INFUSE

Seeding competences and harvesting work inclusiveness for autistic people

INFUSE TRAINING COURSE

Manual Guide for professionals on officinal herbs farming

infuseautism

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TUTTO VERDE
LE STAGIONI DEL VIVAIO

Autism Europe

Introduction

Only 15% of people with ASD have a full-time or part-time job, compared to 31% of people with other disabilities. In Italy, this percentage drops to 10%. This creates the need to support adults with autism through innovative educational approaches that improve the identification and screening of competences and the design of personalised pathways to work and social inclusion. The INFUSE project aims to develop effective orientation and motivation strategies for the implementation of an innovative best practice for a job placement pathway in the agricultural sector dedicated to adults with ASD.

The aim of this manual is therefore to improve the skills of therapists in order to increase the effectiveness of adult education by promoting more effective and innovative teaching methods in the field agricultural. The manual is dedicated to therapists and all professionals within the ASD treatment services. The manual will introduce the agricultural sector and explain its subcategories. It will also address more specific topics related to the world of agriculture and nurseries by explaining what a plant is, deepening its compotents and needs starting from the soil, up to the reproduction of the plant and the marketing of its products.

1. The agricultural sector

1.1. The agricultural sector and the related professions

The agricultural sector includes occupations engaged in agricultural and animal production, forestry and fishing, and production activities that process agricultural products.

Professionals working in Agriculture are therefore farmers and breeders, fishermen, agronomists and botanists, agricultural labourers and nurserymen. Jobs in Agriculture require very different skills: some professions require manual skills and the ability to use specific tools and machinery for agricultural work, while others are more technical professions and require academic training (e.g. in Agronomy, Animal Sciences, Botany). E.g. hoe, shovel, fork, tractor, shears,

The agricultural sector employs permanent and casual workers: the permanent labour force is mainly employed in the daily operations necessary for the smooth running of farms, stables and livestock farms, in food processing plants and in agro-technical research and development.

Occasional workers, on the other hand, are mostly seasonal farm labourers, required at times of high workload, e.g. for fruit and vegetable picking or grape harvesting.

There are a number of companies offering work in the agricultural sector, and they differ according to the type of crop they deal with.

- Fruit and vegetable farms
- Floriculture companies
- Oil farms and mills
- Livestock and animal breeding farms of all species
- Fish farms and other aquatic organisms (aquaculture)
- Wineries
- Mushroom farms
- Dairy companies
- Tobacco companies
- Wildlife and hunting farms
- Agritourism farms

- Service and research companies in agriculture
- Hydroponic cultivation companies.

Usually, workers working in farms are agricultural or floricultural workers, agricultural employees, as well as administrative staff.
Agricultural workers are also classified on the basis of 'professional areas':

Area 1a: Workers with qualifications or specific professional knowledge and skills enabling them to perform complex work or work requiring specific specialisation belong to this area.

Area 2a: This area includes workers who perform variable, non-complex executive tasks for the execution of which professional knowledge and skills - acquired through practice or by qualification - are required.

Area 3a: Workers capable of performing only general and simple tasks not requiring specific professional qualifications belong to this area.

1.2. Specific skills and knowledge in the agricultural sector

Here are some of the skills sought after in job offers in the agricultural sector:

- **Technical skills**

New technical applications in agriculture and animal husbandry are crucial for the future of the sector. For those running a farm, adopting innovative technologies and processes before others can provide a major competitive advantage. For agricultural workers, upgrading and learning how to use new machinery and tools allows them to retrain and remain active in the labour market.

- **Time Management/Time Management**

The ability to manage time and work effectively is indispensable: the daily activities required for work in the fields or on a farm cannot be postponed, because there are precise deadlines to be met. In addition, all processing and transport phases of food and livestock products also require careful planning.

- **Passion for the agro-technical sector**

Although science and technology have profoundly transformed the way people work, in agriculture, livestock breeding and fishing many activities are still in some respects manual: the work can be very demanding, requiring physical strength, endurance and the ability to

adapt to the rhythms of nature (animal and plant production cycles, changing seasons...). It is therefore essential to have passion and a strong motivation to work in agriculture.

2. The plants

Plants are living beings embedded within a system, which is the environment, composed of various elements (air, water, earth, animals, etc.).
The main parts of the plant are 6: root, stem, leaf, flower, inflorescence, fruit.
The three main organs are the root, stem and leaf, which have mainly nutritional functions. The flower, fruit and seed, on the other hand, have reproductive functions.

- **The root**

The root is the underground part of a plant. It not only supports the plant, anchoring it in the soil, but also supplies it with water and mineral elements, absorbing them from the earth. It also often stores them as a reserve (tap roots and fascicled roots).

- **The stem**

The stem is the support of the leaves and encloses the conducting vessels. It is the transit channel through which the nymph ascends to the leaves and descends to the root.

- **The leaf**

The leaf is a fundamental organ of plants and is generally green. Its main function is to fix carbon and expel excess water through transpiration.
The leaves also contain chlorophyll, which is indispensable for chlorophyll photosynthesis, a process that provides the plant with nourishment.

- **The flower**

The flower is a highly specialised bud. Of all the parts of the plant, it is the sexed organ, sometimes the only one capable of ensuring the reproduction and perpetuation of the species.

The complete anatomy of a flower includes the presence of a calyx, a corolla, stamens and a pistil. If even one of these elements is missing, its morphology is said to be incomplete. The flowers may be solitary or grouped in inflorescences of various shapes.

- **The inflorescence**

This term is used to denote a set of flowers supported by a single stalk.

- **The fruit**

The fruit is the final ripening of a fertilised ovary. It contains the ovules, which are transformed into seeds. The seeds can be planted and thus germinate a new plant, belonging to the same species.

2.1. Photosynthesis and respiration

Photosynthesis and respiration are the two most important chemical processes involved in plants.

Photosynthesis affects the aerial part of plants and thus their green part, while respiration affects every part of the plant. In photosynthesis, with the help of the sun, water absorbed from the soil and carbon dioxide absorbed from the air combine to form sugars and oxygen. The sugars are used to give energy to the plant or are composted as material for building new plant parts. The release of energy from sugars occurs through respiration, a chemical process in which sugars react with oxygen to release water, carbon dioxide and thus energy. Among the various processes that require energy from the plant is the uptake of water by the roots.

2.2. Classification

Plants in the same family tend to consume the same substances from the soil, and they also often share the same diseases and pests. This is why in crop rotation, rotating crops is an excellent criterion; avoiding repeating a plant from the same family in the same garden bed maintains fertility and prevents many diseases.
Plants are also classified according to their life cycle:

- **Annual Plants**

Annual plants are all those plants that have a life cycle that begins at the time of sowing and ends after flowering, generally producing new seeds. Plants that live one year (from spring to winter)

- **Biennial plants**

Biennial plants, on the other hand, are defined as those plants which, as we can deduce from their name, complete their life cycle in two years. Where in the first year they have a good vegetative development and in the second they complete with flowering. They also produce seeds for reproduction. At the end of the second year the plant dies.

- **Herbaceous Perennials**

Unlike the other two types I mentioned, herbaceous perennials are those plants that have a life cycle that lasts more than two years.
During the winter the aerial part dries up and therefore has to be cut off. Despite this, the plant is not dead. In fact, the root system lives on, sprouting new shoots in spring.
Herbaceous Perennials unlike Annuals and Biennials do not die, they enter a state called vegetative rest.

