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***Ethnobotany of Czech allotment gardens: case study
of Kladno region***

M.Sc. Thesis

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ABSTRACT

Ethnobotanical survey was conducted in 37 randomly selected gardens in 5 areas of allotment gardens in Kladno region. The area is situated in North-West part of central Bohemia. Informants were interviewed *in situ*, data were collected to semi-structured questionnaires by direct observation of area. 29 botanical families were identified with 104 species in total to be used for various purposes. The most represented botanical family were *Rosaceae*, represented by 15.7% followed by *Lamiaceae*, represented also by 15.7%. Other mostly represented families were *Apiaceae* (9.5%) and *Asteraceae* (8.4%). In most cases species were used as vegetable (43%), further as fruit (38,5%) and rest as medicinal (13%) or aromatic plants (3%). The most abundant species on homegardens was *Fragaria × ananassa* (Weston) Duchesne ex Rozier. It was considered that, in comparison with historical information about studied area, biodiversity in the area of allotments is decreasing rapidly.

Keywords: Ethnobotany; homegardens, Kladno region, urban agriculture, traditional knowledge

ABSTRAKT

Tato etnobotanická studie byla provedena v 5 zahrádkářských koloniích kladenského regionu. Bylo náhodně vybráno celkem 37 zahrad. Zkoumaná oblast leží v severozápadní části středních Čech. Získávání dat proběhlo formou volného interview v místě výzkumu, data byla ihned zaznamenána do připravených polostrukturovaných dotazníků. Celkem bylo identifikováno 104 druhů rostlin patřících do 29 botanických čeledí. Nejzastoupenější čeleď byla *Rosaceae* (15,7 %) následovaná čeledí *Lamiaceae* (15,7 %). Další běžně reprezentované botanické čeledě byly *Apiaceae* (9,5%) a *Asteraceae* (8,4%). Naprostá většina pěstovaných druhů rostlin byly zeleniny (43 %), následované ovocnými druhy (38,5 %), léčivkami (13 %) a aromatickými rostlinami (3 %). Nejzastoupenějším druhem vůbec byl *Fragaria × ananassa* (Weston) Duchesne ex Rozier. Ve srovnání s dostupnými historickými informacemi o zkoumané oblasti se ukázalo, že biodiverzita pěstovaných druhů v zahrádkářské oblasti rapidně klesá.

Klíčová slova: Etnobotanika, městská zeleň, region Kladno, tradiční znalosti, zahradnictví

CERTIFICATION

I, Jiřina Klubičková declare that this thesis called “Ethnobotany of Czech allotment gardens: case study of Kladno region” submitted in partial fulfilment of the requirements for the degree of M.Sc., in the Institute of Tropics and Subtropics of the Czech University of Life Sciences Prague, is wholly my own work. Information derived from the published or unpublished work has been acknowledged in the text and a list of references is given.

Prague, April 17, 2012

Jiřina Klubičková

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1. INTRODUCTION

Ethnobotany is considered to be one of the newest scientific disciplines, which has slowly been proving its scientific importance (Phillips, 1996).

It embraces all plants useful to people. Particularly important is the diversity of crop combinations, and the way in which those are used (Brookfield and Stocking, 1999).

Plant use and plant-human interrelationships are shaped by history, by physical and social environments. The roles the plants usually reflect their biological and physical properties, the needs of humans, the natural and anthropogenic environments of which the plants are part, and the responses of plants to human disturbance. Ethnobotany is the study of these plant-human interrelationships embedded in dynamic ecosystems of natural and social components (Alcorn, 1997).

Intensive ethnobotanical research has been performed mainly in tropical countries (Vogl-Lukasser and Vogl, 2002). Scientific research on farmers' homegardens has not been realized at the European level, with only few exceptions (Agelet et al., 2000, Vogl-Lukasser and Vogl, 2002, Pieroni, 2007b). Clearly there is lack of ethnobotanical studies in Central Europe apparently from original research and review papers in this field.

Some examples of ethnobotanical studies done in other European countries are given here (Tardío *et al.* 2006; Pieroni *et al.*, 2006; Pardo de Santayana *et al.*, 2007; Pieroni and Torry, 2007; Pieroni and Giusti, 2009; Altundag and Ozturk 2011; Mustafa, 2012a)

This study will contribute to general awareness of local ethnobotanical knowledge of home-gardens in the Kladno region.

2. THEORETICAL BACKGROUND

2.1. *Ethnobotany*

2.1.1. **Ethnobotany**

Ethnobotany is relatively new discipline but its social and scientific roles are becoming more consistently defined and its importance as a tool for complimenting management and conservation strategies at local and regional levels is now well recognized by the scientific community throughout the world (Vlková, 2009, Moravec, 2011). Since its conception in early 19th century (Harshberger, 1896, Balick, 1996), the term of Ethnobotany has proved a difficult term to define. At the start it was defined simply as “the use of plants by aboriginal people“, nowadays, during the century, the attention has focused not only on use of plants, but also on their perceivation and management and also on the reciprocal relationship between human and plants on which they depend (Cotton, 1996). As a result, ethnobotany has been redefined and even now no definitive agreement in its interpretation has been reached (Yen, 1993). The simplest and widely employed definition describes it as the study of the knowledge and use of plants in primitive societies in the past and present, but much more inclusive definition might be: the study of the uses, conservation techniques, classification, technological manipulation, agricultural systems, magico-religious concepts, and general economic and sociological importance of plants in primitive or pre-literate societies (Schultes, 1994).

2.1.2. **Ethnobotanical studies in Europe**

The history of the Ethnobotany of the Europe dates back to the Ancient Greek times. One of the first „Ethnobotanists“ was the Greek surgeon Pedanius Dioscorides, who published his work *De Materia Medica*, focused on ethnobotany in the Mediterranean. Later, from the Renaissance to the nineteenth century, it were the scholars and explorers, who continued collecting and describing plants and their local uses (Pardo de Santayana, 2010). One of the studies of this time was made for instance by the Swedish botanist Linneaus, who also published the books which deals with issues such as *Flora Laponica*, in which are included information not only about plants, but also the local use of them (Linneaus, 1773). Since the nineteenth century there was made the folklore studies mostly in Northern and Central Europe. This research were occasionally focused on the traditional uses of

plants (e.g. Marzell, 1943, Borza, 1968, Sella, 1992, Allen et al., 2004, Pieroni, 2006, 2007a) or on use in homegardens (Vogl-Lukasser and Vogl, 2002, Agelet et al., 2000).

2.2. Allotment gardens

2.2.1. Definition of allotment gardens

Generally, an allotment gardens are characterised as a concentration of several small land parcels of about 200 to 400 m² in one place of and which are assigned or rent to individuals or families, previously organised in an association. In allotments the parcels are cultivated individually by each owner, while in common gardens the area is tended collectively by a group of people (Macnair, 2002). This way of gardening started in the Germany, where the first Allotment Gardeners' Association was founded in 1864. It gradually spreaded especially among people who have migrated from rural areas to the cities during the industrialisation. For improving their situation, which was very often in extremely poor conditions, there were established so-called "gardens for the poor" (later "allotment gardens"). There was allowed to grow food for the poor families and to keep small domestic animals (Kasch, 2001). During the World War I. and II. many cities were economically isolated from products from countryside so the food production of allotment gardens was essential for survival. Nowadays allotments in Germany, as same as in other countries, are considered to be a hobby for many people. Very often are these conceived as the part of the urban greenery (Crouch, 2000, Drescher, 2001).

2.2.2. History of allotment gardens in the Czech Republic

Gardening as an organized activity has in the Czech Republic history of few hundred years. First allotments were owned by monasteries and poor landless people worked there (Klouparová, 2009). Thus, beginning of gardening in Europe officially broke out in the early 19th century. First gardeners association began in the 1806 on the area of the Czech Republic. While in the 1914 in the Czech Republic existed only 29 areas of allotment gardens, in 1920 there were 141. The development stopped during World War II. (Vágner, 2004).

Attempts to reestablish gardening were successful in the 50's, when the Czech Association of Fruit and Gardening was founded. In the 1979 it was renamed as Czech Association of

Allotment and Leisure Gardeners that was then incorporated by Ministry of Agriculture of the Czech Republic.

In the 1989 the number of allotment gardens was seven times greater than in the end of fifties (from 667 to 4477), similarly as number of members (48.000-400.000) (CUALG, 2001). After the so-called Velvet Revolution (1989) the Czech Republic opened to the world and in the 1996 became a member of European League of Leisure Gardeners (Vágner, 2004). When borders of the Czech Republic were opened, the importance of gardening decreased rapidly.

It is not only due to the wider possibilities of self-realization after the liberation from the totality, but also the possibilities of lands acquisition for gardening other than by ČZS. Purchasing of gardens in allotments has been enabled recently, and many of gardeners canceled their membership in the Association (Bažant, 2007).

Nowadays, ČZS is democratical, non-political association with great organisation structure. It is composed of individual basic organisations that are distributed within each region. Overall activity is regulated by the Articles of Association. The Association informs its members regularly about its activities in quarterly published journal „Věstník ČSZ“(CUALG, 2012).

„For the first time the world of gardeners changed - the development of gardening as a social need and desire for a piece of land. The second time was changed - in organized activities, growing plants of all kinds for own use of farmers, but also for other candidate. Utilitarian gardens were generated. Now the third change - the gradual rebuilding to the ornamental garden with the main function of rest“(ČZS Brno, 2002).

