, closed housing estates, which either lacked room for them, the plantings were planned, or the owners of ground floor flats had large gardens on terraces. A regularity was also observed, according to which most gardens were found at 4–5 storey blocks, of flats with a few staircase entrances. The gardens seldom appeared near skyscrapers or blocks with single entrances. Differentiated front gardens, besides the above-mentioned Kalinowszczyzna, also appeared in other, older housing estates, although there, in certain housing estates, spontaneous development of housing estate greenery is banned. Resistance of building administrators or housing estate authorities towards management of public space is encountered in the city centre, which, however, causes dissatisfaction among some inhabitant. It is interesting that the gardens in those places are very elegant and well cared for. The inhabitants were not very keen on forming front gardens in the housing estates, where the authorities in planned way introduced flower beds or where there were garden plots just behind the blocks of flats (e.g. Piastowskie, Sienkiewicza – LSM housing estates in Lublin,). As a rule front gardens were freely arranged and only 3 gardens in Lublin, i. e. 1.5% were in geometrical form.

Floral abundance. The selection of species for front gardens, as well as the frequency of occurrence of particular taxa, as well as the size of gardens were highly differentiated. Composition of species in the front gardens is not diversified in relation to geographical direction or light exposure. Composition of species 79 front gardens oriented towards North were analyzed. The same species were found in front gardens placed both North and South side of buildings. During the studies it was noticed that in the gardens at the same time there occurred perennial plants and annual plants, supplemented by two-year species, whereas shrubs and undershrubs constituted solitaires, background for other plants, or hedges. Few gardens were made of annual plants, and only one front garden in Lublin was fully composed of shrubs, creepers, dwarf shrubs and grasses. This gardens was distinguished by modern esthetics and balanced composition. Its interesting element was the stone river, which led rain water away from the gutter towards the storm-sewer system.

In one front garden there occurred 19 plants on average. In the richest front garden 36 species (in Lublin, Łęczna) were distinguished, the poorest had 2 species. The most gardens had up to 20 species, not much less constituted gardens of up to 10 species. Less numerous were these very differentiated, with more than 20 species, and poor ones – with up to 5 species (tab. 1).

Table 1. Differentiation of Lublin, Łęczna, Biała Podlaska housing estate front gardens as to the number of plant species occurring in them

Tabela 1. Zróżnicowanie przedogródkach osiedlowych Lublina, Łęcznej, Białej Podlaskiej pod względem liczby występujących gatunków roślin

Housing estate front gardens Przedogródki na osiedlach mieszkańczych	Frequency of plant occurrence Liczba spotykanych gatunków					
	Lublin		Łęczna		Biała Podlaska	
	number liczba	%	number liczba	%	number liczba	%
Up to 5 species Do 5 gatunków	32	15.92	2	3.93	16	21.91
Up to 10 species Do 10 gatunków	67	33.34	16	31.37	24	32.88
Up to 20 species Do 20 gatunków	75	37.31	27	52.94	29	39.73
More than 20 species Powyżej 20 gatunków	27	13.43	6	11.76	4	5.48
Total – Razem	201	100	51	100	73	100

The selection of plants for front garden reflects the inhabitants' liking and passion for gardening, most plants, however, are very durable and resistant to urban conditions. They are also easy to grow. In the gardens located nearby certain species were encountered repetitively, which were not found in the gardens from other parts of the town, e.g. in Lublin monkshood (*Aconitum napellus* L.) – Centre, stramonium (*Datura stramonium* L.) – Felin, ground elder (*Aegopodium podagraria*) in Biała Podlaska. The plants encountered in front gardens can be included in a few groups: as to durability (annual, two-years, shrubs and undershrubs), wintergreens, and as to origin (synanthropic, from

natural communities, garden plants). In Lublin's gardens 248 species were found. Most often encountered group of plants are perennial plants – 58.06%, annual species, as well as shrubs and undershrubs constitute 19.35% and the least numerously represented group is that of bi-annual plants – 3.2% (tab. 2).

