FOREIGN EXPERIENCE IN PLANNING HORTICULTURAL AND PARK MANAGEMENT TAKING INTO ACCOUNT INNOVATIVE ACTIVITIES

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Scientific justification of the introduction of new species of ornamental plants and their adaptation to local conditions is an important direction of modern botanical research. Of particular interest are perennial flowering plants, which can become the basis for the creation of stable and durable plant groups. The formation of the assortment of ornamental plants in garden centers is a complex process that requires in-depth knowledge of the biological characteristics of plants, climatic conditions of the region and consumer needs. Horticulture is an important branch of agriculture, providing the population with fresh fruits, vegetables and ornamental plants. Effective planning of horticultural production plays a key role in ensuring high productivity, product quality and economic feasibility. Studying and adapting advanced foreign experience in this area is relevant for increasing the efficiency of domestic horticulture.

If we consider the current trends in European gardening, they reflect the growing attention to environmental friendliness, sustainability and harmony with nature. The main key trends are environmental friendliness and sustainable development, namely the use of local plants that are better adapted to climatic conditions and require less care, the introduction of rainwater harvesting systems and economical irrigation, the use of environmentally friendly materials for paving paths, building benches and other garden elements. Green spaces play an important role in absorbing carbon dioxide and maintaining biological diversity.

Gardens for biodiversity creating conditions for attracting wild animals and insects, such as bees, butterflies and birds, the use of flowering meadows, hedges and plantings that attract pollinators, the creation of "wild" areas of the garden where plants grow without human intervention. Naturalistic landscapes are the rejection of strict geometric shapes in favor of freer and smoother lines, the creation of gardens that imitate natural landscapes such as forests, meadows and water bodies, the use of natural materials such as stone and wood. Vertical gardening is through the use of vertical surfaces to create green walls and gardens, especially relevant for urban spaces where land area is limited. Vertical gardening not only decorates buildings, but also improves air quality and reduces temperatures. Creating public gardens and parks where people can relax, socialize and grow food, arranging roofs and balconies to create small gardens. Such spaces improve the quality of life in cities and promote social interaction. The use of modern technologies, namely the introduction of automatic irrigation and lighting systems, the use of applications for planning and maintaining the garden, the use of drones to inspect and maintain large park areas. These trends reflect a growing awareness of the importance of preserving nature and creating comfortable and environmentally friendly living spaces.

In France, as in other countries with developed horticulture, scientific approaches are used when forming the assortment of garden centers, which allow ensuring the stability and decorativeness of plant compositions. France is a recognized leader in the field of horticulture and landscape design. Its rich traditions, favorable climate and high consumer demand have formed one of the largest and most developed markets for ornamental planting material in Europe. The French market offers a huge selection of ornamental plants, from classic varieties to exotic novelties. Roses, lavender, bougainvillea, as well as a variety of coniferous and deciduous trees and shrubs are especially popular.

French producers adhere to strict quality standards, which guarantees the health and durability of plants. Much attention is paid to the selection of new varieties with increased resistance to diseases and pests. The demand for ornamental plants in France has a pronounced seasonality. The greatest demand is observed in spring and autumn, when the main landscaping work is carried out. France has a well-developed infrastructure for growing, selling and delivering ornamental plants. There are numerous nurseries, garden centers, wholesale bases and online stores offering a wide range of

products. There is growing interest in environmentally friendly methods of growing plants and the use of local varieties. Gardens created according to the principles of biodiversity are becoming popular [3, 6, 7, 8, 11, 12].

France, as one of the leading countries in the field of horticulture and landscape design, actively supports this sector through government programs. These programs are aimed at stimulating the development of horticulture, preserving biodiversity, supporting small and medium-sized enterprises and promoting environmentally friendly production. Plan de relance - a large-scale program for the recovery of the French economy after the COVID-19 pandemic, which involves significant investments in agriculture, including horticulture [3, 6,]. Plan Bio 2030 - a national program for the development of organic farming, which involves increasing the area under organic crops, including fruit and berry crops [3, 6,]. Plans de filières are sectoral plans for various agricultural sectors, including horticulture, which define strategic objectives and measures for the development of each sector [3, 6, 7, 8, 11, 12].