ČSZ also contains 17 specialized sections which coordinate members accordingly to their interest. Most of these specialized organizations, of course, have competence in the entire country. Many of these organizations coordinate exhibitions, seminars and lectures for non-associated gardeners. For example the organisation called „Citrusáři“ unifies growers of tropical and subtropical fruit species, organisation „Dagla“ coordinates people with interest in growing and breeding of dahlias and gladiolus. Organisation called „Hortiklub“ associates people interested in arranging of flowers, growing of bonsai or garden architecture. This association also coordinates exhibitions and tours (CUALG, 2012).

2.2.3. Characteristics of allotment gardens study area

Kladno- Rozdělov (Zpropadenka)

This area of allotment gardens covers 2.43 ha of land in the western part of Kladno. The area is divided into 52 gardens, each of them having 400 m². This area was planned in the 1966 by the Committee of the basic organization of gardeners no. 7, Kladno Rozdělov. By that time the space was only unused waterlogged meadows, and the gardeners intended to use this place as a productive area. They volunteered to build a fence around the area, rebuild general road for vehicles bringing construction material, and the area intended for the entire management was plowed. All plots were intensively cultivated, fruit trees, currant, gooseberry were planted according to advisory of older gardeners. In the 1972 was solemnly opened the house for social meetings of farmers of the „Zpropadenka“ allotments. The water supply was finished in 1985 for all 52 gardens. In the area has never existed any fences between each gardens, there is only a boundary fence (Marinčák, 2011).

Kladno-Kročehlavy (Bažantnice)

The area of allotment gardens covers the land of 24,000m², but many gardeners also use adjacent fields rented from Agricultural Land Resources, Czech Republic. The field continues to area of allotment gardens. The chairman of this farmers is currently the chairman of all gardeners of Kladno region and he insists on the preservation of gardens in the way of their begin. So in this area was recognized the biggest diversity of all. There are two big roads for vehicles, that supplies the farmers. Each garden of 200 m² is separated by fence. (Jandík, 2011)

Kladno-Švermov

This area is the northern of all. It covers the land of 50,000m² and each farmer has approximately 400m² for own disposition. The gardens of this area are all in personal property and it is shown on the type and function of garden. There is no authority of the Association, so many gardens has only small diversity of plants. For example there was found the garden with only 7 plant species in the ownership of 23 years. The owner of this garden use that mainly as rest place, where he spend free weekend or vacances. But in this location was also found the garden with the second most plant species of all research. This was probably due to the great friendship of the owner of this garden and the chairman of gardeners of Kladno region (Jágr, 2011).

Stochov

The area of 40,000 m² is purchased by gardeners from the owner who received this in restitution after the 1989. The owner don't want the gardeners on his land, so he still

increases the rent. The farmers but own their garden houses for several years (decades), so they are not going to give them. The parcels of each garden recorded in the research are from 200m² to 720m², the rent before year 1989 was 2CZK/m²/year, nowadays it is 200CZK/m²/year CZK. The area contains one main road for vehicles inside and one road behind southern fence. The gardens are divided by fences and every of them has the gate to the main road in area, the southern tier of gardens has also gates to the road behind the hedge of allotments area (Dytrych, 2011).

Hřebeč

Each garden of this area is separated by low hedge. Totally the gardens covers 12,000 m² between the Kladno and Hřebeč. There is 60 gardens of 54 owners (four persons own two parcels, chairman owns three plots). The land is in the ownership of ČZS, of which the gardeners purchase (Kuncl, 2011).

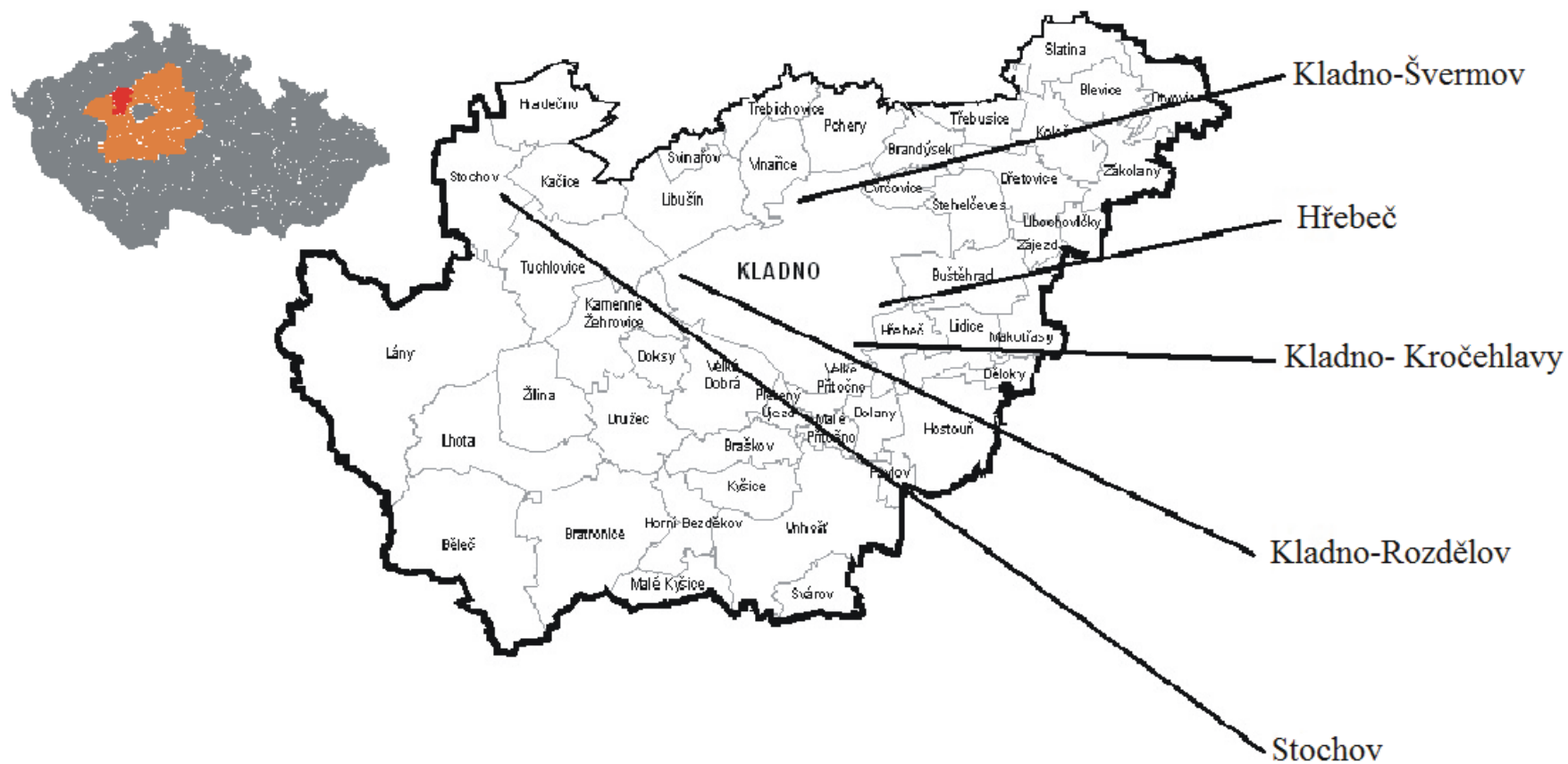


Figure 2 Location of study area (Holeček, 2003)

3. OBJECTIVES

Investigation of home gardens receives increased attention during the past decades. Several studies at the European level have shown interesting results and new insights into composition, management, and importance of these agroecosystems. The aim of this research is to document ethnobotanical knowledge on use and management of species cultivated by owners of allotment gardens in the Kladno region, and to provide complete floristic inventory of plants grown by members of communities in allotment gardens. The study uses standard methods for ethnobotanical research. The thesis will provide complete ethnobotanical inventory of grown plants and form of management, preparation and conservation. Plant species diversity was evaluated as well-as background information, description of studied area is included.

Results of the thesis will contribute to understanding of the importance of urban allotments for conservation of overall plant diversity, and related local use of plant resources. Selected methods applied in this study could be used by local authorities for evaluation of environmental services of allotment gardens.

4. METHODOLOGY

4.1. *Data collection*

Data were collected in 37 randomly selected allotment gardens of 5 areas located either directly in Kladno (Kladno-Kročehlavy, Kladno-Rozdělov, Kladno-Švermov) or at the nearest allotments (Hřebeč, Stochov). These areas were selected on the basis of consultation with chairmen of ČSZ, Kladno region. The fieldwork was carried out during summer months 2011 (June-August). The information was collected from 37 respondents (16 women, 21 men), aged between 41 and 87. The interview was conducted in Czech language and subsequently, during the processing of data, translated to English. Also, information about farmers (age, education), garden (period of ownership, main function of garden) and information about cultivated plants were investigated. Analyses of following data was performed: family and species richness, life form, plant part used and utilization. Ethnobotanical data were collected using semi-structured questionnaires and direct participant observations employed on “guided-tour” technique, consisting of walking through the garden with one or more informant in order to observe the plants cited and for collecting samples for subsequent botanical identification (Albuquerque, Lucena 2004). Subsequently, all species mentioned were documented and taxonomically identified by morphological-comparative method (Alexiades and Sheldon, 1996). Plant uses were categorized according to Economic Botany Data Collection Standard (Cook, 1995). Life forms were categorized using USDA database. Ornamental plants, which were transitory and hard to count, were included in the study just in case that they had an additional uses. Ethnobotanical data were processed by using qualitative and quantitative techniques. The data collected during the field work were reported using Microsoft Excel 2007 (Microsoft Corporation, USA). It was impossible to conduct statistical analysis aimed at capturing similarities between our data and the data occurring in the ethnobotanical literature (i.e.: correspondence analysis, Jaccard index), due to insufficient number of studies done on central-european homegardens.