3. The Terrain

Planting a soil starts with the very fertility of the soil itself. Soil is a natural formation that affects the surface of our planet, which varies in thickness and originates from the crushing and chemical and biological decomposition of parent rock and residues from the presence of life. Soil therefore depends on parent rock, weathering and living, or no longer living, organisms. When we talk about soil at a technical agricultural level, we talk about soil structure, i.e. the ability a soil has to form aggregates (clods) between its component particles (sand, silt, clay, humus). A soil with a good structure should have small, mobile clods, criss-crossed by various channels (pores) evenly distributed between wide (macropores) and narrow (micropores) channels so that air (which contains oxygen) and water (which contains nutrients derived both from itself and from the soil in which it flows) can circulate in adequate quantities.

A good structure is restored either by certain tillage (de-compaction using flat-tine and curved-tine forks) or by taking advantage of the work of special 'soil specialists', i.e. soil organisms such as earthworms, millipedes, microorganisms, etc.) and roots.

It is useful to observe the soil to understand what type of structure it has, what shape the clods are, how moist the soil is, what colour and smell it has. It is also useful to assess whether hummus is present. Hummus is a complex of organic substances consisting of plant residues, faeces, dead animals, etc.

There are essentially 3 types of terrain:

- Clayey: Clayey soils are heavy or compact soils that are difficult to work, particularly when they are wet, retain water and careful tilling is required to prevent them from becoming compacted and creating waterlogging. The advantage is that it is highly fertile, it retains nutrients for a long time, and it has high water retention capacity.
- Flaws: it is a heavy soil type: it compacts very easily and is very tiring to work. When it rains, it easily forms stagnation, remains wet for a long time and is also muddy, so it is often too wet to work and can encourage fungal diseases.
- Loamy: Loamy soil is composed of particles of intermediate size. Being somewhere between sand and clay, silt in terms of oxygenation and drainage is a good compromise and unlike soil that is too loose, it manages to retain moisture and nutrients. On the other hand, it is easy to compact particularly on the surface; this asphyctic surface crust is very bad for vegetable plants and is prevented by frequent weeding.
- Sandy: Sand is the largest particle size that makes up the soil texture, thus resulting in a very loose soil. Sandy soils are soils with a high concentration of sand, generally poor in nutrients and poor at retaining water. They are easily worked but require frequent irrigation and sustained manuring is needed to bring in organic matter (compost can also be used as an alternative to manure). Organic matter has the role of mitigating the defects of sandy soil. The advantage is that it stays loose for a long time without compacting and is very easy to work, avoiding the need for frequent spading. If it rains, it drains excess water very well without stagnation and dries quickly. Its loose nature makes it excellent for root vegetables such as carrots and radishes.

4. Sowing and transplanting

By sowing, we mean the operation whereby seeds are buried in the correct quantity and at the correct depth to give rise to a new crop. The soil must be carefully prepared, particularly in the first few centimetres. The clods must be mobile, small and moist. If possible, water after sowing to make the seeds take root better and to reactivate the metabolism of the dormant seed. The top is to sow when the soil is at P 37 temperature. That is, when the soil moisture allows us to do the work with minimum effort and the best possible result: if the soil crumbles easily, it means it is in temperate (if it keeps its shape without crumbling it is too dry, if it changes its shape without crumbling it is too wet).

Seeding depth varies from species to species, but in general one puts the seed at a depth of three times the seed diameter.

Under certain conditions, it is preferred to plant the transplant directly into the soil, i.e. the seedling is a few weeks old and has already grown in a protected environment, e.g. in a nursery.

Everyone tends to transplant vegetables rather than sow them for various reasons:

1. Easier to manage pests
2. There are fewer failures, which depend on the germinability of the seed.
3. One can postpone the start of cultivation by a month and thus have more time to prepare the soil, etc.

5. Irrigation

Why is water indispensable for plants?

- First of all, water is the main component. Plants are generally 80-85% water by weight;
- The plant is a collection of various organs (roots, stem, leaves...) organs are made of tissues, tissues of cells, newly born cells can only increase in size if adequately supplied with water;
- Plant metabolism is regulated by chemical reactions that take place in an aqueous environment;
- Soil microorganisms can only transform fertilisers and crop residues into humus and nutrients in the presence of water

- In the soil, the roots absorb the nutrients dissolved in water and always dissolved nutrients flow into the plant;
- Within the plant, water is necessary for photosynthesis: water+carbon dioxide+solar energy>>>sugar+oxygen;
- An abundant supply of water is necessary for transpiration, which occurs especially in the leaves.

How should one irrigate?

- Drip: through perforated hoses and drip wings, less water is wasted. It is compatible with any type of mulch and helps control weeds because you do not irrigate the entire surface, but only where you need to.
- Sprinkling: commonly used in family gardens but very water-intensive but the most natural way, it hydrates evenly and benefits all the organisms that populate our soil. If we have mulched our soil with tarpaulins, it will be useless to irrigate by sprinkling. However, there are other forms of mulch (straw or dry grass, bark, cardboard and newspaper sheets, dry leaves).

When should you irrigate?

It is during the day that plants should never lack water. Therefore, it is advisable to irrigate the soil during the following moments of the day:

- Evening or night watering: it minimises water loss and in the morning the soil will be nice and moist but there is more risk of infection by certain fungal species, parasites and bacteria. It is therefore better not to irrigate by sprinkling as the vegetation will remain wet all night;
- Early morning irrigation: this can be either sprinkler or drip wings;
- Irrigation in the late daytime (late morning, noon, afternoon) whichever method of irrigation one chooses does not create disease problems but the water evaporates too quickly, risk of burns, and especially arrives late for photosynthesis, hours of work lost for the plant.

How much should you irrigate?

It depends on various factors:

- water retention capacity of the soil (higher where there is clay and humus and lower in sandy soil);
- air temperature;
- windiness;
- rainfall,
- development of the roots (they usually develop between 0 and 20-30 cm deep) and the size of the plant (aerial part).

What happens if too much water is given?

Too much water can cause root rot, asphyxia, disease, difficulty in absorbing water and thus nutrients.

What happens if too little water is given?

Too little water can lead to water stress, that can be recognized when:

1. The plant begins to produce smaller leaves;
2. It invests energy in building new roots;
3. It wilts the leaves so that they do not get any sunlight, or bends them into a spoon for the same reason.

6. The Drying process

Drying is a simple but extremely delicate process, as specific precautions must be observed in order to obtain a quality product. One must proceed in order to remove the moisture from the plant. Generally, the amount of water to be removed through drying corresponds to 70-75% of the weight of the fresh plant. Plant material is correctly dried when it contains less than 5% water by weight.

Drying can be done naturally, using the natural heat of the air, or artificially using heated, conditioned air and dehumidifiers.

- Natural drying: In natural drying, the plants are placed on special frames or wooden boxes with absorbent paper on the bottom, both covered with a mosquito net to protect the material from insects and dust. If whole plants are collected, they can be

tied in bunches and hung from the ceiling. Large, well-ventilated covered spaces (e.g. barnyards, courtyards, etc.) that are not exposed to direct sunlight are necessary: high temperatures would lead to the degradation of thermolabile or particularly volatile active ingredients (e.g. plants rich in essential oils) and thus to a loss of product quality. With the natural method, the drying time is very long (about 10-15 days) depending on the weather conditions. One can easily run the risk of the herbs undergoing fermentation during the drying time. Such drying is not recommended in humid-temperate environments.

- Artificial drying: In artificial drying, solutions are adopted that considerably alter the ability of the air to remove moisture from the product. The air is generally heated to an appropriate temperature so as to ensure drying in a short time, but at the same time not deteriorating the quality of the plant. It is possible to carry out artificial drying by placing dehumidifiers in an enclosed space or by means of specific dryers (thermostatic stove, stacked box, cell type). To ensure that the herb is really dry after drying, it is recommended to break the product (leaf or branch or root) and check the inner parts, which should appear dry. If they pulverise, it means they have been over-dried. For good drying, it is necessary to choose an environment protected from dust and the sun. After harvesting the spice, arrange it on grids in an orderly manner without overlapping them. Then place the grids inside the dryer and set it at 35 degrees, the higher the heat the lower the quality of the spice. The drying process varies depending on the humidity and the type of plant. The process takes approximately 24 to 48 hours.