Table 2. Frequency plant's application in housing estate front gardens of Lublin, Łęczna and Biała Podlaska

Tabela 2. Częstość stosowania roślin w przedogródkach osiedlowych w Lublinie, Łęcznej i Białej Podlaskiej.

Group of plants Rośliny	Frequency of occurrence – Częstość występowania					
	Lublin		Łęczna		Biała Podlaska	
	number liczba	%	number liczba	%	number liczba	%
Annual Jednoroczne	48	19.36	27	18.0	25	16.56
Bi-annual Dwuletnie	8	3.22	8	5.33	6	3.97
Perennial plants Byliny	144	58.06	100	66.67	98	64.90
Shrubs and undershrubs Krzewy i krzewinki	48	19.36	15	10.0	22	14.57
Total – Razem	248	100	150	100	151	100

The most often encountered species among perennial plants in Lublin were: orbis iris (*Iris germanica* L.), which occurred in 97 gardens, i.e. in 48%, garden crinoid (*Hemerocallis hybrida*), respectively: in 83–41.3%, paniculate flox (*Phlox paniculata* L.) 74–37%, Chinese peony (*Paeonia lactiflora* Pall.) 74–37%, large stonecrop (*Sedum spectabile* Boreau) 67–34%. In Łęczna dominated Chinese peony (*Paeonia lactiflora* Pall.) which occurred 30 times – 20%, 28 times – 19% garden crinoid (*Hemerocallis hybrida*) and the same orbis iris (*Iris germanica* L.). In Biała Podlaska 37 – times, 24% occurred primrose (*Primula* sp.), 24 times – 16% large stonecrop (*Sedum spectabile* Boreau), 21 times – 14% orbis iris (*Iris germanica* L.), 20 times – 13% garden crinoid (*Hemerocallis hybrida*). Annual species, though less numerously represented, are encountered quite frequently. In this group of plants both these sown into the ground and those requiring seedling can be found. The plants that occur most often are tagetes (*Tagetes patula* L. and *T. erecta* L.), encountered in 87 gardens in Lublin, 19 in Łęczna, 27 in Biała Podlaska. In the group of shrubs and undershrubs roses (*Rosa* L., cultivars), which were differentiated as far as species and cultivars were concerned. Among two-year plants mallow (*Alcea rosea* L.) predominated (fig. 2).