The French National Institute of Statistics and Economic Research (INSEE) indicates that the components of the floral sector are professional gardeners and landscape designers - 40%, this segment is one of the largest consumers of ornamental planting material who prefer high-quality plants that match their projects [5-9, 21-26].

Private gardeners make up 20%, they are amateurs looking for plants for their gardens, balconies and terraces [11, 12]. Municipalities and public institutions make up 55%, purchasing ornamental plants for landscaping parks, squares and other public spaces.

The French Ministry of Agriculture, according to the latest data, highlights that the area of licensed nurseries in 2023 is over 5 thousand hectares, but in 2001 their area was only 3 thousand hectares. Most of the ornamental nurseries are located in the Burgundy-Franche-Comté region. All of them are members of the Association of Florists and Gardeners of France.

Statistics on the sales of the garden market in France 2010-2023 show that the total turnover of the French horticultural sector increased to seven billion euros, but in 2021 it was only 6.84 billion euros, but by the end of 2024, garden center sales reached almost 7.3 billion euros.

The consumer price index for horticulture (flowers, plants, seeds, plants) in France 2020-2024 increased and reached 127.69. The distribution of garden center sales value in France in 2023 by category, established garden centers and seed companies accounted for more than a quarter of the total turnover of French garden centers in 2013. The division of the French flower market into three main segments – cut flowers, potted plants and planting material – is a fairly common practice in this industry. Each of these segments has its own characteristics, trends and challenges.

The cut flower market segment includes flowers that are grown for cutting and further sale in vases, bouquets and arrangements. As for the features, this is high competition among producers and suppliers, both local. The demand for certain types of cut flowers varies depending on the season and holidays, they have a limited shelf life, which requires quick sale and special transportation conditions, which affects their cost. Current trends include the demand for exotic species, the development of online sales and the demand for environmentally friendly flowers grown without the use of harmful chemicals. The cut flower market segment includes flowers that are grown for cutting and subsequent sale in vases, bouquets, and compositions. Regarding its features, there is high competition among local and other producers and suppliers. Demand for certain types of cut flowers varies depending on the season and holidays. They have a limited shelf life, requiring quick sale and special transportation conditions, which affects their cost. Current trends include demand for exotic varieties, the development of online sales, and demand for environmentally friendly flowers grown without the use of harmful chemicals.

The potted plant market segment includes plants that are grown in pots and are intended for cultivation in homes, offices, or outdoor areas. Features include a wide selection of plants with different shapes, sizes, and colors; growing potted plants takes more time compared to cut flowers, but potted plants have a higher value than cut flowers. Current trends show that plants with simple

shapes and minimal care requirements are gaining popularity. There is a growing interest in plants for vertical interior landscaping and demand for plants that improve indoor air quality.

The planting material market segment includes seeds, bulbs, seedlings, and other materials necessary for plant propagation. Features include that the demand for planting material strongly depends on the season. Planting material allows consumers to grow plants themselves, which promotes the development of gardening. The development of landscape design and the increasing interest in gardening stimulate the demand for planting material. Trends include a growing demand for plants that can be used to create beautiful garden compositions.

Garden centres in Europe play an important role in landscape design, gardening and providing consumers with a variety of plants and related products. They have evolved from simple nurseries to comprehensive retail outlets offering a wide range of products and services. Here are the main aspects and characteristics of garden centres in Europe. Variety of formats and sizes. Large chain garden centres. In many European countries, there are large chains of garden centres that have several branches throughout the country or even in different countries. They offer a wide range of products and often have additional services such as cafes, playgrounds and advice centres. Examples include B&Q and Homebase in the UK, Hornbach and Obi in Germany and elsewhere. Independent family-run garden centres. Many garden centres remain independent family-run businesses, often with a narrower specialism or a specific approach to customer service. They may focus on local plants, organic gardening or rare species. Specialized nurseries: Some garden centers specialize in certain types of plants, such as roses, alpine plants, fruit trees or ornamental shrubs.