7. The aromatic and medical plants

In general, aromatic and medicinal plants are fairly easy to grow adaptable to climate and soil, they do not present major pest problems and are not susceptible to disease. They require moderate fertilisation, particularly the perennial species.

From a cultivation point of view, we can divide herbs into two macro categories: there are plants that die at the end of their annual cycle and have to be reseeded every year, while other crops are perennial and are maintained from year to year with little care.

Many herbs also have important medicinal properties and healing effects, so learning to use herbs can have a good effect on health.

The properties of herbs have been known and used since ancient times, when wise people knew which plants to use as remedies for various ailments of the body. Aromatics are often used to make decoctions or infusions to exploit their benefits; if you want to make the most of their properties, the essential oils must be extracted.

The aim of this manual is to impart basic knowledge on the care, cultivation and main uses of certain medicinal herbs.

1. Lavender

1.1 Introduction

The term lavender is derived from the verb 'to wash', the plant owes its name to its good scent: being used in soaps or to perfume drawers it is typically associated with the idea of good and clean. When it blooms in the garden, it is an explosion of colour and its delicious aroma wafts through the air.
The lavender bush beautifies the environment but is not merely ornamental: it is a very useful plant and brings many benefits to the garden, attracting useful insects and lending itself to various uses, from cooking to decoration.

1.2 Climate

Lavender is a very heat and aridity resistant plant, withstands dry summers, does well in sunny locations and likes wind. There are varieties that also have good cold resistance and are therefore suitable for cultivation throughout Italy, both in Mediterranean and northern areas.

1.3 Soil and fertilization

This plant seeks light soils without waterlogging, it also thrives well on arid and stony soils that are predominantly calcareous and not very acid. It is a very modest herbaceous plant in terms of nutrient demand, so fertilization at planting time can be avoided. Since it is

perennial, however, it is good practice to renew the organic substance with periodic, moderate inputs of compost or mature manure.

1.4 Propagation

To start cultivating, we need to obtain lavender seedlings: we can do this from seed, with a cutting from an existing plant, or of course by buying ready-made seedlings from the nursery to transplant.

Propagating lavender from seed is not very easy: it is a cultivar that requires special conditions to germinate and has difficult seeds to germinate. For this reason, the advice is to avoid growing from seed and buy an already formed seedling or reproduce it by cuttings.

With a little patience, one can still choose to search for lavender seeds or reproduce them oneself. The best method is to put the seeds in the refrigerator for two months to simulate winter, then from the end of February we can proceed with sowing them in the seedbed, remembering that germination times are long.

Propagation by cuttings are a technique that allows the plant to reproduce from the branch of a mother plant; it is best to do this in spring (approximately in April). Lavender is very easy to root in cuttings: the branch to be chosen must be at least 10 cm long and with at least three leaves (preferably 5), chosen from the side ones without flowers. After cutting the sprig, the leaves must be peeled off and it must be placed in a pot with soil mixed with sand. It is necessary to water it regularly, as good moisture is needed for it to take root. Within a year you have a lavender seedling ready for transplanting.

1.5 Planting

After buying or propagating the lavender plant comes the time to plant it in the field, a very simple operation. There is no real planting pattern for lavender, it depends on the type of bed you wish to create. In any case, one must bear in mind that it is an expanding plant and therefore it is advisable to keep a minimum of half a metre between plants.

1.6 Crop care

Lavender is a very easy species to grow in soil and can also be managed in pots on the balcony. A simple lavender bed to perfume and brighten up a border can be kept even without care, whereas growing lavender for professional purposes requires more care. Among the enemies of this crop is the chrysolin americana, a metallic beetle that particularly likes lavender

flowers. Lavender is a plant that is not particularly afraid of drought. For this reason, it should only be watered when the soil is very dry and in any case not over watered. In most climates, lavender plants can stay in the garden or vegetable garden even without ever being watered, being content with seasonal rainfall. The lavender plant does not need mulching, as it is herbaceous and easily colonises the entire dedicated flowerbed, and its dense vegetation does not leave much room for weeds. Therefore, weed control on already formed lavender bushes is simple and requires very little intervention.

1.7 Pruning

Lavender must be cut back every year, pruning is the only really important cultivation operation if one wants to keep this aromatic in the garden. The purpose of pruning lavender is manifold:

- Keep the bush tidy.
- Keeping the plant young by preventing it from lignifying
- Stimulating flower production.

The correct time to prune this medicinal plant is at the end of summer, once flowering is over. If necessary, a second pruning can also be carried out in early spring (by the end of March) to adjust the flower bed.

When pruning this medicinal plant, the first operation to be done is a topping by cutting just below the flower, thus keeping the bush at an even height. We then proceed by thinning the stems to encourage aeration and removing the parts of the plant that expand out of their boundaries at the base.

1.8 Collection

It is very easy to know when to harvest lavender: since the flowers of this aromatic are used, the right time is when the flower spikes begin to form, which happens in summer. To harvest, the stems are cut, preferably using scissors and without tearing.

1.9 Uses of lavender

Lavender is generally used for perfuming, especially in clothes and laundry drawers: you can make little bags by putting the dried flowers in small canvas bags. It can be a great way to recycle the confetti bags that accompany wedding favours.

For medicinal, cosmetic and general uses to extract perfume, essential oil is extracted from lavender; due to its complexity and the need for specific equipment, it is a process that is carried out by professional growers. Lavender is attributed with disinfectant properties and benefits for the respiratory system, while in aromatherapy it is used against stress and to relax. Although not often used as an aromatic herb, lavender has many culinary applications, we find it mainly present in dried Provençal flavouring mixtures. The dried flowers can be used in desserts, cheese sauces, jams and risottos. Mixing lavender and coarse salt produces a flavoured salt that goes well with meat. An interesting application is to put lavender in the dough of baked goods to make fragrant loaves or biscuits. Vinegar and wine can also be flavored.

2. Sage

2.1. Introduction

It is a perennial species, which reaches a height of about half a metre and can then spread to form a beautiful evergreen bush. In early summer it issues plume-like flower spikes, the small petals are purple or lilac in colour.

2.2. Climate

Sage is a heat-loving plant and prefers sunny locations. Although it prefers mild climates, it is a very frost-resistant plant, although it does not tolerate it for long periods. This aromatic plant is not afraid of drought, but may have problems if there is prolonged soil or air humidity.

2.3. Soil and fertilization

This aromatic plant adapts to all types of soil, true to its Mediterranean origins, suffering only from water stagnation and too compact, clayey soil. It does particularly well on calcareous substrate.

2.4. Propagation

A new sage officinalis plant can arise in two ways: from seed or by multiplication by cuttings. Birth from seed is a slow operation, while the cuttings method is much easier, so it is generally preferred. Alternatively, we can also uproot a plant and divide the head into several parts. Sage cuttings are taken from spring, at which time we cut a branch from the mother plant, choosing a fairly young one, from which we take a length of at least 10 cm. We prepare our sprig by peeling the lower end from the leaves, leaving only the 4 highest leaves.
All that remains now is to plant the end in a pot of soil mixed with sand, taking care to water often, never allowing the soil to dry out. The sprig taken in March will probably be a seedling ready for transplanting as early as May.