Descriptive comparison was conducted with ethnobotanical data available in the scientific literature. Study area

4.2. Study area

4.2.1. Location and geographical description

Czech Republic is located in the Central Europe and shares land borders with Germany on the west, Poland on the north-east, Slovakia on the south-west and Austria on the south. The country covers 78.867 sq km (Pěnička, 1954) and is divided into 2 basic zones- Bohemia (52.062 sq km) and Moravia and Silesia (26.803 sq km). The terrain is typically hilly with wide rolling plains. The eastern part of the Czech Republic has more of low mountains and plateaus than Moravia, which tends to be flatter (ECRH, 2012). Kladno region is situated in the north-west part of Central Bohemia Region between the 50°32' and 50°347'N lat. and 13°863' and 14°306'E long. The area is surrounded by other different regions. On the east it is flat Mělník Region and suburban area of the Region of West-Prague, on the south it is stony Beroun Region, on the west is located the woody Rakovník Region and on the north is Litoměřice Region, that is modeled by agricultural landscape around the Labe river (Pěnička, 1954, Krajník and Pospíšil, 1985). Kladno Region covers an area of 71,962 ha.

4.2.2. Climatic conditions

Czech Republic has temperate climatic conditions influenced by the blending of oceanic and continental influences with relatively cool summers and humid, cold and cloudy winters (Pěnička, 1954; Fig. 1). In a long-term average the annual temperature in the the Czech Republic is reaching 7,4°C and average annual precipitations are 693mm (Jůzlová, 2005).

The climate in the Kladno region is warmer and moderately dry with mostly mild winters (Krajník and Pospíšil, 1985).

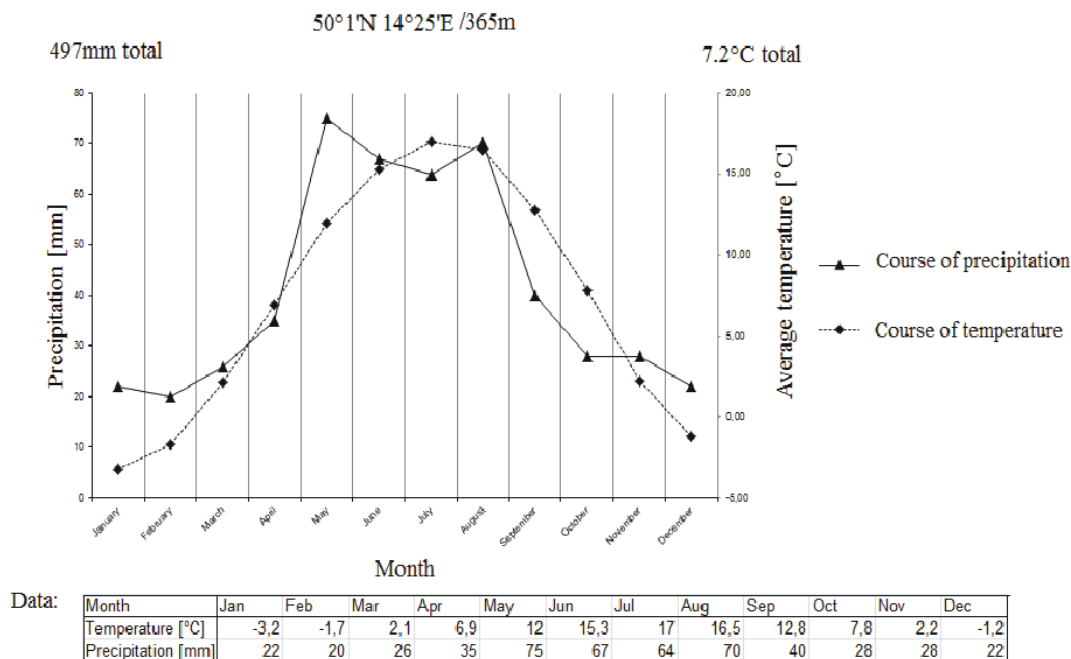


Figure 1 Climate diagram of central Bohemia, meteorological station of Prague-Ruzyně

4.2.3. Hydrology and soil

There is no adequately large river in the Kladno region. Main water sources in the area are small streams, for example the Loděnice stream with few smaller rivulets that flows into Berounka river on the south of region, or Zlonice stream, Bakov stream and Red stream, which flow into Vltava river on the north-east. The largest dam in the region is the Zápľavy Dam which was constructed after World War II. by flooding of former mining areas (Krajník and Pospíšil, 1985). Kladno as the city has big problems with water quality which contain nitrates and chlorine. Its microbial contamination exceeds the standards for drinking water. Therefore, drinking water is provided from the Kladno district water supply system of water from water reservoir - Klíčava (Belušová et al., 2005). By Jandík (2011) wells are used at the the allotment gardens and drinking water for people needs to be brought separately. Only two of the researched allotments are provided with water-supply system but the wells are still used by many of the gardeners.

Brown earth is the most common soil type in the Czech Republic. It occurs both in uplands and in the mountains. Black earth (chernozems) are widespread in driest and warmest areas of the country. They are also more suitable for agricultural cultivation. Other important

soils are phaeozems which are to be found especially at low altitudes (Elbe, south Moravia), and occur commonly in floodplains at their outer edges (Němeček et al., 1983). The main soil type in the Kladno region is of 40% chernozem (especially in the northern parts of region), and of 15% it is the brown earth (Krajník and Pospíšil, 1985). The district covers 71,96 ha in total, of which agricultural land covers 48.05ha (arable land 90%, orchards and gardens 6%, permanent grasslands 3.2%, hop-gardens and vineyards 0.8%) (CSO, 2012). The percentage of arable land belongs the region to fourth place in the Czech Republic. The Kladno region is included into areas with highest production capacity of agricultural land in the Czech Republic (Belušová et al, 2005)

4.2.4. Population and socioeconomic situation

Total population in the Czech Republic 10.548.527 people (CSO, 2012) according to last census in 2011. GDP estimation for 2010 was 192.032.097.602 USD (Worldbank, 2010). Kladno region has population of 160.742 people (men 49%, women 51%) (CSO, 2012). According to official statistics, the annual growth rate in the Czech Republic was in 2010 2.3% (Worldbank, 2012).

4.2.5. Natural vegetation

Vegetation of Kladno region basically differs from significantly unforested northern part to the forested southwest and western parts of the district. These are concentrated mainly around Bratronice and Běleč where a vast complex of Křivoklát- woods interfere (Krajník and Pospíšil, 1985). The average forest coverage of Kladno district is very low (16.9 %), and is also one of the lowest in the entire Central Bohemia Region. Coniferous trees in the district of Kladno occur on 64.9% of area (7,598 hectares), the proportion of deciduous trees is 35.1% (4104 ha). On behalf of tree species predominate in the vicinity of the 31% pines (*Pinus sylvestris* L. and *Pinus nigra* Aiton), followed by 21% of oaks (*Quercus robur* L. and *Quercus rubra* L.), next with 19% is spruce (*Picea abies* (L.) H. Karst.), larch (*Larix decidua* Mill., 11 %), birch (*Betula pendula* Roth, 5%) and limes (*Tilia* L. species) and beech (*Fagus* L. species), each 2% (Belušová et al., 2005). The herbs dominating around Kladno are species common for Central European forest, the meadow flora. Yet here on the sunny slopes and limits could be recorded a number of xerophylous or psamophylous (growing on sandy substrate) plants, such as spring pheasant's eye (*Adonis vernalis* L.), varieties of lilacbush (*Aubrieta* Adans. spp.), wood anemone (*Anemone quinquefolia* L.), various kinds of *Stipa* species etc. Among others in this area could be

find a representative botanical species which are protected in the Czech Republic, for example the purple gromwell (*Lithospermum purpureocaeruleum* L.), *Melittis melissophyllum* Thunb., martagon lily (*Lilium martagon* Walter), lesser yellow lady's slipper (*Cypripedium calceolus* L.), small pasqueflower (*Anemone pratensis* L.) and giant horsetail (*Equisetum telmateia*)(Krajník and Pospíšil, 1985).

5. RESULTS AND DISCUSSION

The allotment gardens are threatened by selling the land to private property, removing agricultural land used by gardeners, and building up areas where gardeners grow their plants. By the Drescher et al. (2006), the city authorities rather tend to create the public parks or golf-courses, that is supposedly more in line with the urban disposition. The allotment gardens by the urban planners do not fit into the conceptualisation of the urbanisation. This problem could be solved by the protection of allotment gardens by institutional authority. The other way is to sell the parcels to gardeners for lower price, but that is not possible. Only few 'eco-conscious city dwellers' exist, which appear to be responding to the state of the urban greenery of the twenty-first century, and which take any care about the sustainability for future generation (Acton, 2011). Thanks to this people, the allotment gardens are still in the cities and it is needed to protect them and in the future make it bigger as the places where people can rest, childrens can play, but also learn from the nature and cultivation of the plants.

Majority of respondents was between 70 and 80 years old (13 respondents, 35.1%; Fig. 3), the second most represented age was between 60 and 70 years (11 respondents, 29.7%) The gardens are owned mostly by men (21 cases, 56.8%) but their wives work in the gardens more frequently.