Product range and services. Plants The main range includes a wide selection of ornamental plants for the garden and home: annual and perennial flowers, ornamental shrubs and trees, conifers, houseplants, vegetable and fruit seedlings. Related products Garden centers offer everything you need for gardening: soil, fertilizers, plant protection products, pots, tools, garden furniture, garden decor, fountains, lighting, as well as products for pets. Many garden centers provide additional services such as landscape design, gardening advice, plant delivery, plant transplanting, gardening workshops and seminars.

The next step in Table 1. is advisable to consider the largest garden centers in France, which grow a wide assortment of annual and perennial flowers used for landscaping gardens, parks, and flowerbeds, and specialize in growing exotic plants that are in demand among collectors, and conduct gardening master classes.

Table 1. Characteristics of garden centers and nurseries in France

Name	Area	Activities
CasaNova	10 hectare.	nursery, individual landscaping project, rent the necessary garden tools
La Graineterie du Marché	8 hectare	garden center and nursery, seed and plant store, offering a wide range of seeds and plants, as well as advice on growing and caring for plants.
Le Prince Jardinier	8 hectare	garden center and nursery, has a botanical focus and offers no less than 1,300 specimens of trees, shrubs, conifers, old roses, bamboo and cereals, climbing plants, heather and perennials.
Truffaut	6 hectare	garden center and nursery, has a botanical focus and offers no less than 800 specimens of trees, shrubs, conifers, old roses, bamboo and grasses, climbing plants, heather and perennials.
Au Jardin d'Edgar	6 hectare	garden center and nursery, growing and selling one of the largest selections of unusual and hardy plants of excellent quality

Source: generated by the author

The range often changes depending on the season. For example, in spring, seedlings and flowers for planting predominate, in summer, garden furniture and decor, in autumn, bulbs and plants for autumn planting, and in winter, New Year's goods and Christmas decorations. Trends and features. Ecology and sustainable development there is a growing interest in environmentally friendly plants,

organic fertilizers and plant protection products. Many garden centers promote products grown in compliance with environmental standards. The growth of popularity of indoor plants as in recent years there has been a significant increase in interest in indoor plants, which has led to an expansion of the range and the creation of special areas in garden centers. Online sales many garden centers are actively developing their online platforms for selling plants and related products, and also offer delivery services. Customer orientation garden centers strive to create a comfortable and attractive atmosphere for buyers, providing quality advice and a wide selection of products. Integration with the local community some garden centers cooperate with local farmers and producers, offering products of local origin. Educational events: Many garden centers hold workshops, lectures, and other educational gardening events to engage customers and raise their awareness.

The characteristics of garden centers and nurseries on the French Riviera include the creation of an extensive network of both private nurseries and those owned by municipalities [5, 9, 10], the use of the latest technologies for propagation and cultivation of planting material with unusual shapes, colors, and aromas, increased use of container cultivation [8, 9], and the cultivation of environmentally friendly plants without the use of harmful chemicals [5, 11].

It is advisable to consider innovative technologies used for growing cut flowers in garden centers in France. Hydroponics is actively applied, which involves growing plants without using soil, but in a nutrient solution, with the plant roots constantly in water enriched with necessary minerals. Aeroponics is an even more modern technology, where plant roots are suspended in the air, and nutrients are supplied in the form of a fine mist. The advantages of these methods are higher yields due to rapid growth and a large number of flowers that have brighter colors and last longer with less water usage than traditional cultivation, and the possibility of cultivation in any conditions.

The implementation of artificial LED lighting systems, which provide the optimal light spectrum for plant growth, allows for regulating the duration of day and night and stimulating flowering. Special lamps emit the light necessary for photosynthesis. The advantages are independence from natural light and energy savings.

Garden centers actively use climate control systems as automated systems ensure optimal temperature, humidity, and CO2 levels in greenhouses. Sensors constantly monitor growing conditions and transmit data to a computer for analysis and adjustment, creating ideal conditions for plant growth to obtain high-quality products, and optimal conditions hinder the development of diseases and pests.