2.5. Planting

The period in which to transplant is very broad: we can plant sage officinalis seedlings throughout the year, except for the winter months when the ground is particularly frozen.
If you want to start a professional aromatic cultivation and thus produce on a larger scale, consider keeping a planting spacing of about 40 cm between plants and 70 cm between rows. After transplanting, remember to water, continuing to water regularly on the following days until the plant takes root.
In winter, it is advisable to protect the root system of this medicinal plant with a mulch of straw or non-woven fabric to protect the roots from frost.

2.6. Crop care

Sage is a hardy plant and not prone to problems of any kind, however, let us learn which insects and diseases can damage this medicinal crop. The most frequent enemy of this aromatic plant is aphids, which can infest the plant. In this case, action is taken with nettle macerate or with Marseille soap. If one is forced to use more drastic organic insecticides, such as pyrethrumone must then observe the deficiency period and give up the use of sage for a few weeks. We try to avoid it if possible, since although it is organic, it is not free of ecological drawbacks, such as killing bees and other useful insects.
The sage leafhopper can also affect sage plants; it is combated with the same products we use against aphids. The most common disease found on sage plants is white blight or sage

powdery mildew, which gardeners are familiar with as one of the most annoying problems of squash and courgettes. The disease is fungal in nature and can be recognised by the white, powdery patches that can be seen forming on the leaves.

In organic farming, prevention of the problem is preferred, which simply consists of managing the soil and pruning in such a way that there is no water stagnation and that there is an air circulation within the bush. A mild remedy against powdery mildew is sodium bicarbonatewhich should, however, be used with moderation, as it can change the pH of the soil. If, on the other hand, a more vigorous measure is required, use sulphur.

2.7. Pruning

Like many perennial plants, it is useful to periodically prune the plant. Sage should be pruned twice a year. Before spring, dry branches and leaves are removed, while at the end of flowering it is pruned more decisively, removing most of the green branches. In this way, the shrub is cleaned out and kept healthy and productive. Sage branches are cut with a well-sharpened shear.

2.8. Collection

Sage leaves can be harvested throughout the year, as they are always green and their aroma is available even during winter, unlike other plants such as mint and basil, which have a much more variable concentration of aromatic oils depending on the season and do not resist cold periods. If necessary, therefore, it is enough to pull off the leaves that are needed; the advice is not to pull off the lignified branches instead, because they are slower to reform.

2.9. Uses and properties

Sage has been known since antiquity as a medicinal plant for its alleged medicinal properties, its scientific name in fact being salvia officinalis, and it is no coincidence that the term 'sage' derives from the Latin salvatrix, or salubrious. The qualities attributed to it are anti-inflammatory, digestive, healing and bactericidal.

3. Rosmary

2.1 Introduction

Rosemary (rosmarinus officinalis) is an evergreen perennial shrub that forms neat little bushes. I rosemary flowers between white and purple appear in spring and are edible like the leaves

2.2 Climate

Rosemary is a Mediterranean plant, it likes warmth and good sun exposure. However, it also adapts well to being kept in half-shade and is resistant to cold; it can also be grown in the mountains. It can be damaged by long-term frosts.

2.3 Soil and fertilization

This is a very adaptable cultivation, which prefers dry, loose soil and is not particularly afraid of drought. A sandy soil that drains well is therefore good, there is no need for a lot of organic matter, but it is important that the soil in which this aromatic herb is grown is not too wet. If you want to grow rosemary in a very compact, clayey soil, it is better to mix in a little sand before planting to make the soil lighter and more draining.

2.4Propagation

The evergreen rosemary plant can be sown in various ways: from seed but also by cuttings or offshoots. Multiplying rosemary plants is very simple, simply take a sprig of about 10/15 cm from an existing plant, best chosen at the bottom of the plant, as close to the roots as possible. Then remove the leaves, leaving them only on the top, and peel back a little of the bark at the base of the sprig, where it should take root. Wait until the roots appear by leaving the sprig in water (3 -7 days) and then plant it in a pot. Once the rosemary seedling is obtained, it can be transplanted in the open field, or it can be transferred into a pot.

2.5 Planting

Rosemary is a bushy shrub, generally only one plant is put in the home garden, which should be enough to meet the family's needs for this spice. If you want to grow rosemary by putting more than one plant, it is best to keep 50/70 cm between each bush. Flower beds or small rosemary hedges can also be created in the garden.

2.6 Crop care

Medicinal rosemary is one of the easiest plants to grow in the garden: being perennial, it does not need to be sown every year and consequently occupies a permanent place. It requires very little care. The plant is always green, but stops growing in excessive heat (summering) if grown in warm areas or during the winter where the climate is harsher.

Rosemary loves dry climates and is often content with moisture in the air. It requires constant watering during its first year of life, after which it is only watered in periods of heat and aridity and in any case very sparingly. In any case, the plant should never be over-watered to avoid root rot. A supply of nutrients once or twice a year can help, favouring slow-release fertilisers (not liquid fertilisers). The supply of nitrogen e potassium is useful to encourage flowering. Rosemary is not very afraid of adversity; if one avoids waterlogging that causes root rot, one is unlikely to experience problems. Insects include a small metallic green beetle attracted to rosemary flowers and leaves, the rosemary chrysolin (chrysolin americana).

2.7 Pruning

No special pruning is required for the rosemary plant, the branches can be cut back to adjust the size of the shrub. This plant does not particularly suffer when pruned.

2.8 Collection

This aromatic herb is harvested when needed, by cutting the tops off the branches of the plant. Rosemary can be harvested all year round, even during flowering (the flowers themselves are edible). Harvesting also serves to maintain the size of the plant and to stimulate sprouting.

2.9 Uses and properties

Being an evergreen aromatic, storage is not a problem for those who grow rosemary in the garden or in pots. Whenever needed, one can take a sprig of rosemary and use it directly in the kitchen. However, it is possible to dry this spice, which retains its aroma quite well. Chopping dried rosemary together with other spices and salt can make an excellent seasoning for roasts, meat and fish.
Rosemary is a medicinal plant that contains essential oils in its leaves and has properties beneficial to the body. In particular, this spice, like several other aromatic herbs, is said to have excellent digestive properties and a generally beneficial effect on the gastrointestinal

system. It is also said to have an invigorating action, deodorant properties and to promote diuresis, among other benefits.

4. Thyme

4.1. Introduction

A very undemanding crop in terms of soil, watering and climate, it is really suitable for cultivation even by beginners and is very well suited to an organic method. Its resistance to cold makes thyme a viable cultivation even in mountain gardens. Thyme is a perennial species, so once planted or sown in the garden we can keep it for several years.

4.2. Climate

Thyme loves the sun and tolerates heat and drought. It also grows in half-shade but with less intense flowering. It also tolerates low temperatures, but not periods of prolonged frost.

4.3. Soil and fertilization

Thyme is not demanding in terms of nutrients, it is content with poor soils. It prefers draining, non-clayey soil, as it is easily susceptible to mould in the event of excessive moisture.

4.4. Propagation

Propagation by seed: When propagating by seed it is necessary to operate in spring; sowing in March if sowing indoors and in May outdoors. Before sowing, the soil must be prepared; sowing should be done fairly shallowly, so the seeds should be covered with a little soil as they need light. Watering should be done lightly and preferably with a sprayer only to keep the substrate moist.

Propagation by cuttings: The technique of propagation by cuttings can be carried out either in April-May or August or even September-October. It is advisable to take cuttings from already lignified twigs that can be planted directly or after rooting in pots. Here too, it is important for optimum rooting to spray the cuttings and substrate with water and shade in the first rooting phase.

Propagation by division: Propagation by division of heads should be carried out in the spring or autumn: in this case, a well-tended plant must be chosen by dividing it with a small hoe, taking care not to cut the roots.