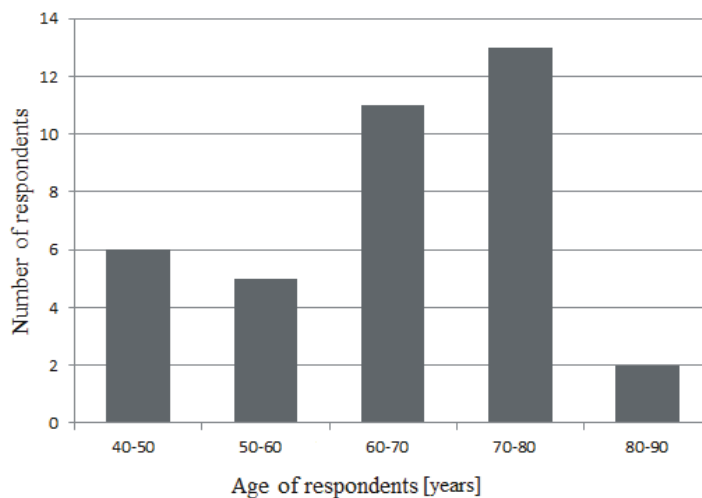


Figure 2 Age of respondents

5.1. Ethnobotanical data

The ethnobotanical research has recorded 104 plant species, belonging to 29 botanical families that are reported in Table 1, listed alphabetically. Other ethnobotanical elements provided in Table 1 follow: botanical and local names, classification of plants (verified by USDA), seasonal growth pattern, purpose of use, plant parts used and specific use of them. There were also calculated Use value index to shown the relative importance (Phillips et al, 1994). The most represented botanical family were *Rosaceae*, represented by 15 species (15.7%) and *Lamiaceae*, represented also by 15 species (Fig. 4). Other mostly represented families were *Apiaceae* (9.5%) and *Asteraceae* (8.4%).

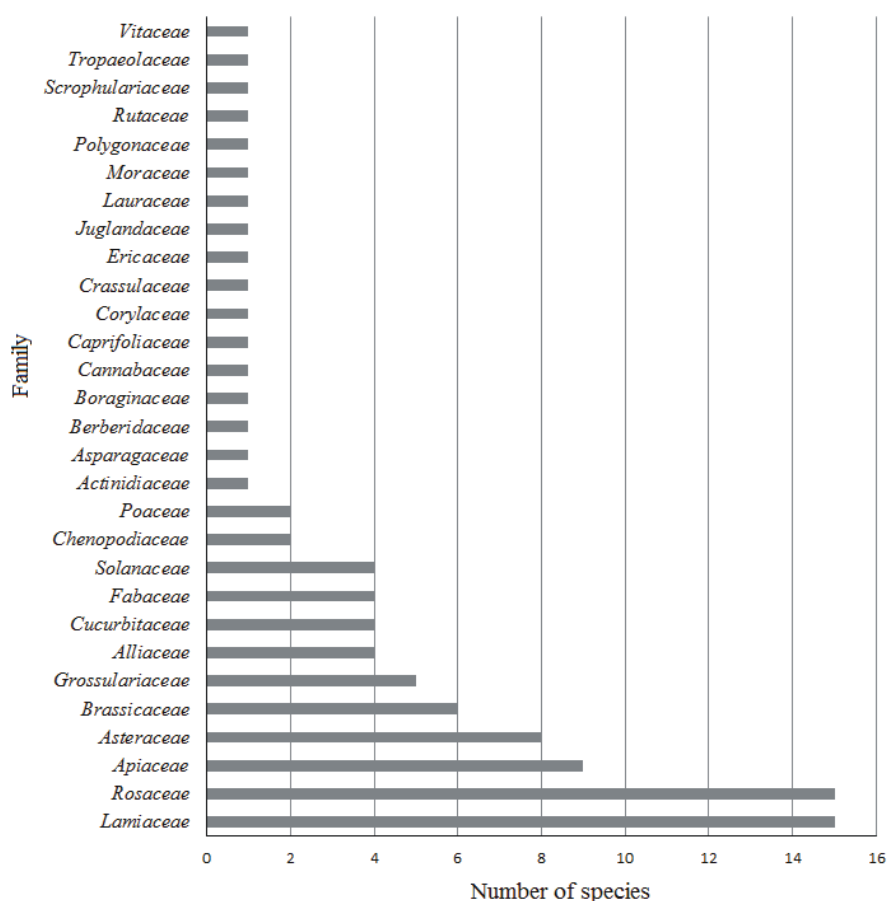


Figure 3 Representation of botanical families of inventoried plants based on number of species

The most frequently cultivated species were *Fragaria × ananassa* (Weston) Duchesne ex Rozier (35 respondents), *Solanum lycopersicum* L. (also 35 respondents) and *Malus domestica* Baumg (33 respondents). Almost 50% of all plant species recognised in allotment gardens were herbs (Fig. 4), especially for vegetable production (39.5%).

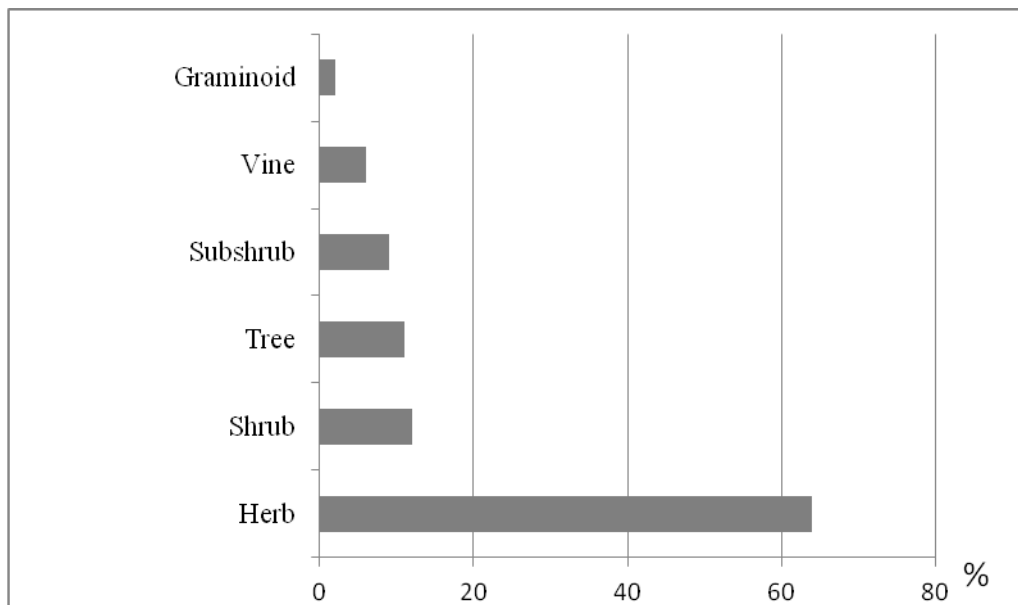


Figure 4 Growth habit of plant species in surveyed allotment gardens

Plant parts used reported most commonly were fruits (36.3%) and leaves (33.2%). There weren't any relevant differences between number of species in each garden. Most often, in each garden is planted 30 - 40 plant species (9 gardens, 24.4%), in extreme less than 10 plant species were planted in 5 gardens (13.5%). The most planted use categories of plant species in the allotments of Kladno region were vegetables (29%) and fruits (28%) followed by others (Fig. 6).

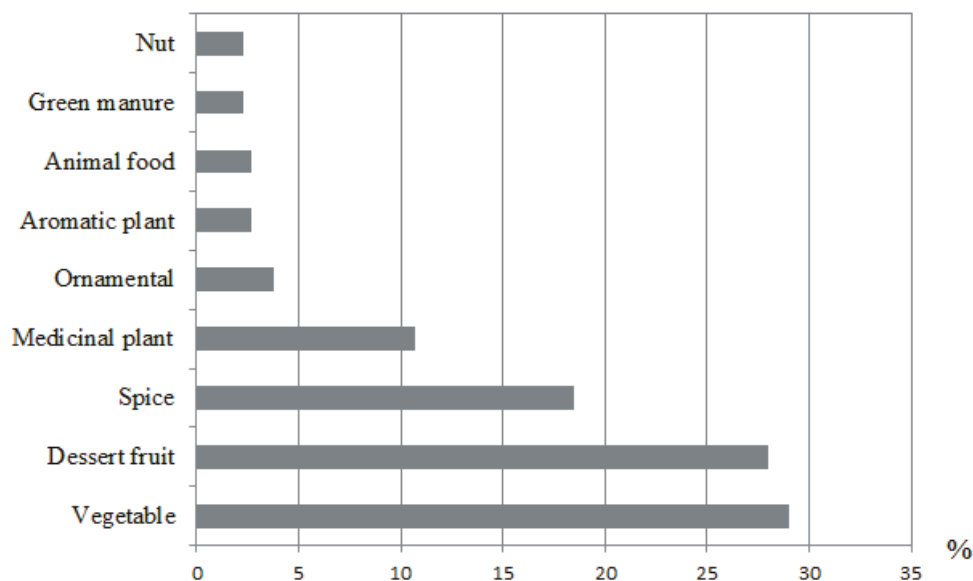


Figure 5 Structure of the categories of plant species encountered in study area

5.2. Major cultivated food plants

Strawberry (*Fragaria × ananassa* (Weston) Duchesne ex Rozier)

The mostly cited plants were strawberries (*Fragaria × ananassa* (Weston) Duchesne ex Rozier), the fast-growing, perennial herbaceous plant with 3-foliolate blade leaves and white, bisexual flowers (Chao-luang et al., 2003). By the Hancock (1999) the strawberries are very easy to grow, which could be the reason for their popularity among the gardeners. Two respondents mentioned cultivation of strawberries on the black plastic sheets. This method is also described by Lieten who recorded this growing method in 1993 in Belgium. Black film not only prevents weeds, but also attracts the sun's rays that make the fruits tastier. Moreover, if the plants are on the sunny station, they have great yield and their taste is full and sweet. The sweet strawberries are very popular to be consumed especially in the fresh form, or could be used in cold cuisine for preparation of shake with milk and sugar. The strawberries are also very often used for baking of cakes, sometimes combined with quark or to make sweet fruit dumplings, made of leavened dough filled by the fruit of strawberries (used fruits do not have to be strawberries only, very often are used apricots or blueberries, as well). The strawberries are also often conserved for winter season. For conservation by freezing the fruits are crushed, mixed with sugar and then frozen. Other

type of conservation is making jam from cooked pieces of strawberries mixed with fair amount of sugar. The preparation of jams and jellies, freezing and canning is documented very well also in the California, USA, but in this area is very frequently used the way of drying (Harris, Mitcham, 2007). The way of drying the strawberries was not recorded in my research. I believe that this is due to the long process of drying under natural conditions or economic reasons, when the family had to have the fruit dryer.