France is known for the development of new varieties through genetic modification, i.e., creating new varieties with desired characteristics such as disease resistance, long shelf life, and bright colors. Traditional breeding contributes to the expansion of the assortment of new varieties with unusual shapes, colors, and aromas, which are more resistant to diseases and pests and have a longer shelf life. Other modern technologies include robotic systems for performing routine operations such as planting plants, harvesting, and packaging. Dosing fertilizer systems ensure precise fertilizer application, which allows for reducing costs and decreasing environmental pollution. Biological protection systems utilize beneficial insects and microorganisms to combat pests and diseases. The use of modern technologies allows for increasing the efficiency of flower production, improving their quality, and expanding the assortment. This, in turn, allows for meeting the growing consumer demand for fresh and beautiful flowers.

The French ornamental planting material market is dynamic and promising. It is characterized by high-quality standards, a diverse assortment, and a constant search for new solutions. Understanding the features of this market is important for producers, sellers, and all those interested in ornamental gardening. French flower nurseries are industry leaders due to their traditions, innovations, and high product quality. They play an important role in shaping global trends in floriculture and provide us with a variety and beauty of plants.

Foreign experience in horticulture planning demonstrates a variety of approaches that take into account both natural and climatic conditions, as well as economic and social needs.

Table 2. The following key trends are observed in countries with developed horticulture

The use of modern technologies:	The introduction of precision agriculture, including GPS navigation, remote sensing, automated irrigation and fertilizer application systems, allows you to optimize resource consumption and increase yields.
Breeding and introduction of new varieties:	Countries with developed horticulture are actively investing in scientific research and breeding new varieties of fruit and vegetable crops, characterized by high yields, resistance to diseases and pests, as well as improved consumer qualities.
Organization of production and logistics:	In many countries, great attention is paid to the organization of cooperatives and producer associations, which contributes to the consolidation of efforts, improving access to sales markets and optimizing logistics processes. European countries, such as Italy and Spain, have developed cooperative systems that ensure effective sales of products.
Sustainable gardening and environmental safety:	In many countries, there is a trend towards the implementation of sustainable gardening practices aimed at minimizing the negative impact on the environment. This includes the use of organic fertilizers, biological methods of pest control, as well as optimizing water consumption.
Production diversification and niche crops:	In many countries, farmers diversify their production, growing not only traditional crops, but also niche crops that are in high demand in local or export markets. This allows reducing risks and increasing profitability.
Government support and regulation:	In many developed countries, the government provides support to the horticultural industry through financial programs, advisory services, and regulatory mechanisms aimed at improving product quality and protecting the interests of producers.

France, as a country with rich floristic traditions, offers a wide range of cut flowers. The classification of this variety can be carried out according to various criteria: seasonality, color, shape, purpose and other characteristics.

The classification of ornamental plants is often based on the conditions of their cultivation. One of the main criteria is the place of cultivation. Thus, plants are divided into those that can grow and develop in open ground without additional shelter, and those that require protected conditions of greenhouses (closed ground). The latter are not able to survive in winter conditions of open ground. Since the horticultural enterprises of France include the cultivation of flowers of mixed conditions, it is advisable to consider the appropriate classification.

The next step is to consider the factors influencing the assortment of a garden company in Europe, which are a set of interrelated factors that determine which plants, goods and services will be offered to customers. These factors can be divided into several main categories.

1. Consumer demand and market trends. The demand for certain types of plants and related products varies significantly depending on the season. For example, in spring, demand increases for seedlings and flowers for planting, in summer - for garden furniture and lawn care products, in autumn - for bulbs and plants for autumn planting, in winter - for New Year's products and products for protecting plants from frost. Fashion trends in gardening and landscape design, such as changes in gardening styles, the popularity of certain types of plants (for example, succulents, herbs, roses of certain varieties), as well as trends in the design of garden plots, affect the assortment. The level of income of the population and the purchasing power, i.e. the economic situation in the region, affect the willingness of consumers to spend money on garden products. During periods of economic growth, the demand for more expensive and exclusive products may increase. The age, family composition, lifestyle of consumers affect their needs and preferences. For example, young families may be interested in easy-to-care plants for apartments and balconies, while older people may prefer

traditional garden crops. The demand for organic fertilizers, biological plant protection products and plants grown without the use of chemicals is growing.