The heads taken in this way should be placed to root in the same way as cuttings, using the same watering and shading measures as described above. In this case it is important that a light compaction of the soil is carried out around the head so as not to damage the root parts.

4.5. Planting

In case you want to put more plants for the purpose of income production better spaced about 30 cm between them and keep 70/80 cm between the rows.

4.6. Crop Care

Growing thyme in the vegetable garden is not difficult and this crop can also be grown in pots on terraces or windowsills. As far as weeds are concerned, there is little work to be done, as the very dense bush discourages the growth of wild species in the space of this aromatic.
As for watering, the plant does not create much work either: Thyme does not need to be watered except in cases of extreme drought or when the seedling is very young. A straw mulch can benefit in arid climates by helping to decrease water transpiration from the soil.
Thyme fears water stagnation, which causes mould and root rot in the plant; these kinds of diseases can be avoided without treatment but simply by prevention, i.e. by ensuring that the soil is draining. Apart from the question of rot, the thyme plant is not very prone to phytosanitary problems and is a fairly easy crop to keep under organic farming. This officinal attracts many insects, both useful for the garden such as the ladybirds as well as undesirable ones, particularly when its flowers sprout. In a natural cultivation context this is however considered a merit because biodiversity is an important source of balance. As pests that attack thyme we pay attention to the chrysomela (chrysolin americana)

4.7. Pruning

Thyme is a hardy plant, which tolerates cutting well; the twigs are usually cut off for harvest, but an annual pruning adjustment may be necessary in order to keep the bush of this plant sized.
The only caution to be taken when pruning is to make cuts with appropriate scissors that ensure a clean, clean cut.

4.8. Collection

Thyme is simple and does not require much effort; on the other hand, we can harvest it practically all year round.

The small leaves are used in cooking, so we can harvest them by cutting the whole twigs with a shear. It is always best to harvest at the time of use, so as to preserve the aroma and nutritional qualities contained in the plant. After harvesting, they tend to shrivel up in a few days, but you can always opt for drying.

4.9. Uses and properties

This medicinal plant is attributed with balsamic and antiseptic properties, it also contains a good amount of vitamins, and for these uses the essential oil must be extracted from the plant. Thyme infusion is instead used as a digestive aid.

Thyme in cooking. Numerous recipes can be enhanced by using thyme as an aromatic herb. Dried thyme leaves are an interesting spice to use to flavour meat, soups, omelettes or other dishes.

5. Oregano

5.1. Introduction

Cultivation of oregano is very simple, both in the field and in pots. The plant is easily reproduced either by seed or by cuttings; it is also a perennial plant.

It is found in tufts growing from a well-rooted underground rhizome, capable of withstanding dryness. It has an erect stem reaching up to 80 cm in height and can be pruned as required.

5.2. Climate

To a certain extent it even tolerates frost, although intense cold can kill the plants. In the vegetable garden it particularly likes sunny beds. In particular, sun, heat and wind affect the plant's aroma; the tastiest oregano is that which is cultivated and harvested in areas close to the sea.

5.3. Soil and fertilization

Oregano requires nothing special as a soil: it tolerates even poor soils and resists water scarcity. One really important thing is that there is no water stagnation, which would cause the rhizome to rot, leading to the plant's death. Before planting oregano, the soil should be tilled well to ensure drainage.

5.4. Propagation

Oregano propagates by seed, by cutting, by offshoot and by division of head. Sowing can be carried out in February-March in small chests or in beds heated in greenhouses; the young seedlings will then be planted at the beginning of May. Sowing can also be done directly in the field in April, taking care to carry out a thinning of the seedlings too dense. For the autumn transplant, the sowings are done in June-July in alveolar containers or in shaded seedbeds and one gram of seed is enough for a square meter of surface. In April-May 7-8 cm long cuttings are taken from the non-flowering basal shoots and planted in caisson, containing a mixture of peat and sand in equal parts; when these have rooted they are planted permanently.

The division of head is a practice not available for an industrial cultivation; it is however significant, because it gives rise to progeny completely identical to the plant from which the propagation material was taken.

5.5. Planting

The transplanting of oregano should be done when the climate is permanently temperate, so usually in April or May.

The sixth planting is composed of 60-70 cm between rows and 20-30 cm on the row and the optimal density is 6-8 plants per sq m. The distances between the rows must be related to the size of the small machines available in the company and used for processing.

5.6. Crop care

When cultivating oregano, it is important to check that weeds do not bother the plant too much. Protecting it from winter frost can be done with non-woven covers and a good mulching. Like many medicinal plants, oregano has few pests that can bother it; among the insects it can suffer the attack of aphids, also favoured by the presence of ants. There is no need to prune the oregano, simply remove the dry branches. Oregano also thrives well in poor soil, which is why it does not require rich fertilisation and is content with the fertility it finds in the soil. In the long term, as it is a multi-annual plant, light maintenance fertilisation is recommended. This can be done every year, perhaps after the harvest.

5.7. Pruning

Harvesting the leaves and flower panicles can be done at any time, you can take only a few leaves or choose to cut off the whole stem, it is best to do this after flowering.

5.8. Collection

During the first year of cultivation a single harvest is obtained, while, starting from the second year, two cuttings are carried out on average, one in July and one in September-October. Oregano is cut in bloom just before the flowers themselves hatch.

5.9. Uses and properties

Oregano is an aromatic herb that retains its flavour and fragrance even after a drying process; in fact, it seems that the aroma increases, which is why you can use a dryer or dry the oregano naturally. The ideal environment for drying it is a dark, dry and ventilated place

Oregano is not simply an aromatic plant very fragrant, it is a medicinal herb with characteristics similar to those of thyme. Its essential oils have antiseptic properties and oregano decoction is digestive, helping against intestinal and stomach pains.

In the kitchen, on the other hand, there are many uses, the most famous certainly being the combination with tomatoes, which we find in sauces, on pizza and on the Caprese salad. The fact that the leaves retain their aroma even when dried greatly facilitates the preservation of the spice, which can therefore be available all year round for recipes.

6. Savory

6.1. Introduction

Savory is an aromatic herb with a very simple cultivation, it can be kept both in open ground and in pots

This aroma is widely used in French cuisine. In the garden it is excellent to include because it seems to be a good repellent of aphids and therefore is an excellent combination to protect other vegetables.

6.2. Climate

Savory is a very rustic plant. She tolerates the cold well, especially if we decide to grow the variety santureja montana, but loves a sunny exposure.

6.3. Soil and fertilization

This officinal plant is not particularly exorbitant in terms of the richness of the soil, it lends itself to being cultivated therefore practically in all the substrata, provided that there are no stagnations of water. The mountain variety loves stony and calcareous lands.

6.4. Propagation

The savory spreads both via gamica and agamica. With the first method, sowing is carried out in seedbeds already from October to November, in greenhouses, in hot caissons, and this allows transplantation in early spring. Sowing in the field is often not recommended and, when it is done, it must be done before winter (October).

The division of the head technique allows to have uniform plants; being an agamic practice, the perfect reproduction of the genetic characteristics of the mother plant is obtained. This operation is done in autumn or early spring, taking from the head of an old crop the peripheral branches that in the hypogeal part are usually provided with roots; from a mother plant are obtained up to thirty individuals.

6.5. Planting

The mountain savory has a surprising capacity for development in the sense of width, so much so that the sixth planting, usually composed of 60 -70 cm between the rows and 30-40 cm on the rows, is moved up to 90 - 100 cm between the rows, so as to obtain a final density of 6-8 plants/sqm

6.6. Crop Care

During the first year it is very important to carry out weeding in the inter-row and along the row. These operations should be frequent in order to ensure a reduction of weeds and water losses by capillarity in the driest months. From the second year of cultivation the works are limited to some weeding in spring and after cutting.