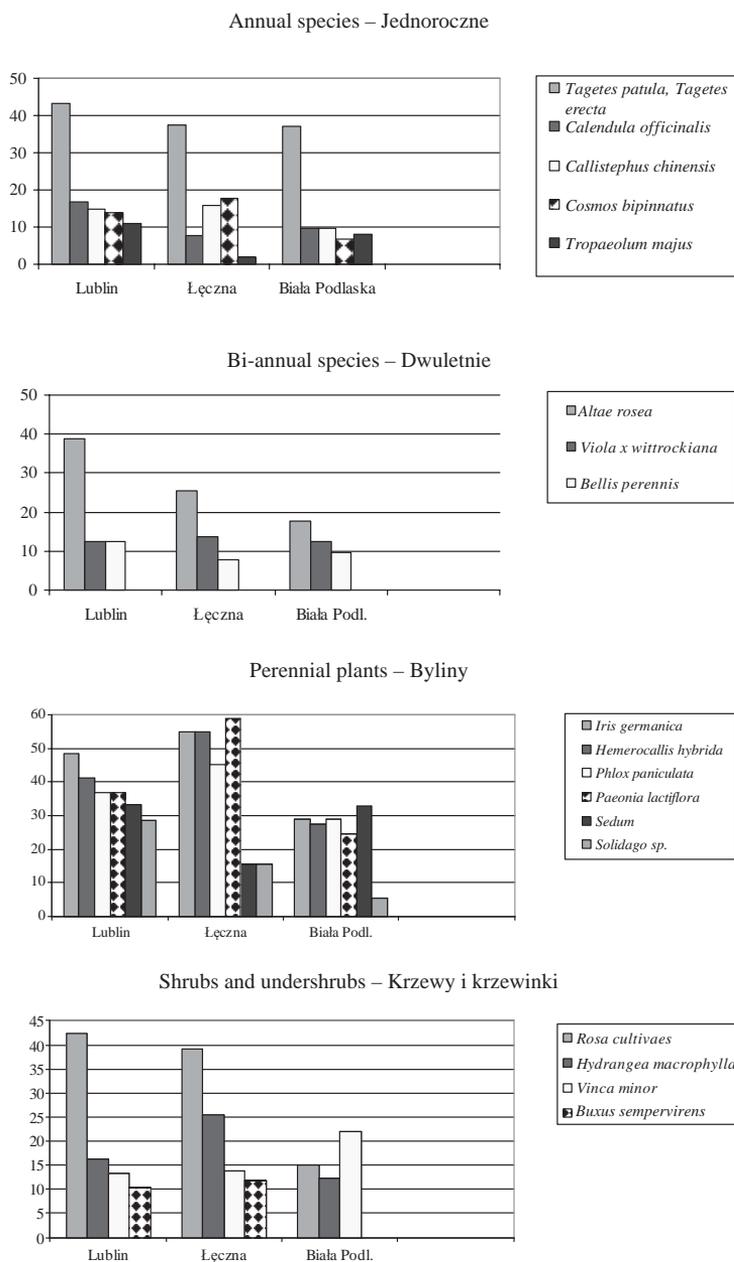


Fig. 2. The percentage of plants most frequently applied in housing estate front gardens of Lublin, Łęczna, Biała Podlaska

Rys. 2. Udział najczęściej stosowanych roślin w przedogródkach osiedlowych Lublina, Łęcznej, Białej Podlaskiej (%)

The plants encountered in front gardens belong to 86 families. The most numerously represented are the complex Asteraceae – 40 species, Lamiaceae – 28, and Rosaceae – 16 species, the remaining families are represented by less than 10 plants. The analysis of generic composition of front gardens allowed for distinguishing a few groups of plants. Wintergreens are represented by shrubs: common box (*Buxus sempervirens* L.), mahonia (*Mahonia aquifolium* (Pursh) Nutt), juniper (*Juniperus* sp.), Norway and white spruces (*Picea alba* Link, *P. abies* (L.) H.Karst.), Bank's pine (*Pinus banksiana* Lamb.), rhododendrons (*Rhododendron* sp.), common yew (*Taxus baccata* L.), thujas (*Thuja occidentalis* L.), creepers: common ivy (*Hedera helix* L.), undreshrubs: periwink (*Vinca minor* L.), perennial plants: thick-leaved bergennia (*Bergenia cordifolia* (Haw.) Sternb.).

Table 3. Differentiation of plants occurring in housing estate front gardens in Lublin, Łęczna and Biała Podlaska as to their values

Tabela 3. Zróżnicowanie roślin występujących w przedogródkach osiedlowych Lublina, Łęcznej, Białej Podlaskiej pod względem posiadanych walorów

Group of plants Rośliny	Frequency of occurrence in front gardens Częstotliwość występowania w przedogródkach					
	Lublin		Łęczna		Biała Podlaska	
	number liczba	%	number liczba	%	number liczba	%
Wintergreens Zimozielone	11	4.43	7	2.67	12	7.95
Scented Pachnące	10	4.03	9	6.00	10	6.62
Herbs Zioła	13	5.24	19	12.67	17	11.26
Useful for insects Pożyteczne dla owadów	24	9.67	33	22.00	31	20.53
Protected Chronione	13	6.47	9	6.00	9	5.96