2. Climatic and geographical conditions. Climatic conditions (temperature, rainfall, length of daylight hours) significantly affect the choice of plants that can be successfully grown and sold in a particular region of Europe. The characteristics of the soil in a particular region may limit the choice of plants that will grow well in local conditions. Certain local plant species or traditional garden crops may be popular in some regions.

3. Suppliers and logistics. The range depends on what plants are available from suppliers (nurseries, seed producers, importers). The cost and complexity of delivering plants can influence the choice of range, especially for exotic or sensitive species. Suppliers also have seasonality in the production and supply of plants.

4. Internal factors of the garden enterprise. Large chain garden centers can afford a wider range, while small specialized nurseries can focus on certain types of plants. The amount of investment in the purchase of goods, storage and marketing affects the breadth and depth of the range. The knowledge and experience of employees in the field of horticulture can affect the choice and quality of the range presented. Determining the target audience and positioning in the market affects the formation of the range. For example, the enterprise can focus on the elite segment or on the mass consumer. If the garden center offers landscape design services or consulting, this can affect the range of plants offered for sale.

5. Regulatory and legal aspects. The presence of certain quarantine restrictions or requirements for the quality of planting material may affect the choice of plant species that can be implemented. Legislative restrictions on the use of certain plant protection products or requirements for the environmental friendliness of products may affect the assortment. All these factors interact and influence each other, forming a complex decision-making process regarding the assortment of goods in European horticultural enterprises. A successful horticultural enterprise must carefully analyze these factors in order to offer its customers a relevant, sought-after and competitive assortment.

The problems of the ornamental plant market in Europe are multifaceted and include both economic and environmental, social and technological aspects. Here are the main ones:

1. Competition and pricing. High competition as the ornamental plant market is very competitive, both between local producers and with importers from other countries (in particular, from countries with lower production costs). This can lead to pressure on prices and reduced profitability for European producers. Price volatility prices for ornamental plants can fluctuate significantly depending on seasonality, weather conditions, holiday periods and other factors, which makes planning and forecasting difficult for companies.

2. Production challenges. High production costs, i.e. costs for labor, energy, fertilizers, plant protection products and other resources in Europe are relatively high, which affects the cost of production. Dependence on weather conditions as plant cultivation is dependent on climatic conditions, which can lead to crop losses due to adverse weather conditions (droughts, frosts, strong winds, etc.). The spread of diseases and pests can cause significant losses to producers, requiring additional costs to combat them. In some regions of Europe, there is a shortage of qualified workers for horticulture.

3. Environmental problems and sustainable development. Use of pesticides and environmental pollution as traditional cultivation methods may involve the use of chemical plant protection products, which can have a negative impact on the environment and the health of consumers. Water consumption: Plant cultivation requires significant amounts of water, which can be problematic in arid regions or with limited water resources. The problem of disposing of waste from the production and sale of plants (e.g. plastic pots) is relevant. Significant volumes of imports and exports of ornamental plants lead to increased greenhouse gas emissions.

4. Changes in consumer preferences. Growing demand for environmentally friendly products, i.e. consumers are increasingly interested in plants grown in compliance with environmental

standards and without the use of chemicals. Changing trends in landscape design require the adaptation of the assortment to new trends in garden and interior design. Growth of online trade: Competition from online platforms can put pressure on traditional sales channels.

5. Logistics and storage. Transporting live plants requires special conditions and can be difficult and expensive. Limited shelf life ornamental plants have a limited shelf life, which requires fast sales and efficient logistics.

6. Regulatory regulation. Strict phytosanitary requirements and border controls can complicate the import and export of plants. Compliance with European environmental standards may require additional costs for producers.

7. Seasonality and dependence on holidays. The demand for ornamental plants is highly dependent on the season and holiday periods, which can lead to uneven utilization of production capacities and difficulties in planning.

8. Innovation and technology. The introduction of new cultivation technologies (e.g. hydroponics, aeroponics), automation and production management may require significant investments.