Irrigation interventions are limited to transplanting especially if it is performed in late spring and/ or in periods of drought, after each mowing to stimulate the removal of the plant. Rain irrigation must be avoided or minimised.

6.7. Pruning

The savory can be pruned in autumn after flowering, but in any case not pruning it favors the growth of the apical part. It can also be pruned in early spring to obtain cuttings from which we can produce new plants.

6.8. Collection

The savory is harvested in summer at the height of flowering, cutting it a few centimeters from the ground.

6.9. Uses and Properties

Savory is used in cooking. This herb is akin to thyme and sage, so it is perfect on baked, grilled fish and meat, in marinades, stews and casseroles. It is exceptional for flavouring vegetables simply seasoned with oil, vinegar, salt and pepper. Savory has long been regarded as a plant with antiseptic and stimulating properties for the entire gastrointestinal system: it stimulates the appetite in cases of lack of appetite, is anti-vomitic, aids digestive processes and, in cases of attacks of diarrhoea and dysentery, has a very effective astringent action.

7. Mint

7.1. Introduction

Mint is an incredibly easy plant to grow: it is so weedy that it is often kept in pots to prevent it from expanding beyond one's own plot.

7.2. Climate

Mint is very adaptable, although it does not like frost. As an exposition, it is best to avoid full sun in hot areas, as it is an aromatic that does well in mid-shade positions.

7.3. Soil and fertilization

The best soil for growing mint should be draining but well fertile, rich in humus and organic matter.

7.4. Propagation

Mint reproduces by seed or cutting, if we want to start growing it, we can then decide whether to start from seed or whether to get a seedling to transplant by multiplying it by

cuttings or buying it in the nursery. The cutting of mint is very simple and fast, surely it is to be preferred than the cultivation from seed.

7.5. Planting

Wanting to start from the seed you put mint between March and April, the seeds are placed just below the level of the soil, germinate fairly quickly. We can decide to use a seedbed and then transplant. The optimal period for cutting mint are the months of March, April, May and September, it is a very simple plant to take root. It is enough to take a branch at least 20 cm long from an existing plant and plant one end in the soil until it takes root. If desired, you can also leave a week in water and then transplant it to emitted roots. If we decide to plant mint we choose the place where to put our seedlings. Mint forms a bush, it is not important the distance between the plants because the competition between them system at best the spaces, usually they leave at least 40 cm between each seedling and 70 cm between the rows. Mint is a perennial crop that tends to colonize every space, for this reason it must be contained. A good method is to leave it in a pot, rather also inserting a bottomless pot in the soil of the garden. Alternatively, you can use wooden panels or buried sheet metal to create partitions that enclose mint plants avoiding uncontrolled expansion.

7.6. Crop care

Mint forms a bush, the distance between the plants is not important because competition between them best arranges the spaces, generally leaving at least 40 cm between each seedling and 70 cm between the rows. Mint is a perennial crop that tends to colonise every space, which is why it needs to be contained. A good method is to leave it in pots, rather even inserting a bottomless pot in the garden soil. Alternatively, wooden or sheet metal panels buried in the ground can be used to create dividers to enclose the mint plants and prevent uncontrolled expansion. The mint soil must not be too dry; in hot weather the plants must be watered. The younger the mint seedlings are, the more they suffer from drought; to water best, avoid wetting the leaves and let the water fall directly on the soil. Mint mainly suffers from two fungal disease problems: rust (manifested by brown/yellow spots on the leaves) and root rot. Both diseases are caused by water stagnation; avoiding it prevents the problem. As insects, it is easily affected by chrysolin americanaalthough this beetle generally prefers rosemary or lavender.

7.7. Pruning

Mint must be pruned after flowering to create a healthy new development, otherwise it will become woody. In summer it is pruned a second time to stimulate the development of new leaves.

7.8. Collection

If there are leaves on the plant, they can always be harvested, regardless of the period or how many leaves are left. The mint plant has extraordinary vigour and even if it is completely cut down, it always manages to sprout again. Mint is at its best when freshly picked but can be perfectly dried. It can be dried with a desiccator or by hanging the branches in a dry and airy place. The dried leaves are especially useful for preparing herbal tea and mint tea.

7.9. Uses and properties

Mint is an aromatic herb that really has many uses. In cooking it can flavour salads and is generally used as a spice especially on vegetables (try mint courgettes), but it is also ideal for herbal teas or combined with tea. It can also be made into an excellent liqueur and syrups from which refreshing popsicles, drinks and ice cream are made. In summer cocktails, fresh mint is a must, one of which is the famous mojito. Mint is a medicinal plant rich in properties. The most famous benefit of mint is its balsamic effect, generally attributed to a positive effect on the respiratory tract. Mint is also indicated as a digestive aid.

8. Lemon balm

8.1. Introduction

Melissa grass is a perennial herbaceous plant that exceeds half a meter in height and develops in dense bushes. Its emerald green leaves are slightly serrated at the edges and the lemon balm plant is covered with a slight down, they may recall those of mint. For its taste that recalls that of a citrus, the melissa is also called cedar grass, although generally this name is reserved for luigia grass (Lippia citriodora). Still mistakenly there is also who calls it lemongrass, but it creates confusion with another plant. The lemongrass (Cymbopogon) is quite another species, known for the alleged anti-mosquito properties.

8.2. Climate

It's a rustic plant, cultivable in full sun, with the foresight to protect it from excessive humidity during the winter.

8.3. Soil and fertilization

It’s a spontaneous plant, easily cultivated everywhere. It prefers deep soils, fresh, fertile and with half-shade exposure, it easily grows in various environments, except for the excessively dry soils and those in which water stagnation occurs. During the spring period, that is, when there is a development of new shoots and leaves, use every 15-20 days in the water for nesting, a fertilizer rich in potassium and nitrogen.

8.4. Propagation

Lemon balm propagates by seed and by division of the head. Sowing can be done directly in the field or in seedbeds. The first technique is little adopted because the germination of the seed is never very high and direct sowing in the field requires higher quantities of seed. In open field the sowing can be done in autumn or in March, around the beginning of April. Where they are too dense, thinning should be applied. More widespread is the sowing in seedbeds that can be carried out at different times of the year. The transplantation of the seedlings can take place in autumn or late spring, with earthen bread; throughout the winter until the beginning of April even bare root. The division of head can be performed on plants of 2-4 years of age. From each mother plant 20-40 new seedlings are obtained; it is almost always done at the end of winter, until the beginning of April. This technique is recommended only for small plants, as it is too expensive.

8.5. Planting

It is not particularly difficult to cultivate lemon balm: no special precautions are required and the plants are not prone to problems. It is best to keep the flower bed periodically clear of weeds, and I recommend mulching with straw or cloth around the plant so as not to have to weed. In the plants of lemon balm intended for the production of leaf for herbal use and for the production of seed, the seedlings are placed at a distance of 60-75 cm between the rows and along the row to 20-25 cm. about. Larger forms of investment have also been proposed, with plants spaced between the rows 40-50 cm, for the distillation of the product.

The leaves rich in essential oil are basal and this type of investment will reduce the development of the same, but the greater number of cuttings will increase the number.

8.6. Crop care

It is important to water the lemon balm often, especially during the summer regular watering is essential. A continuous supply of water is important for good leaf production. Mulching also helps in this, reducing soil transpiration. Among the pests that can damage lemon balm are aphidsand root rot as a plant disease, which should be prevented by avoiding waterlogging near the crop. Defence treatments are almost never necessary. As with all perennial plants, remember to intervene sporadically with fertilisation; once a year it is a good idea to provide mature compost or manure in order to keep the soil rich.