Few respondents also mentioned pickling the whole fruit with mixture of water and sugar.

Tomato (*Solanum lycopersicum* L.)

Tomatoes (*Solanum lycopersicum* L.) are the same of importance as the strawberries. The tomatoes are planted in summertime for production of fruits. Two varieties of the tomatoes are cultivated: the common tomato (*Solanum lycopersicum* L.), with fruit of average weight 70-150 g, and the cherry tomato (*Solanum lycopersicum* L. var. Minima), that has fruit of weight of 20 g maximally. The common tomato is cultivated more often (in 35 cases) than the cherry variety (9 cases) and has also more ways of use and preparation. While cherry tomatoes are consumed in the fresh state in the vegetable salads or separately and the only way of conservation is drying (in one case), the common tomatoes are eaten fresh in all cases, very often are cut and mixed with other vegetable, especially with the cucumbers and peppers. Many of respondents also mentioned making the tomato salad from cut tomatoes, black olives and Balcan cheese. Tomatoes are also very often used for preparation of hot meal as the sauces of the Mediterranean style onto pastas. In the Czech Republic is also very favorite the tomato sauce in the combination with salt dumplings. Very often is also boiled the ketchup of tomatoes and crushed apples and in one case the respondent mentioned making of sweet jam from tomatoes, sugar and rum. This recipe is fairly unique. Tomatoes are mostly conserved as „lečo“ that is similar to chutney. Pieces of tomatoes, peppers and onion are boiled to evaporate the water and the mix is filled to glasses, closed and then conserved in the boiling water. One family with Italian origin mentioned conservation of whole tomatoes in sour water. Although the immature tomatoes contain the toxic solanine (Valíček, 2002), one respondent also mentioned preparation of pickles called “čalamáda”, that is prepared from cut fruits conserved in sour water.

Apple tree (*Malus domestica* Baumg)

The third mostly mentioned species is apple tree (*Malus domestica* Baumg), which fruits are eaten fresh, but very often are used in baking of cakes, pickling of the cut fruits in sweet water, or conserved crushed fruit boiled with sugar. Next mostly planted species in the allotment gardens was the cultivated red currant (*Ribes rubrum* L., *Grossulariaceae*)

which was planted by 28 respondents for its fruits to eat fresh, baked in cakes or pickled to jam, compote in sweet infusion from sugar and water, or pickled as substitution of cranberries. Firstly the fruits are boiled with sugar and clove (aromatic dried flower buds of *Syzygium aromaticum* (L.) Merr. & L.M.Perry) and then pickled to glasses and conserved. 27 respondents also mentioned the cultivation of the cucumber, *Cucumis sativus* L. (*Cucurbitaceae*) for production of fruit to consume fresh (all growers), in the cucumbe salad with mixture of water, vinegar, salt nad sugar, or the cucumber is cutted and combined with the other fresh vegetable (mostly tomatoes, peppers, leaves of onion) to make the vegetable salad, sometimes is added the winegar, the Balcan cheese and some spice. The cucumbers are also very often pickled into sour water with vinegar, salt and sugar. To make the taste better, the bits of chopped onion, horseradish (*Armoracia rusticana* G.Gaertn., B.Mey. & Scherb., *Brassicaceae*) and carrot (*Daucus carota* L., *Apiaceae*) are used. Also is added the allspice (*Pimenta dioica* (L.) Merr., *Myrtaceae*), pepper (*Piper nigrum* L., *Piperaceae*), mustard seed (*Sinapis* spp., *Brassicaceae*) and rarely the dill (*Anethum graveolens* L., *Apiaceae*), which is not as popular as other spices for its exceptional taste. Preparation of “rychlókvašky” (fast fermented cucumbers) was mentioned in few cases. For this preparation are used the big fruita that remain after the harvest. These cucumbers are pierced and placed in the large containe, poured by mixture of the waret, vinegar, salt and sugar, but differently of the classical pickling, the mixture is hot (not cold , not boiling). Cucumbers need to be weighted down by stones to stay all drowned in the pickle. The whole cucumbers should be beneath the surface during the process, otherwise the pickle will be muddy. The fermentation begins second day of the process. Afterwards, the container is left in a warm place, and in 5 days is moved into cold cellar, the fermentation process is then stopped. For this preparation are rarely used the vine leaves that supposedly support the fermentation, but it was not confirmed in any tracking literature.

Onion (*Allium cepa* L.)

Majority of interwievees (26 respondents, 70% totaly) also mentioned the cultivation of the onion (*Allium cepa* L), for cooking not only in fresh state (vegetable salads) but also for warm cooking, e.i. for frying, boiling in the soups and sauces, grilling, and other. Two people add the onion bulbs into sour pickled cucumbers and one person prepares the sweet pickle of chopped onion and sugar, let it more than 12 hours to drain the juice of onion to the sugar and subsequently use it for treating of cough. By Kumar et al.(2010), this way of curating is known since the ancient times. It si due to the anti-inflammatory agents in

onions that onion juice heal not only the soar throat, but also colds, asthma, bronchitis hoarseness and many others diseases especially of blood (high blood pressure, cholesterol and triglyceride). Generally, the onion is considered to be one of the small number of vegetables which reduce heart disease risk.

Table 1 List of species collected on homegardens in Kladno region

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Actinidia colomicta</i> Lindl.	<i>Actinidiaceae</i>	Kiwi	vine	P	fruit	0.02	Food	dessert fruits	1	2.7
<i>Agrimonia eupatoria</i> L.	<i>Rosaceae</i>	Řepík	herb	P	leaf	0.02	Medicines	digestive system disorders	1	2.7
<i>Allium cepa</i> L.	<i>Alliaceae</i>	Cibule	herb	P	bulb	0.76	Food	vegetables	26	70.3
<i>Allium porrum</i> L.	<i>Alliaceae</i>	Pórek	herb	P	leaf	0.22	Food	vegetables	12	32.4
<i>Allium sativum</i> L.	<i>Alliaceae</i>	Česnek	herb	P	bulb	0.72	Food aditives	spices	16	43.2
							Food	vegetables	5	13.5
<i>Allium schoenoprasum</i> L.	<i>Alliaceae</i>	Pažitka	herb	P	leaf	0.84	Food	vegetables	25	67.6
							Food aditives	spices	18	48.6
<i>Anethum graveolens</i> L.	<i>Apiaceae</i>	Kopr	herb	A	leaf	0.62	Food aditives	spices	23	62.2
<i>Apium dulce</i> Mill.	<i>Apiaceae</i>	Celer řapíkatý	herb	P	stem	0.11	Food	vegetables	8	21.6
<i>Apium graveolens</i> L. subsp. <i>rapaceum</i> (Mill.) P.D.Sell	<i>Apiaceae</i>	Celer bulvový	herb	P	bulb	0.43	Food	vegetables	16	43.2
<i>Armoracia rusticana</i> G.Gaertn., B.Mey. & Scherb.	<i>Brassicaceae</i>	Křen	herb	P	root	0.38	Food aditives	spices	10	27.0
<i>Aronia melanocarpa</i> (Michx.) Nutt. & Elliott	<i>Rosaceae</i>	Aronie, Černý jeřáb	shrub	P	fruit	0.05	Food	dessert fruits	2	5.4