Solving these problems requires an integrated approach at the level of both individual enterprises and industry organizations and government authorities. This includes the introduction of environmentally friendly production methods, investments in innovation, optimization of logistics, adaptation to changing consumer preferences and support for the sustainable development of the industry.Table 3. with the production classification of cut flowers for Europe, which may include the main categories and some examples. It is worth noting that the classification may vary depending on the source and the purpose of the classification (e.g. for statistics, trade, scientific research). This table provides a general overview.

The European cut flower market is constantly changing, responding to current trends and consumer needs. Here are some of the main European trends and popular types of flowers. Roses remain classics and are still popular. A variety of colors and varieties allows you to create a variety of bouquets. Tulips are especially popular in spring, symbolizing freshness and renewal. A variety of colors and shapes make them universal for various compositions. Chrysanthemums are distinguished by their durability and variety of shapes. They are used both in monobouquets and in complex compositions. Lilies are exquisite and fragrant flowers that add elegance to any bouquet. Popular both in monobouquets and in combination with other flowers. Gerberas are bright and cheerful flowers that lift the mood. They are used to create cheerful bouquets. Alstroemerias are distinguished by their long-lasting freshness. Popular in assembled bouquets. Eustoma (lisianthus) has delicate, elegant flowers that resemble roses. Popular in wedding bouquets and romantic arrangements. These trends and types of flowers reflect the modern tastes and needs of European consumers, as well as the desire for sustainability and innovation in the floral industry.Let's consider step by step the characteristics and features of flowers grown by French garden enterprises. The entire species composition is represented by about 700 species, which are both sold and grown. But accordingly, the study will focus only on the main flowers of open ground, namely Sunflower *(Helianthus annuus),* Lavender (*Lavandula L.*), Peonies (*Paeonia L.*), Dahlias (Dahlia) and (*Antirrhinum majus*)

Dahlias a genus of about 40 species of flowering plants from the Asteraceae family, common in the high altitudes of Mexico and Central America. Approximately six species of the Dahlia genus have been bred for cultivation as ornamental flowers and are popular in the flower industry and gardens. Thousands of varieties of dahlias are classified into different types, including single, double, pompon, cactus, water lilies, peonies and table dahlias.

Table 3. Production classification of cut flowers for Europe

Category	**(Main Group) Subcategory**	**(Examples) Characteristics**	**Examples of Flowers**
Roses	Hybrid Tea	Most popular, large flowers on long stems, various colors.	*Red Naomi, Freedom, Explorer, Black Baccara*
	Spray Roses	Several flowers on one stem, smaller in size, often used in bouquets.	*Sweet Avalanche Spray, Pink Spray, Yellow Spray*
	Bush Roses	Flowers on shorter stems, often used for arrangements and decoration.	*(Various varieties, depending on the species)*
Chrysanthemums	(Single-headed)	various shapes and colors.	*Anastasia, Zembla, Baltica*
	Spray Chrysanthemums	Many smaller flowers on one stem, create voluminous compositions.	*Zembla Spray, Anastasia Spray, Spider Chrysanthemums*
Tulips	Single Early	Single goblet-shaped flowers, early flowering.	*Couleur Cardinal, White Prince*
	Double Early	Double flowers, early flowering.	*Monte Carlo, Abba*
	Triumph Most common,	various shapes and colors.	*Ile de France, Strong Gold*
	Darwin Hybrids	Large flowers on strong stems.	*Apeldoorn, Oxford*
Peony-flowered	Double flowers,	similar to peonies.	*Double Touch, Columbus*
	Lilies Asiatic	Various colors, often odorless, early flowering.	*Tiny Tim, Elodie*
	Oriental	Large flowers with strong aroma, later flowering.	*Casa Blanca, Stargazer*
	Trumpet	Large tubular flowers, strong aroma.	*Regale Lily, Golden Splendor*
Carnations (Carnations)	Standard Large	single flowers on a stem, various colors.	*White Liberty, Red Berlin*
	Spray Carnations	Many smaller flowers on one stem.	*Pink Spray, Yellow Spray*
Alstroemeria	Various colors and shapes of flowers, long shelf life.	Often used in bouquets and arrangements.	*Princess Lily, Inca Ice*
Gerbera	Large bright flowers, various colors and shapes.	Popular as single flowers and in bouquets.	*Festival, Spider Gerbera*
Irises	Various types and colors, elegant flowers	Often used in spring arrangements.	*Dutch Iris, Bearded Iris (if cut)*
Exotic flowers Orchids, Strelitzia, Protea and others.	Flowers with an unusual appearance,	often used in special arrangements.	*Phalaenopsis (as cut), Bird of Paradise, King Protea*