8.7. Pruning

Remove wilted flowers regularly, unless you want to collect the seeds. At the end of the vegetative cycle, in autumn, cut the aerial part that is drying out and that will reborn in spring.

8.8. Collection

Of lemon balm, the leaves and inflorescences are used, the best times for harvesting are July and October, the leaves can be eaten fresh or can be dried in a dry, dark place. This aromatic plant also keeps very well in the freezer.

8.9. Uses and properties

Lemon balm leaves and flowers are excellent in salads and early summer colds, with their refreshing note and lemon scent, they are also used in some soups. The dried leaves are used to make excellent herbal teas. Lemon balm is a medicinal plant known for its digestive qualities and is also attributed a calming effect.

9. Chive herb

9.1. Introduction

Chives are an aromatic plant that is very easy to grow, does not take up much space and is a perennial crop. It is a hardy and undemanding plant, and its cultivation is perennial: the

leaves dry up during the winter but sprout again in the spring from the roots that are kept during the vegetative rest period. Reproduction: sowing or head division. It is a rustic and undemanding plant, and its cultivation is perennial: the leaves dry up during the winter but sprout again in the spring from the roots that are preserved during vegetative rest.

9.2. Climate

Chives, being a perennial plant, by its nature resists well to low winter temperatures. It can therefore be grown everywhere. It likes a sunny location but grows well even in the shade.

9.3. Soil and fertilization

Even if it adapts to all types of soil, even if poor and stony, it succeeds better in loose, fertile and quite fresh ones. Those that are too compact or that form water stagnation are excluded. To improve the characteristics of the soil, a background fertilization can be used before planting.

9.4. Propagation

Chives propagate in two ways: the division of the head or sowing. The first possibility is undoubtedly the simplest, but it presupposes to have an existing plant to be harvested in whole or in part. Of course there is also the possibility to buy a chives herb plant in the nursery. The simplest method to multiply the chives plants is to divide the heads, an operation that is carried out in autumn or at the end of winter, taking advantage of the vegetative rest of the plant. The roots of this aromatic are collated in bulbs, it is easy to remove a plant from the soil and obtain several smaller tufts to transplant.

9.5. Planting

To start growing chives you can also start from the seed that is planted in seedbeds in spring and then transplanted into the garden. When transplanting it is important to water abundantly. Plants go 20-25 cm apart.

9.6. Crop care

Irrigations are mainly concentrated in the summer period, during which they must be abundant, while they are not required in winter. In order not to make the plant sick and

avoid fungal diseases, care must be taken to water the base in order not to drop water on the leaves. Irrigations are mainly concentrated in the summer period, during which they must be abundant, while they are not required in winter. In order not to make the plant sick and avoid fungal diseases, care must be taken to water the base in order not to drop water on the leaves. Chives do not have particular parasites, on the contrary it dissuades many insects and for this reason it may be useful to have small bushes in the flower beds of the organic garden as a natural defense.

9.7. Pruning

At the end of the growing season, it is important to completely prune the chives to prepare them for the new growth cycle. Pruning the entire plant with garden shears to a height of 5-10 cm from the base helps stimulate the production of a better harvest in the following summer. This should be done between October and November. Chives are a perennial plant, so they will continue to thrive with the right care.

9.8. Collection

Collect the tasty leaves of your aromatic plant when the small shrubs reach a height of around 20 cm. Generally, if planted in spring, the first harvest can be from summer until the climate cools. Do not collect the whole plant at once, it will take away energy for new growth. Cut the chives leaves leaving 2 cm at the base of the plant, so as to stimulate the regrowth of other tasty leaves. It's important to cut horizontally and never obliquely. You can harvest every part of your plant that you cut, up to 3-4 times a year, from summer until the end of autumn.

9.9. Uses and properties

Of chives, the long, thin leaves are used, which can be finely chopped and added to dishes for flavouring. This aromatic can also be dried and preserved for use as a spice, but it loses much of its flavour - better to freeze it instead. It goes well with cheese, meat and fish, and is also excellent as an aromatic to give a different note to soups or salads. This aromatic herb stimulates the appetite and has digestive, depurative and diuretic properties.

10. Hyssop

10.1. Introduction

Here, we describe the hyssop plant in its characteristics and properties as a officinal species explaining how to grow it organically, placing it in spaces such as borders or garden beds for mixed herbs, in pots or even in rock gardens. Hyssop (Hyssopus officinalis) is a perennial herbaceous species that can be found wild in many mountainous areas of northern Italy. It is a member of the labiates or lamiaceaein which we also find other more common aromatic herbs such as sagesage, the rosemary, the basil and many others. It has erect, highly branched stems that tend to lignify at the base and reach a maximum size of about 50 cm. The leaves are very small but intensely aromatic and rich in essential oils, so much so that they are in great demand in the perfume and distillate industry. It is a very adaptable and easy-to-cultivate species which, in addition to its beneficial properties, provides us with a flowering plant that is very attractive to bees and useful insects. That is why it is certainly worth planting hyssop in our garden.

10.2. Climate

The hyssop is a plant present for a long time in our peninsula and therefore has adapted to various conditions.As climatic needs the Hyssopus officinalis is quite adaptable, resisting even low temperatures. However, it prefers warm and well exposed to the sun.

10.3. Soil and fertilization

It is one of those aromatic plants that can enhance poor soils, even those that are stony and prone to drought. Where other plants would grow stunted, hyssop could in fact fill the space, forming dense low bushes that are very decorative. Accustomed to the arid soils of the mountain, the Hyssop loves dry and well drained soils. It loves chalky soils, it adapts easily to different soils.

10.4. Propagation

- Sowing seedlings in seed bed early spring, transplanting the best ones later.
- Buying seedlings from a nurseryman, Hyssopus officinalis can be found in well-stocked garden centres.
- By division of the heads of specimens already present, in order to multiply them.

Multiplying a plant by semi-woody cuttings. This involves cutting off 5 or 6 cm long twigs during the spring and rooting them in pots containing soil and watering them constantly.

10.5. Planting

It has erect, highly branched stems that tend to lignify at the base and reach a maximum size of about 50 cm. The leaves are very small but intensely aromatic and rich in essential oils, so much so that they are in great demand in the perfume and distillate industry. Hyssop flowers are a very pretty component of the plant: individually they are small but have a beautiful deep blue colour and are grouped in numerous apical spikes. Hyssop also has an aesthetic value of its own, with a prolonged flowering period from July to September, which is also very popular with bees. Before planting an officinal hyssop plant, it is important to loosen the soil deeply and ensure good drainage, by digging or loosening with a pitchfork, then hoeing and levelling with a rake. Organic matter as always is necessary to ensure good soil health, and we can therefore distribute compost or mature manure. However, this species is content with a modest background fertilisation; there is no need to overdo it.

10.6. Crop care

After the hyssop seedlings have been planted, we will have to devote some care over time, but not particularly demanding care. It is an aromatic species that is very easy to cultivate and is very suitable to be managed with totally organic methods. Among the most important care we must remember to prune the shrub every year. Hyssop does not want a lot of water: in nature, it is used to growing on sunny, arid soil and therefore only needs occasional watering, especially when there is no rain. At the time of transplanting, it is a good idea to ensure that the soil is well supplied with organic matter, by means of mature compost or manure, and thereafter a few light toppings each year will suffice. Around the plant, we must ensure sufficient cleanliness from wild grass, either by hoeing, manual weeding or even mulching.