A significant group is constituted by scented plants: sweet violet (*Viola odorata* L.), paniculate flox (*Phlox paniculata* L.), lily of the valley (*Convallaria majalis* L.), broad-leaved lavender (*Lavandula officinalis* Chaix), sweet pea (*Lathyrus odoratus* L.), stock-flower (*Matthiola incana* (L.) R.Br.), night-scented stock (*Matthiola longipetala* (Vent.) DC.), common lilac (*Syringa vulgaris* L.), wild jasmine (*Philadelphus coronarius* L.), magnolias (*Magnolia* sp.). A specific group of plants is formed by species that attract useful insects and butterflies, as well as melliferous plants: asters (*Aster* sp.) purple buddleia (*Buddleja davidii* Franch.), goldenrod (*Solidago* sp.), common oregano (*Origanum vulgare* L.), sedums (*Sedum* sp.), columbines (*Aquilegia* sp.), purple foxglove (*Digitalis purpurea* L.), (*Echinacea purpurea* (L.) Moench), tutsan (St. John's wort) (*Hypericum perforatum* L.), marigold (*Calendula officinalis* L.), common sunflower (*Helianthus annuus* L.), tagetes (*Tagetes* sp.), tobacco (*Nicotiana* sp.), ageratum (*Ageratum houstonianum* Mill.), oxeye daisy (*Chrysanthemum leucanthemum* L.),

heart-leaved bergenia (*Bergenia cordifolia* (Haw.) Sternb.), *Echinops ritro* L., paniculate flox (*Phlox paniculata* L.), snapdragon (*Antirrhinum majus* L.), zinnia (*Zinnia elegans* Jacq.), *Cosmos bipinnatus* Cav., alyssum (*Lobularia maritima* (L.)Desv.), lungwort (*Pulmonaria saccharata* Mill.), common aubrietia (*Aubrieta deltoidea* (L.)DC.) [Fedor 2009, Kreuter 2009, Lipiński 2010]. Herbs are encountered in small numbers, as single specimens. None of the gardens was herbal in its nature.

The following herbal plants can be listed: callybotryon (*Aconitum napellus* L.), borage (*Borago officinalis* L.), marigold (*Calendula officinalis* L.), blue cornflower (*Centaurea cyanus* L.), purple foxglove (*Digitalis purpurea* L.), peppermint (*Mentha piperita* L.), lemon balm (*Melissa officinalis* L.), lovage (*Levisticum officinale* W.D.J.Koch), common oregano (*Origanum vulgare* L.), *Saponaria officinalis* L., *Ricinus communis* L., wild thyme (*Thymus serpyllum* L.), coltsfoot (*Tussilago farfara* L.) [Anioł-Kwiatkowska 1995] (tab. 3). Single specimens of usable plants were encountered, e.g. dill (*Anethum graveolens* L.), or field pumpkin (*Cucurbita pepo* L.).

Table 4. Origin of plants applied for plantings in housing estate front gardens in Lublin, Łęczna and Biała Podlaska

Tabela 4. Pochodzenie roślin stosowanych do nasadzeń w przedogródkach osiedlowych Lublina, Łęcznej, Białej Podlaskiej

Group of plants Rośliny	Frequency of occurrence in front gardens Częstotliwość występowania w przedogródkach					
	Lublin		Łęczna		Biała Podlaska	
	number liczba	%	number liczba	%	number liczba	%
Decorative Dekoracyjne	189	76.21	107	71.33	114	75.50
Coming from natural communities Pochodzące ze zbiorowisk naturalnych	43	17.34	29	19.34	26	17.22
Synanthropic Synantropijne	16	6.45	14	9.33	11	7.28

Plants encountered in front gardens can be differentiated as to their origin. The decorative species are dominated and the opposite synanthropic plants, which are the least (tab. 4). Among plants coming from natural communities almost extinct and protected plants are interesting. Among taxa reported in these gardens were found, in.a.: ostrich fern (*Matteucia striathiopteris* (L.)Tod.), Greek valerian (*Polemonium caeruleum* L.), goat's-beard (*Aruncus sylvestris* Kostel.).

Share of synanthropic plants. Synanthropic plants are not only encountered in plant communities, they are also available commercially. The analysis of seed and plant nursery material available in Poland [distributed by PNOS S.A, Tordeed] in the season 2008/2009 shows the possibility of the following plants: stramonium (*Datura stramonium* L.), blue cornflower (*Centaurea cyanus* L.), everlasting pea (*Lathyrus latifolius* L.), goldenrod (*Solidago* L., cultivars), polygonum (*Reynoutria japonica* Houtt.),

Table 5. Synanthropic plants encountered in Lublin's (Łęczna, Biała Podlaska) housing estate front gardens