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Artemisia dracunculus</i> L.	<i>Asteraceae</i>	Estragon	herb	P	leaf	0.02	Food aditives	spices	4	10.8
<i>Asparagus officinalis</i> L.	<i>Asparagaceae</i>	Asparágus	herb	P	all plant	0.05	Environmental use	ornamentals	6	16.2
					immature stem		Food	vegetables	1	2.7
<i>Beta vulgaris</i> L. ssp. <i>vulgaris</i>	<i>Chenopodiaceae</i>	Červená řepa	herb	A	root	0.43	Food	vegetables	16	43.2
<i>Beta vulgaris</i> L. ssp. <i>cicla</i> L.	<i>Chenopodiaceae</i>	Mangold	herb	A/B	leaf	0.19	Food	vegetables	7	18.9
<i>Brassica napus</i> L.	<i>Brassicaceae</i>	Řepka	herb	A/B	all plant	0.05	Environmental use	fertility improvers	2	5.4
<i>Brassica oleracea</i> L. convar. <i>gemmifera</i> (DC.) Gladis ex Diederichsen	<i>Brassicaceae</i>	Kapusta růžičková	herb	A	leaf	0.24	Food	vegetables	9	24.3
									7	18.9
<i>Brassica oleracea</i> L. subsp. <i>botrytis</i> (L.) Metzg.	<i>Brassicaceae</i>	Květák	herb	A	flower	0.10	Food	vegetables	4	10.8
<i>Brassica oleracea</i> L. var. <i>capitata</i> L.	<i>Brassicaceae</i>	Zelí	herb	A	leaf	0.35	Food	vegetables	13	35.1
<i>Brassica oleracea</i> L. var. <i>gongylodes</i> L.	<i>Brassicaceae</i>	Kedlubna	herb	A	bulb	0.62	Food	vegetables	23	62.2
<i>Brassica oleracea</i> L. var. <i>italica</i> Plenck	<i>Brassicaceae</i>	Brokolice	herb	A	leaf	0.05	Food	vegetables	2	5.4
<i>Brassica oleracea</i> L. var. <i>sabellica</i> L.	<i>Brassicaceae</i>	Kadeřávek, Kapusta kadeřavá	herb	A	leaf	0.24	Food	vegetables	9	24.3
<i>Calendula officinalis</i> L.	<i>Asteraceae</i>	Měsíček	herb	A	flower	0.24	Medicines	skin disorders	7	18.9
<i>Cannabis indica</i> L.	<i>Cannabaceae</i>	Konopí	herb	A	flower and leaf	0.11	Medicines	pain	2	5.4

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Capsicum annuum</i> L.	<i>Solanaceae</i>	Paprika	herb	A/P	fruit	0.65	Food	vegetables	24	64.9
<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai	<i>Cucurbitaceae</i>	Meloun	herb	A	fruit	0.05	Food	dessert fruits	2	5.4
<i>Citrus limon</i> (L.) Osbeck	<i>Rutaceae</i>	Citrón	shrub	P	fruit	0.02	Food	dessert fruits	1	2.7
<i>Coriandrum sativum</i> L.	<i>Apiaceae</i>	Koriandr	herb	A	all plant	0.02	Environmental use	biological protection	1	2.7
<i>Corylus avellana</i> Thunb.	<i>Corylaceae</i>	Liskový ořech	shrub	P	nut	0.08	Food	nuts	2	5.4
							Environmental use	shade		
<i>Cucumis sativus</i> L.	<i>Cucurbitaceae</i>	Okurka	herb	A	fruit	0.27	Food	vegetables	27	73.0
<i>Cucurbita pepo</i> L. var. <i>medullosa</i> Harz	<i>Cucurbitaceae</i>	Cuketa, patizón	herb	A	fruit	0.02	Food	vegetables	19	51.4
<i>Cucurbita pepo</i> L. var. <i>vegetable Sspaghetti</i>	<i>Cucurbitaceae</i>	Špagetová tykev	herb	A	fruit	0.02	Food	vegetables	1	2.7
<i>Cucurbita pepo</i> L. subsp. <i>ovifera</i> (L.) D.S.Decker	<i>Cucurbitaceae</i>	Tykev okrasná	herb	A	fruit	0.05	Environmental use	ornamentals	2	5.4
<i>Cyclanthera pedata</i> Schrad.	<i>Cucurbitaceae</i>	Ačokča	herb	A	fruit	0.02	Food	vegetables	1	2.7
<i>Daucus carota</i> L.	<i>Apiaceae</i>	Karotka	herb	A	root	0.02	Food	vegetables	22	59.5
<i>Echinacea purpurea</i> (L.) Moench	<i>Asteraceae</i>	Třapatka	herb	P	flower	0.32	Medicines	immune system disorders	2	5.4
							Environmental use	ornamentals		
<i>Eruca sativa</i> (L.) Mill.	<i>Brassicaceae</i>	Rukola	herb	A	leaf	0.08	Food	vegetables	3	8.1

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Euphrasia rostkoviana</i> Hayne	<i>Scrophulariaceae</i>	Světlík	herb	A	flower leaf	0.02	Medicines	digestive system disorders injuries inflammation	1	2.7
<i>Ficus carica</i> L.	<i>Moraceae</i>	Fíkovník	shrub	P	fruit	0.02	Food	dessert fruits	1	2.7
<i>Foeniculum vulgare</i> Mill.	<i>Apiaceae</i>	Fenykl	herb	B/P	leaf	0.02	Food	vegetables	1	2.7
<i>Fragaria × ananassa</i> (Weston) Duchesne ex Rozier	<i>Rosaceae</i>	Jahody zahradní	herb	P	fruit	1	Food	dessert fruits	35	94.6
<i>Fragaria vesca</i> L.	<i>Rosaceae</i>	Jahody měsíční	herb	P	fruit	0.22	Food	dessert fruits	8	21.6
<i>Helianthus annuus</i> L.	<i>Asteraceae</i>	Slunečnice	herb	A	flower all plant	0.11	Animal food Environmental use	fodder ornamentals	3	8.1
<i>Hyssopus officinalis</i> L.	<i>Lamiaceae</i>	Yzop	herb	P	leaf	0.05	Food aditives	spices	1	2.7
<i>Chaenomeles japonica</i> (Thunb.) Spach	<i>Rosaceae</i>	Gdoulovec	shrub	P	fruit all plant	0.14	Food Environmental use	dessert fruits ornamentals	4	10.8
<i>Juglans regia</i> L.	<i>Juglandaceae</i>	Vlašský ořech	tree	P	nut	0.05	Food	nuts	2	5.4

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Lactuca sativa</i> L. var. <i>capitata</i>	Asteraceae	Salát	herb	A/B/P	leaf	0.54	Food	vegetables	19	51.4
								Environmental use	fertility improvers	1
<i>Laurus nobilis</i> L.	Lauraceae	Bobkový list	tree		leaf	0.11	Food aditives	spices	3	8.1
<i>Lavandula angustifolia</i> Moench	Lamiaceae	Levandule	shrub	P	leaf	1.1	Environmental use	aromatic	24	64.9
					leaf		Food aditives	spices		
<i>Levisticum officinale</i> W.D.J.Koch	Apiaceae	Libeček	herb	P	leaf and stem	0.84	Food aditives	spices	13	35.1
<i>Lonicera caerulea</i> L. subsp. <i>kamtschatica</i> (Sevast.) Gladkova	Caprifoliaceae	Borůvka kamčatská	shrub	P	fruit	0.16	Food	dessert fruits	6	16.2
<i>Mahonia aquifolium</i> (Pursh) Nutt.	Berberidaceae	Mahon	shrub	P	leaf	0.05	Environmental use	ornamentals	2	5.4
<i>Majorana hortensis</i> Moench	Lamiaceae	Majoránka	herb	P	leaf	0.41	Food aditives	spices	9	24.3
<i>Malus domestica</i> Baumg.	Rosaceae	Jabloň	tree	P	fruit	0.1	Food	dessert fruits	33	89.1
<i>Marrubium vulgare</i> L.	Lamiaceae	Jablečník	herb	P	leaf	0.05	Medicines	respiratory system disorders	1	2.7
<i>Matricaria chamomilla</i> L. var. <i>recutita</i> (L.) Grierson	Asteraceae	Heřmáněk	herb	A	flower	0.08	Medicines	skin disorders	2	5.4
<i>Melissa officinalis</i> L.	Lamiaceae	Meduňka	herb	P	leaf	0.49	Environmental use	aromatic	15	40.5

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Mentha piperita</i> L.	<i>Lamiaceae</i>	Máta	herb	P	leaf	0.70	Environmental use	aromatic	23	62.2
					leaf		Food aditives	spices		
<i>Nepeta cataria</i> L.	<i>Lamiaceae</i>	Šanta kočičí	herb	P	leaf	0.05	Animal food	fodder	1	2.7
<i>Ocimum basilicum</i> L.	<i>Lamiaceae</i>	Bazalka	herb	A/P	leaf	0.38	Food aditives	spices	10	27.0
<i>Origanum creticum</i> L.	<i>Lamiaceae</i>	Dobromysl	herb	P	leaf	0.32	Food aditives	spices	8	21.6
<i>Origanum vulgare</i> L.	<i>Lamiaceae</i>	Oregáno	herb	P	leaf	0.27	Food aditives	spices	9	24.3
<i>Panicum miliaceum</i> L.	<i>Poaceae</i>	Proso	graminoid	A	seed	0.02	Animal food	fodder	1	2.7
<i>Pastinaca sativa</i> L.	<i>Apiaceae</i>	Pastiňák	herb	B/P	root	0.22	Food	vegetables	1	2.7
<i>Petroselinum crispum</i> (Mill.) Fuss var. <i>radicosum</i> (Alef.) Danert	<i>Apiaceae</i>	Petržel kořenová	herb	A/B	root	0.41	Food	vegetables	13	35.1
<i>Petroselinum crispum</i> convar. <i>vulgare</i> (Nois) Danert	<i>Apiaceae</i>	Petržel naťová	herb	A/B	leaf	0.35	Food aditives	spices	17	45.9
<i>Phaseolus coccineus</i> L.	<i>Fabaceae</i>	Fazole - Boby	vine	A	seed	0.35	Food	vegetables	12	32.4
<i>Phaseolus vulgaris</i> L.	<i>Fabaceae</i>	Fazolky-lusky	vine	A	fruit	0.35	Food		13	35.1
<i>Pisum sativum</i> L.	<i>Fabaceae</i>	Hrášek	vine	A	fruit and seed	0.57	Food	vegetables	20	54.1