10.7. Pruning

Hyssop is a perennial species, but the aerial part has to be practically renewed every year. Consequently, in spring, the stems are cut back to a height of only 10 cm above the ground, with a vigorous pruning that aims to make the plant vegetate vigorously again.

10.8. Collection

Of hyssop, we can use both the leaves and the flowers. We can harvest the former at any time of the year, while the latter should be picked as soon as they open, and have an excellent essential oil content.

10.9. Uses and properties

Both parts of the plant can be dried and used for the preparation of fragrant pot Poruri. Hyssop also has a use asherbs it is edible. When still small and tender, the leaves can go into mixed salads, which the flowers themselves can help decorate and enrich. The hyssop plant is considered to be a medicinal species due to its valuable content of essential oils, flavonoids, tannins and other substances that result in positive properties for the body that can be exploited in phytotherapy. Specifically a balsamic and expectorant plant, hyssop is attributed with the ability to combat asthma, bronchitis, coughs and other respiratory tract problems. The presence of essential oil gives this plant digestive properties.

11. Echinacea

11.1. Introduction

Echinacea is a plant that we can classify as both ornamental and officinalas it reflects the characteristics of both types, with its beautiful flower and extraordinary beneficial properties. Its pink blossom is really splendid and also much loved by butterflies, for this reason alone it deserves to be introduced in the garden or in some corner of the vegetable garden. In addition to its appearance, Echinacea purpurea is particularly sought after for its phytotherapeutic properties, as in appropriate preparations it helps prevent flu and colds. Echinacea purpurea, native to North America, is among the most common species to be found among the entire Echinaceae group, a genus that includes 9 distinct species. It is a polyannual herbaceous plant that is rather small in size, and therefore easy to grow even in narrow spaces and even in pots. After a long summer flowering period, the area dries out in autumn and then vegetates again the following spring. Echinacea belongs to the composite or asteraceae family, the same family that includes vegetables such as lettucechicory, endive, sunflower, thistle, and artichoke. In this family we also find various other species valuable in phytotherapy, such as chamomile and helichrysum. Its flower is a kind of large daisy with pinkish petals, very pretty.

11.2. Climate

For climate, it withstands both summer heat and winter cold well.

11.3. Soil and fertilization

Echinacea adapts easily to all types of soil, but those that are fertile and rich in organic matter can certainly guarantee more generous flowering.

11.4. Propagation

The echinacea propagates in spring by division of the tufts or by seed. The seedlings obtained must be planted in the open field when the temperatures reach 20 °C. At the time of planting 4-5 plants/ m^2 placed at a distance of 40-50 cm from each other.

11.5. Planting

Echinacea can be grown directly from seed in spring. In this case it is better to make the seedbed and transplant the best seedlings when outside temperatures have reached around 15-20 °C, i.e. around the same time that most spring-summer vegetables (tomato, bean, aubergine, courgette, etc.) are sown and transplanted in vegetable gardens. The seedlings must be transplanted at distances of about 40 cm from each other and approximately 4 or 5 seedlings can fit in a square metre area, if they are well arranged in quincunxes, which will then expand and sometimes practically merge together with their respective blooms. Due to its polyannual nature, echinacea must be handled differently from annual flowers such as zinnias, marigolds and cosmeas: it is better to transplant it in a space where we are sure we want to keep it for a long time.

11.6. Crop care

During the spring and summer seasons, we need to dispense some important cures to echinacea, in particular:

- Watering: Echinacea should be watered regularly, but as it fears waterlogging, special care should be taken to avoid it.

- Weed control: When the plants are still small, but also afterwards, it is necessary to keep the space around the small echinacea bushes clean by removing the weed manually or with tools, or by directly preventing its emergence by mulching.
- Removing withered stems: this practice is certainly valid for aesthetic reasons but is even more useful for stimulating the emission of new flowers.
- Cutting off the area, in autumn, after it has wilted. There is no need to fear, as new shoots will sprout at the first warmth of the new spring.

The still small echinacea seedlings are a welcome food for the snailswhich can easily devour them. Action should be taken at the earliest signs, i.e. when we notice the eaten seedlings and the slime of these molluscs on and around the remains. In such a case, action must be taken using non-polluting remedies, such as distributing ash around the seedlings, DIY beer traps or the use of an ecological snailicide containing iron orthophosphate.

11.7. Pruning

Pruning is not strictly necessary for echinacea. However, removing wilted flowers can stimulate the plant to produce more flowers.

11.8. Collection

Only for the Echinacea purpurea is the collection of the aerial part in full bloom. The roots, of all three species, are instead collected in the autumn or winter of the second year of cultivation, before the vegetative restart.

11.9. Uses and properties

Echinacea is a medicinal species contained in many medicinal and cosmetic preparations found on the market, such as mother tincture. The roots of Echinacea angustifolia and the flowers of Echinacea purpurea are used in various ways to obtain them. In particular, echinacea is helpful for the immune system, helping to strengthen it against influenza, as we mentioned. For this purpose, we find it, for example, in homeopathic preparations or pills with echinacea extract. We sometimes find this flower referred to as a 'natural antibiotic', a misnomer but indicative of the beneficial properties of this plant. Native Americans also used echinacea root preparations to aid wound healing and to treat snake bites. In any case, before using any phytotherapeutic product based on echinacea, it is important to be well informed

about its properties and contraindications and to consult a doctor especially if in doubt. Infusions and decoctions containing echinacea are also found, generally made from the dried roots. Finally, we mention its applications in cosmetics, as it is an effective skin purifier and is used in lotions and creams.

8. Packaging and selling

Packaging is the final product transformation process. During this process, the product is, in the case of aromatic salts, placed inside glass jars that have been previously sterilised (with a special steriliser) and carefully dried to prevent the salt from compacting by coming into contact with water. They are sealed with screw caps and then labelled, front and back with labels showing the producer, the ingredients inside, the packaging date, the expiry date and the batch number.

Mint and lemon balm for the production of herbal teas, on the other hand, are placed in paper bags, designed to better preserve the product, sealed, labelled, and affixed here too, packaging date, expiry date, manufacturer, ingredients and batch.

Selling is a process that requires professional preparation in both the seller and the corporate buyer. On the seller's skills front, ideally 'knowing how to sell means above all knowing how to be positive and motivated, customer-oriented and inclined to establish a lasting relationship of mutual benefit with the customer'.

The sale was planned in stages.

The first process planned in the sale is the acquisition of theoretical-practical notions through role-playing where the participants will experience the role of sellers and buyers and with which they will be introduced to the sales situation. Following this first process, "protected" sales situations will be recreated within "Maso Zancanella", i.e. the structure already known

by the participants to allow the person to hone their skills in a known context for 5 times. Only afterwards will the sale move to an 'outside' environment.

Step by step visual aids were made available during the sale, showing the various steps in the sale of the different products.

This allowed the participants to acquire the skills gradually while keeping anxiety, stress and frustration at a lower level. It also enabled them to acquire the necessary social skills and to introject the notions needed to be able to explain and inform the customer for an informed purchase.

The prompt was nuanced from time to time, in situations that allowed it, in order to make the person as autonomous as possible within the process.

9. Training methodologies for autistic adults in skills development in the agricultural sector

In the teaching of new skills, there is evidence of effectiveness especially in certain modalities, which facilitate learning in people with ADS; the main ones used within the INFUSE project are listed below.

Video modeling, visual aids such as step-by-step, errorless teaching, and learning in the field using imitative skills where and if present, have proven to be essential methodologies in working with young people with autism spectrum.

Based on the needs and characteristics of each participant, the most appropriate teaching methodology needs to be identified and used.

Samples of training materials are provided by the INFUSE Training course, in the practical section for users, and include videos and visual supports used during the INFUSE project.

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