Tabela 5. Rośliny synantropijne spotykane w przedogródkach osiedlowych Lublina, Łęcznej, Białej Podlaskiej

Species Gatunki	Frequency of occurrence in front gardens Częstotliwość występowania w przedogródkach					
	Lublin		Łęczna		Biała Podlaska	
	number liczba	%	number liczba	%	number liczba	%
<i>Solidago</i> L., cultivars	57	28.35	8	15.68	4	5.47
<i>Rudbeckia laciniata</i> L.	37	18.40	9	17.64	11	15.06
<i>Helianthus tuberosus</i>	28	13.93	3	5.88	2	2.73
<i>Saponaria officinalis</i> L.	5	2.48	2	3.92	3	4.11
<i>Reynoutria japonica</i> Houtt.	5	2.48	0	0	2	2.73
<i>Dipsacus laciniatus</i> L.	5	2.48	1	1.96	1	1.36
<i>Tanacetum vulgare</i> L.	4	1.99	1	1.96	0	0
<i>Lathyrus latifolius</i> L.	4	1.99	4	7.84	0	0
<i>Datura stramonium</i> L.	3	1.49	1	1.96	3	4.11
<i>Consolida regalis</i> Gray	3	1.49	2	3.92	0	0
<i>Impatiens glandulifera</i> Royle	3	1.49	0	0	0	0
<i>Glechoma hederacea</i> L.	2	0.99	1	1.96	2	2.73
<i>Tussilago farfara</i> L.	1	0.49	0	0	0	0
<i>Echinocystis lobata</i> (Michx.) Torr. et A. Gray	1	0.49	1	1.96	0	0
<i>Lamium album</i> L.	1	0.49	0	0	0	0

rudbeckia (*Rudbeckia laciniata* L.), teasel (*Dipsacus laciniatus* L.), *Leonurus cardiaca* L., melilot (*Melilotus albus* Medik.), *Echium rubrum* Jacq. non Forssk., *Sagina subulata* and cultivars of dead nettle, cult *Lamium maculatum* L., *Aegopodium podagraria* L. 'Variegatum', *Glechoma hederacea* L. 'Variegata'. In front gardens, besides commercially available species, synanthropic plants are encountered, which come from spontaneous communities, but they gain approval and constitute an element of composition. Despite the fact that synanthropic plants occur marginally, some of them can be found more often. These are: goldenrod, rudbeckia and sunflower (tab. 5).

DISCUSSION

Front gardens appearing in housing estate development, in front of multi-family buildings, look almost the same, they are similar species compositions too. There are major three species of perennial plants: orris iris (*Iris germanica* L.), garden crinoid (*Hemerocallis hybrida*), Chinese peony (*Paeonia lactiflora* Pall.). Among shrubs the most frequently encountered species is rose (*Rosa* sp.). In the group of annual and bi-

annual plants tagetes (*Tagetes* sp.) and mallow (*Alcea rosea* L.). Besides the traditional and contemporarily applied species, a specific group of synanthropic plants was emphasized. These species occur in front garden, are accepted and included into flower beds methodically, although their origin is sometimes spontaneous. It is interesting that some of these plants: tansy (*Tanacetum vulgare* L.), rudbeckia (*Rudbeckia laciniata* L.), goldenrods (*Solidago* sp.), sunflower (*Helianthus tuberosus*), touch-me-not (*Impatiens glandulifera* Royle), were planted in the poorest village front gardens [Plessner 1987] can now be found in gardens again. This tendency, present in gardens, is extremely important, as the possibility of seeing these plants in these places can affect their perception in a different context. The trend involving including synanthropic plants in urban green areas, is one of the main ones in Western European landscape architecture [Oudolf and Gerritsen 2003, Dunnett and Hitchmough 2008]. In Poland synanthropic plants are propagated by Janecki and Sawczuk [1990] and Stawicka [2010]. However, there are certain dangers. Front gardens, just like gardens, garden plots and cemeteries can constitute potential centers of spreading strange and invasive species and thus they can be a threat to domestic flora species [Galera et al. 1993, Galera 2003].