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Physalis peruviana</i> L.	<i>Solanaceae</i>	Physalis	shrub	P	fruit	0.02	Food	dessert fruits	1	2.7
<i>Prunus armeniaca</i> L.	<i>Rosaceae</i>	Meruňka	tree	P	fruit	0.27	Food	dessert fruits	10	27.0
<i>Prunus avium</i> (L.) L.	<i>Rosaceae</i>	Třešeň	tree	P	fruit	0.32	Food	dessert fruits	12	32.4
<i>Prunus cerasus</i> L.	<i>Rosaceae</i>	Višeň	tree	P	fruit	0.41	Food	dessert fruits	12	32.4
<i>Prunus domestica</i> L. 'Čačanská lepotica'	<i>Rosaceae</i>	Pološvestka	tree	P	fruit	0.11	Food	dessert fruits	4	10.8
<i>Prunus domestica</i> L.	<i>Rosaceae</i>	Švestka	tree	P	fruit	0.57	Food	dessert fruits	18	48.6
<i>Prunus domestica</i> subsp. <i>insititia</i> (L.) C.K.Schneid	<i>Rosaceae</i>	Slivoň	tree	P	fruit	0.22	Food	dessert fruits	8	21.6
<i>Prunus persica</i> (L.) Batsch var. <i>nucipersica</i> (Suckow) C.K.Schneid.	<i>Rosaceae</i>	Nektarinika	tree	P	fruit	0.05	Food	dessert fruits	2	5.4
<i>Prunus persica</i> (L.) Batsch	<i>Rosaceae</i>	Broskvoň	tree	P	fruit	0.46	Food	dessert fruits	17	45.9
<i>Pyrus communis</i> L.	<i>Rosaceae</i>	Hrušeň	tree	P	fruit	0.08	Food	dessert fruits	3	8.1
<i>Raphanus sativus</i> L.	<i>Brassicaceae</i>	Ředkvička	herb	A/B	root	0.41	Food	vegetables	15	40.5
<i>Raphanus sativus</i> L. var. <i>niger</i> (Mill.) J. Kern.	<i>Brassicaceae</i>	Černá ředkev	herb	A/B	root	0.02	Food	vegetables	1	2.7
<i>Raphanus sativus</i> var. <i>Alba</i>	<i>Brassicaceae</i>	Ředkev bílá	herb	A/B	root	0.02	Food	vegetables	1	2.7
<i>Rheum rhabarbarum</i> L.	<i>Polygonaceae</i>	Rebarbora	herb	P	petiole	0.32	Food	vegetables	12	32.4
<i>Ribes</i> × <i>nidigrolaria</i> Rud.Bauer & A.Bauer	<i>Grossulariaceae</i>	Josta	shrub	P	fruit		Food	dessert fruits	10	27.0

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Ribes glandulosum</i> Ruiz & Pav.	<i>Grossulariaceae</i>	Rybíz bílý	shrub	P	fruit	0.30	Food	dessert fruits	10	27.0
<i>Ribes nigrum</i> L.	<i>Grossulariaceae</i>	Rybíz černý	shrub	P	fruit	0.62	Food	dessert fruits	22	59.5
<i>Ribes rubrum</i> L.	<i>Grossulariaceae</i>	Rybíz červený	shrub	P	fruit	0.70	Food	dessert fruits	28	75.7
<i>Ribes uva-crispa</i> L.	<i>Grossulariaceae</i>	Angrešt	shrub	P	fruit	0.51	Food	dessert fruits	19	51.4
<i>Rosmarinus officinalis</i> L.	<i>Lamiaceae</i>	Rozmarýn	subshrub	P	leaf	0.32	Food aditives	spices	8	21.6
<i>Rubus idaeus</i> × <i>Rubus 'Tayberry'</i>	<i>Rosaceae</i>	Ostružiník beztrnný	subshrub	P	fruit	0.38	Food	dessert fruits	15	40.5
<i>Rubus idaeus</i> L.	<i>Rosaceae</i>	Maliny	subshrub	P	fruit	0.49	Food	dessert fruits	18	48.6
<i>Rubus 'Tayberry'</i>	<i>Rosaceae</i>	Malinoostružina	subshrub	P	fruit	0.11	Food	dessert fruits	4	10.8
<i>Salvia officinalis</i> L.	<i>Lamiaceae</i>	Šalvěj	subshrub	P	leaf	0.46	Environmental use Medicines Food aditives	aromatic respiratory system disorders spices	15	40.5
<i>Satureja hortensis</i> L.	<i>Lamiaceae</i>	Saturejka	herb	P	leaf	0.14	Food aditives	spices	2	5.4
<i>Scorsonera hispanica</i> L. 'Libochovický'	<i>Asteraceae</i>	Černý kořen libochovický	herb	P	root	0.02	Food	vegetables	1	2.7
<i>Sinapis arvensis</i> L.	<i>Brassicaceae</i>	Hořčice	herb	A	all plant	0.02	Environmental use	fertility improvers	1	2.7

Table 1 Continued

Botanical name	Family	Vernacular name	Life form	Life cycle	Part used	Use value	Purpose of use	Specific use	Citation	
									n	%
<i>Solanum lycopersicum</i> L.	<i>Solanaceae</i>	Rajče	herb	A/P	fruit	0.81	Food	vegetables	35	94.6
<i>Solanum lycopersicum</i> L. var. <i>Minima</i>	<i>Solanaceae</i>	Rajče balkonové	herb	A	fruit	0.30	Food	vegetables	9	24.3
<i>Solanum tuberosum</i> L.	<i>Solanaceae</i>	Brambor	herb	P	tuber	0.57	Food	vegetables	22	59.5
<i>Spinacia oleracea</i> L.	<i>Chenopodiaceae</i>	Špenát	herb	A	leaf	0.16	Food	vegetables	7	18.9
<i>Stevia rebaudiana</i> Bertoni	<i>Asteraceae</i>	Stevie	herb	P	leaf	0.02	Food aditives	spices	1	2.7
<i>Symphytum officinale</i> L.	<i>Boraginaceae</i>	Kostival	herb	P	leaf and stem	0.02	Medicines	pain	1	2.7
<i>Thymus pulegioides</i> L.	<i>Lamiaceae</i>	Mateřídouška	subshrub	P	leaf	0.16	Medicines	injuries	1	2.7
							Environmental use	aromatic	1	2.7
<i>Thymus vulgaris</i> L.	<i>Lamiaceae</i>	Tymián	subshrub	P	leaf	0.65	Food aditives	spices	15	40.5
<i>Tropaeolum majus</i> L.	<i>Tropaeolaceae</i>	Lichořeřišnice	herb	A	all plant	0.05	Environmental use	biological protection	2	5.4
					all plant			ornamentals	1	2.7
<i>Vaccinium corymbosum</i> L.	<i>Ericaceae</i>	Kanadská borůvka	subshrub	P	fruit	0.21	Food	dessert fruits	8	21.6
<i>Vigna mungo</i> (L.) Hepper	<i>Fabaceae</i>	Vigna	vine	A	seeds	0.02	Food	vegetables	1	2.7
<i>Vitis vinifera</i> Marshall	<i>Vitaceae</i>	Víno	vine	P	fruit and leaf	0.59	Food	dessert fruits	22	59.5
<i>Zea mays</i> L.	<i>Poaceae</i>	Kukuřice	graminoid	A	seed	0.11	Food	vegetables	4	10.8

5.3. Medicinal plants

There are important information about medicinal use of some cultivated plants that many gardeners mentioned. A total of 12 plants used for medicinal purposes and the information gathered during the survey are showed in Table 2, listed alphabetically by scientific name. The most represented botanical family are Lamiaceae (4 species, 33.5%) and Asteraceae (3 species). Other families were represented with one species each. Only in two cases the plant habitus was the subshrub (*Salvia officinalis* L., *Thymus pulegioides* L.), the most plants were herbs. For curating the sore throat are used 5 species (41%) and for treatment of stomach disorders there are mentioned 3 species (25%). Mostly is used the decoction of leaves or flowers of plants, followed by external use of liniments in the form of balms or macerates. Compared with research in Kosovo (Musa et al., 2011) where most of used medicinal plants were trees, and survey in Kosovo (Mustafa et al., 2011b), where the predominant families used for medicinal purposes were *Rosaceae* (21%) and *Asteraceae* (7%), the study in Kladno region shows, that gardeners use the herbs or subshrubs, probably because of the rapid growth and easy harvest of leaves from the smaller plants of *Lamiaceae*.

***Melissa officinalis* L. (*Lamiaceae*)**

Mostly cited *Melissa officinalis* L. (*Lamiaceae*) that was cultivated by 15 respondents and four of them prepare the aromatic pillows that supposedly have calming effect. This was previously demonstrate by results of work of Ballard et al. (2002), who applied extracts of this aromatic plants (compared to placebo) onto group of sufferers from advanced Alzheimer's disease with great results. This raises a possibility that beneficial doses of melissa may have potential efficacy to the cholinergic decrements observed in aging and also in states of delirium (Ashton, 2002). At the same way of application was also used the horehound (*Marrubium vulgare* L., *Lamiaceae*) that was found only in one garden and the farmer also fills in the aromatic pillows for calming effect. But the horehound was discussed in the literature as treatment of cough, gastrointestinal complaints, and other lung ailments (Hull, 2010). By Elberry et al (2010) the extracts of horehound improves the liver function. By Salinas (2005), the horehound is used for the treatment of variety of diseases as gastroenterical and respiratory disorders or inflammatory. So far there was no evidence of a calming effect. However, the *Marrubium vulgare* L. should be better examined for this purpose in potential future research.