Dahlias are tuberous perennials, and most have simple leaves that are segmented and toothed or dissected. The compound flowers can be white, yellow, red, or purple. Wild dahlias have both disc and ray flowers in their flower heads, but many ornamental varieties, such as the common garden dahlia (D. bipinnata), have shortened ray flowers. Dahlias grow well in most garden soils. They begin flowering in late summer and continue flowering until frost breaks in the fall.

Biological classification:
Kingdom: Plantae
Division: Streptophyta
Superclass: Angiosperms (Magnoliophyta)
Class: Dicotyledoneae
Subclass: Asteridae
Order: Asterales
Family: Asteraceae
Genus: Dahlia

Fig. 1. *Dahlia*

Lavandula L. belongs to the family Lamiaceae, subfamily Lavanduloideae Briq., and includes about 30 species distributed from Macaronesia and the Mediterranean basin to India [1]. Lavandula is a strictly Mediterranean genus, with individual members found in the Arabian Peninsula, Socotra, Somalia and India.

Biological classification:
Kingdom: Plantae
Division: Angiosperms
Class: Eudicots
Subclass: Asteridae
Order: Labiatae
Family: Labiatae
Genus: Lavender
Species: Lavandula angustifolia (medicinal)

Fig 2. *Lavandula L*

This is an evergreen subshrub from 30 to 60 centimeters high. A characteristic feature of the plant is the high content of essential oil, especially in fresh inflorescences (0.8-1.6%). The leaves contain a slightly smaller amount of oil (0.3%). The main components of the essential oil are linalool esters (in particular, acetic, butyric, valeric and caproic), as well as other compounds such as geraniol, citral, borneol and amyl alcohol. The root system of lavender is represented by a woody root, which is significantly thickened in the upper part and densely covered with small roots. The root system penetrates deep into the soil, providing the plant with moisture and nutrients. The shoots of lavender are semi-woody, forming a spherical bush. The average lavender bush has about 400-500 such shoots.

The leaves are opposite, that is, arranged in pairs on the stem. They are sessile, that is, they do not have petioles, and fit tightly to the stem. The color of the leaves varies from dark green to light green, often with a grayish tint. The shape of the leaves is linear or lanceolate, narrowed at both ends. The edges of the leaves are slightly curved downwards. Lavender leaves are evergreen, that is, they remain on the plant throughout the year.

Peonies (Paeonia L.) are a genus of perennial herbaceous and shrubby plants of the Paeoniaceae family. These plants are known for their beauty and long flowering, which makes them one of the most beloved ornamental plants in gardens. Peonies (Paeonia L.) are a genus of perennial herbaceous and shrubby plants, which includes about 40 species.

Biological classification:
Kingdom: Plantae
Division: Tracheophyta
Class: Angiosperms
Clade: Eudicots
Subclass: Saxifragales
Family: Paeoniaceae
Raf.
Genus: Paeoni

Fig. 3. *Paeonia L.*

They are distinguished by a powerful root system, large pinnately dissected or palmately dissected leaves and large, bright single or collected in brush-shaped inflorescences flowers. The fruit of the peony is a many-leaved fruit. Herbaceous peonies annually shed the above-ground part, and tree-like ones have woody stems that do not die off for the winter. ITO hybrids combine the features of both groups, distinguished by large flowers of various colors.

Peonies are light-loving, prefer fertile, well-drained soils. They are valuable ornamental plants that are used for single plantings, creating flower arrangements and decorating gardens and parks.