Front gardens in multi-family development are usually spontaneous. Housing estate authorities occasionally encourage setting them up. However, there are bans on such interference in the public space. In the United States, for various reasons, in. a. social, safety, improvement of urban greenery condition, the inhabitants are even encouraged to undertake such actions. Appropriate companies dealing with greenery offer their help. Financial means are transferred and, as research shows, such gardens are very valuable socially [Lewis 1973, Kaplan 1984]. In Western Europe gardens which are spontaneously organized by inhabitants gain approval of the authorities [Bounty 2010]. In Poland such actions are heralded by the action of yard greening in Szczecin [Krzyżanowski 2008] and therapies conducted in gardens [Nowak 2009].

Like in traditional gardens near village houses, in towns we can also find species valued by melliferous and nectariferous insects, which is extremely important. In towns, where wastelands are destroyed and, when periodically, after mowing the lawns which are weeded (i.e. rich in meadow and synanthropic species), town greenery lacks such plants [Wrzesień and Denisow 2007]. Decorative plants improve human physical health, e.g. through phyto-remediation [Nowak 2005]. Front gardens contribute to the improvement of urban ecological structure and, like other forms of greenery, should be propagated and protected [Fabijanowska 2001, Matuszkiewicz 1993, Zimny 2005]. The financial aspect deserves attention, as it limits setting-up flower beds and flower banks in housing estates. Front gardens, managed terraces and balconies cost nothing, because the financial means for establishing them come from their owners.

CONCLUSIONS

1. In Lublin, during examining front gardens occurring in multi-family development the occurrence of 248 species was found. Perennial plants predominated and constituted 58.06%, annual species, as well as shrubs and dwarf shrubs constituted 19.35% and the least represented group was that of bi-annual plants – 3.2%.

2. Species composition of front garden in examined three towns is very similar. There are three most often occurred plants: orris iris (*Iris germanica* L.), garden crinoid (*Hemerocallis hybrida*), Chinese peony (*Paeonia lactiflora* Pall). It is not ascertained relation between occurring species composition and light exposure in front gardens.

3. Synanthropic plants constitute the margin of those occurring in gardens, with the result: 6.45 % in Lublin, 9.33 % in Łęczna and 7.28 % in Biała Podlaska. Among them three species are highly acceptable: goldenrod, rudbeckia and sunflower.

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ROŚLINY STOSOWANE W PRZEDOGRÓDKACH NA OSIEDLACH MIESZKANIOWYCH LUBLINA

Streszczenie. Przedogródki są tradycyjną formą zieleni charakterystyczną przede wszystkim dla domów jednorodzinnych. Ogródki zakładane na terenach przylegających do bloków mieszkalnych stanowią stosunkowo nowe zjawisko w krajobrazie miast. Aby określić zróżnicowanie gatunkowe roślin nasadzanych w spontanicznie zakładanych ogrodach oraz określić gatunki, które są najczęściej spotykane, w latach 2008–2009 przeprowadzono badania przedogródków na osiedlach mieszkaniowych Lublina. Dwa lata później dodatkowo badania przeprowadzono w Łęcznej i Białej Podlaskiej. W badaniach uwzględniono wszystkie rośliny nasadzone przez właścicieli ogrodów. Pominięto rośliny nasadzeń wykonanych przez specjalistyczne firmy w ramach zagospodarowywania zieleni osiedlowej. W przypadku roślin synantropijnych i przechodzących spontanicznie ze zbiorowisk naturalnych uwzględniano tylko te, które celowo zostały posadzone lub wkomponowane w założenia, a nie były efektem zaniedbań. Łącznie oznaczono 262 gatunków w 325 założeniach. Dominowały byliny reprezentowane przez 152 gatunki, odnaleziono 52 gatunki roślin jednorocznych, 48 gatunków krzewów i tylko 8 gatunków roślin dwuletich. Pod względem liczebności wystąpień w ogrodach pierwsze miejsce zajęły kosaciec niemiecki – 147 wystąpień, kolejne aksamitki spotykane w 133 ogrodach i róże w 116.

Słowa kluczowe: skład gatunkowy, rośliny ozdobne, tereny zieleni, Polska