***Cannabis indica* L. (*Cannabaceae*)**

Next medicinally applied plant is *Cannabis indica* L. (*Cannabaceae*) which was cultivated by two older women (87 and 72years old) for making a home-made balm. Leaves of the plant are boiled

with lard for several hours. After cooling of the mixture and solidification of the lard, the balm is applied on joints sore by rheumatitis and arthritis. As Rättsch (1957) published, the cannabis is prescribed for many ailments, including not only the nervous disorders, impotence, lack of the appetite, urine retention, but also for the healing of pain. Decoction of the root is more suitable for healing of the arthritis, rheuma as well as for curation of muscular atrophy (Doane, 1985).

Pot marigold (*Calendula officinalis* L., *Asteraceae*)

For making the balm in the same way as from the cannabis was in one case used the pot marigold (*Calendula officinalis* L., *Asteraceae*) but the balm was used to treat skin-burns. Muley (2009) published that the pot marigold had great wound healing activity. Based on his attempt on rats, the highest healing effect is when the gel of 2% calendula is applied daily onto wound caused not only by burning, but also kinds of skin rash or eczema. This way of healing is mentioned also by Leach (2008), who also recommends the baths to improve skin quality. The pot marigold is also used for its calming effects in case of stomach disorders and pains. This way of preparation in the form of tea is also used in the southernmost region of the Soviet Far East, Primorye (Moskalenko, 1987).

Purple coneflower (*Echinacea purpurea* (L.) Moench, *Asteraceae*)

Comfrey (*Symphytum officinale* L., *Boraginaceae*)

Flowers of purple coneflower (*Echinacea purpurea* (L.) Moench, *Asteraceae*) and roots of comfrey (*Symphytum officinale* L., *Boraginaceae*) were used in ethanol extraction. The purple coneflower ethanol extract was drunk by one gardener as preventive treatment of cold. The plant has been used for many centuries, customarily as a curative for the upper respiratory infections, bronchitis, coughs, common cold, and some inflammatory conditions also the studies of the Percival (2000) show that the plant and its active components affect the phagocytic immune system. In the attempt of Currier (2004) was the extract of purple coneflower roots administered to leukemia patients and after 9 days was shown greater improvement, than in the patients treated with placebo. It is seen, that *Echinacea purpurea* (L.) has great potential in the treating of the immune system disorders and in the future research and attempts, should be find next therapeutics properties. The roots of comfrey are also prepared in the way of ethanol extract, but this is applied directly on aching joints for calming of pain. The comfrey is used for decades for its property of alleviating the pain. In the attempt was shown, that curative made of comfrey was effective in relieving of pain and stiffness and in improving physical functioning of painful joints of patients with primary osteoarthritis of the knee diagnosed (Smith, 2011).

Table 2 List of medicinal species collected on allotment gardens in Kladno region

Botanical name	Family	Vernacular name	Citation (n=37)	Part used	Administration	Preparation	Treated disease(s) or medical use(s)	Route of administration	Citations*	
									n	%
<i>Allium cepa</i> L.	<i>Alliaceae</i>	Cibule	26	bulb	fresh	marinated in sugar	Sore throat	Oral (mixture)	1	3,8
<i>Agrimonia eupatoria</i> L.	<i>Rosaceae</i>	Řepík	1	leaf	dried	decoction	Stomach disorders	Oral (potions)	1	100
					fresh	decoction	Stomach disorders	Oral (potions)	1	100
<i>Calendula officinalis</i> L.	<i>Asteraceae</i>	Měsíček	7	flower	dried	bath	Anti-eczemas	External (wash)	1	14,2
						decoction	Stomach disorders	Oral (potions)	1	14,2
					fresh	balm	Healing wounds	External (liniment)	2	28,4
<i>Cannabis indica</i> L.	<i>Cannabaceae</i>	Konopí	2	flower	dried	balm	Anti-rheumatic	External (liniment)	2	100
				leaf	dried	balm	Anti-rheumatic	External (liniment)	1	50
					fresh	balm	Anti-rheumatic	External (liniment)	2	100
<i>Echinacea purpurea</i> (L.) Moench	<i>Asteraceae</i>	Třapatka	2	flower	fresh	macerate	Sore throat	Oral (potions)	1	50
						decoction	Preventive	Oral (potions)	1	50

Table 1 Continued

Botanical name	Family	Vernacular name	Citation (n=37)	Part used	Administration	Preparation	Treated disease(s) or medical use(s)	Route of administration	Citations*	
									n	%
<i>Euphrasia rostkoviana</i> Hayne	<i>Scrophulariaceae</i>	Světlík	1	flower and leaf	dried	poultice	Anti-inflammatory Healing wounds	External (poultices)	1	100
						decoction	Stomach disorders	Oral (potions)	1	100
						fresh	poultice	Anti-inflammatory Healing wounds	External (poultices)	1
<i>Marrubium vulgare</i> L.	<i>Lamiaceae</i>	Jablečník	1	leaf	dried and fresh	decoction	Sore throat	Oral (potions)	1	100
<i>Matricaria chamomilla</i> L. var. <i>recutita</i> (L.) Grierson	<i>Asteraceae</i>	Heřmáněk	2	flower	dried	bath	Anti-eczemas	External (wash)	1	50
						decoction	Calming, Insomnia	Oral (potions)	2	100
						fresh	decoction	Calming, Insomnia	Oral (potions)	2
<i>Melissa officinalis</i> L.	<i>Lamiaceae</i>	Meduňka	15	leaf	dried	decoction	Headache, Insomnia	Oral (potions)	9	60
					fresh	decoction	Headache, Insomnia	Oral (potions)	14	93
<i>Salvia officinalis</i> L.	<i>Lamiaceae</i>	Šalvěj	15	leaf	dried	decoction	Preventive	Oral (potions)	6	40
					fresh	decoction	Preventive	Oral (potions)	9	60
						gargle	Sore throat	Oral (potions)	3	20
						marinated in honey	Sore throat	Oral (mixture)	1	6,6

Table 1 Continued

Botanical name	Family	Vernacular name	Citation (n=37)	Part used	Administration	Preparation	Treated disease(s) or medical use(s)	Route of administration	Citations*	
									n	%
<i>Symphytum officinale</i> L.	<i>Boraginaceae</i>	Kostival	1	leaf	fresh	macerate	Anti-rheumatic	External (liniment)	1	100
				stem	fresh	macerate	Anti-rheumatic	External (liniment)	1	100
<i>Thymus pulegioides</i> L.	<i>Lamiaceae</i>	Mateřidouška	2	leaf	frozen	ice poultice	Heeling herpes	External (liniment)	1	50

* Number and percentage of respondents who mentioned the specific use of the particular species

CONCLUSION

This study evaluated ethnobotanical knowledge on useful plants cultivated in allotment gardens in the region of Kladno in central Bohemia. The study used semi-structured questionnaires and direct observation. In total, 37 respondents represented mainly by the age group 70-80 years (35.1%) were interviewed. Elderly people used wider spectrum of gardening techniques than young gardeners. From the direct observation was obvious that composition of plants on privately owned allotments had different diversity than composition of plants on allotments owned by the ČSZ.

The research recorded 109 plants belonging to 29 botanical families and 94 genera to be used by local people. *Lamiaceae* (15 species) and *Rosaceae* (15 species) were the most frequent families used. Most commonly reported plant parts used were fruits (36.3%) and leaves (33.2%). Most commonly cultivated plants were strawberries (*Fragaria × ananassa* (Weston) Duchesne ex Rozier), tomatoes (*Solanum lycopersicum* L.), apple tree (*Malus domestica* Baumg), red currant (*Ribes rubrum* L., *Grossulariaceae*), cucumber (*Cucumis sativus* L., *Cucurbitaceae*) and the onion (*Allium cepa* L., *Alliaceae*). Important information on 12 plants with medicinal properties was recorded, e.g. Melissa (*Melissa officinalis* L.), the horehound (*Marrubium vulgare* L.), *Cannabis indica* L., the pot marigold (*Calendula officinalis* L.), purple coneflower (*Echinacea purpurea* (L.) Moench) and comphrey (*Symphytum officinale* L., *Boraginaceae*). The surveyed plants were recorded to heal or alleviate a wide range of illnesses and pains with curative effect having use also in pharmacological industry.

This research also showed large scale of degradation of the cultivated plant species in the allotment gardens. Due to rapidly developing urbanism and public parks or golf-courses, the allotment gardens are endangered. Thus, this problem needs to be solved urgently. For example, recommendation of the author would be to protect allotment gardens by institutional authority by developing a strategy to ensure the longer functional gardens (such as the purchase of land back from private owners). Another possibility would be selling the plots to gardeners for lower price to maintain the allotment gardens or to people who are interested in agroturism or spending the leisure time in the nature. Further project objectives could be done in order to extend the areas of allotment gardens to other areas of the Kladno region.

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APPENDICES**Appendix 1** Blank form of used questionnaire

Allotment gardens questionnaire

Bc. Jiřina Klubičková, 2011

Date	Allotment	Questionnaire No.

Socio-economic description of the owner

Name	Gender	Age	Address	Education

Description of collected plants

No.	Local name	Botanical name	Family	Origin	Parts used	Using	Use form



Appendix 2 Typical private allotment garden in area of Kladno Rozdělov- Zpropadenka (photo by author)



Appendix 3 Characteristic rental allotment garden owned by ČSO in the area of Kladno Švermov (photo by author)



Appendix 4 Information board of ČSZ in the Kladno Rozdělov- Zpropadenka (photo by author)



Appendix 5 *Marrubium vulgare* L. (photo by author)



Appendix 6 *Melissa officinalis* L. (photo by author)



Appendix 7 *Cucurbita pepo* L. var. *medullosa* Harz (photo by author)