Common sunflower (Helianthus annuus) or annual sunflower is a species of herbaceous plant that belongs to the Asteraceae family. Sunflower (Helianthus annuus) is an annual herbaceous plant of the Asteraceae family, distinguished by its powerful stem, large leaves and bright inflorescences-baskets. The stem of the sunflower is erect, branched in the upper part, reaches a height of 0.6 to 3 meters. It is covered with stiff hairs, which give the plant a rough appearance. The leaves are arranged alternately on the stem, have long petioles. The leaf blade is large, oval-cordate in shape, with a serrated edge. The upper surface of the leaf is rough, covered with short stiff hairs. The inflorescence is a basket, 30-50 cm in diameter. The marginal flowers are reedy, bright yellow, infertile. The central flowers are tubular, smaller, brownish-yellow, bisexual. An interesting feature of the sunflower is heliotropism - the ability of young inflorescences to turn after the sun during the day. The fruit is an achene that contains oil. The achenes have a variety of colors: from white to black, often with a characteristic striped pattern. Distribution and use: The common sunflower originates from North America, where it was cultivated by the Indians. It was brought to Europe by the Spanish conquistadors in the 16th century. Now the sunflower is widely cultivated as an oil crop around the world, including in Ukraine.

Biological classification:
Kingdom: Plantae
Division: Angiosperms
Class: Dicotyledons
Order: Asteraceae
Family: Asteraceae
Genus: Sunflower
Species: Sunflower

Fig. 4. *Helianthus annuus*

Antirrhinum majus is a flowering plant that belongs to the plantain family (Latin Plantaginaceae)

Biological classification:
Domain: Eukaryota
Kingdom: Plantae
Division: Streptophyta
— Vascular plants (Tracheophyta)
— Angiosperms (Magnoliophyta)
— Eudicots
Subclass: Asteridae
Order: Lamiales
Family: Plantaginaceae
Tribe: Antirrhineae
Genus: Antirrhinum
Species: Antirrhinum

Fig. 5. *Antirrhinum majus*

Antirrhinum majus is a bright representative of the family, originating from the warm regions of the Mediterranean, Asia and America. The unusual shape of the flower, resembling an open mouth, has earned the plant the popular name "dog". Although according to the biological classification, garden mouth is a perennial, in culture it is grown as an annual. The color of the flowers is extremely diverse: from white and yellow to rich burgundy and almost black. The only shades that are absent from the mouth palette are blue and blue. Garden mouth propagates by seeds. The optimal time for sowing seedlings is February-March. The seeds are distributed over the surface of a moist substrate, lightly sprinkled with a thin layer of soil, after which the container is covered with glass or film to

maintain high humidity. At a temperature of 20-22 °C, shoots appear within 10-14 days. For successful seed germination, it is important to ensure constant soil moisture. The grown seedlings are planted in open ground in the second half of May, maintaining a distance of 20-30 cm between plants. The optimum temperature for plant growth and development is 10-18 °C.

The flowering of garden marigold is long, begins in June and can continue until October. The life span of an individual flower reaches 12 days. Regular removal of faded inflorescences stimulates the formation of new buds and extends the flowering period.

Garden marigold is a universal plant for decorating flower arrangements. It is used to create flower beds, mixborders, group and mass plantings to form flower carpets, container compositions for decorating balconies, terraces and loggias.

In addition, garden marigold is a popular crop for cutting. Cut flowers stay fresh in a vase for a long time (7-14 days), which allows them to be used to create bouquets and floral arrangements.

Garden marigold is an unpretentious and grateful plant that will become a bright decoration of any garden. Due to the variety of varieties in color and long flowering period, garden marigold is an indispensable element in the design of flower beds.

Foreign experience in horticulture planning demonstrates the importance of an integrated approach, including the introduction of modern technologies, the selection of new varieties, the optimization of production and logistics processes, as well as the consideration of environmental aspects. Adaptation and implementation of best practices, taking into account the specific conditions of Ukraine, can significantly increase the efficiency and competitiveness of domestic horticulture, contributing to the provision of the population with quality products and the development of the industry's economy.

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