**RESOURCE MANAGEMENT OF MEDICINE PLANTS**

Medicinal plants occupy an important place in the world of plants, where people use it for various purposes. The sharp increase in the interest of medicinal plants in recent years has led to the fact that the use of wild herbal raw materials has become an urgent problem. Resource management of medicinal plants is one of the most important areas of scientific and practical activities of various specialists in all countries of the world, but in each country its implementation and direction are different. This diversity depends on the size of countries, the characteristics of the economy, the demographic situation, the abundance of herbal raw materials, supply possibilities, etc. factors. As a rule, biological, exploitative and annual quantities of wild grass, mapping of spatial zones, identification of new types of biologically active substances and the development of more effective herbal remedies based on them are one of the pressing problems facing pharmaceutical science.

Various research institutes and relevant departments of the AMU participated in the study of the raw materials of wild herbs in the Republic of Azerbaijan and the determination of their distribution areas. As a result of years of research, the raw materials of many plant species have been studied.

Plant resources usually refer to natural resources. Plant stocks include any plant materials needed by humans. There are 5 areas for direct or indirect use of plants: 1. Food for people and animal feed; 2. Source of raw materials for industrial and economic activities of people; 3. For decorative gardening; 4. To protect and improve the environment; 5. Raw materials as medicine and for the manufacture of medicines. Rationalization of medicinal plants refers only to the raw materials used for the purposes indicated in clause 5. The resource management of medicinal plants is surrounded by almost all herbal herbal remedies that can be used in medical practice.

The resource management of medicinal plants is a separate section of botany and formacnosia that serves to study the raw material resources of wild medicinal plants, identify their spreads, organize, effectively use and protect medicinal plants. As we can see, the resource management of medicinal plants is a complex science, and is closely associated with botany (especially geobotany), pharmacognosy, phytochemistry, and so on. closely related to science. At the same time, it forms the free part of plant wealth, which explores plants and their products used by people for various purposes.

The main essence of resource management of medicinal plants is the study and rational use of wild herbs. The importance of wealth is measured directly by the fact that more than 50% of the phytopharmaceuticals used in recent years were derived from wild herbs. Wild herbs play a very important role in the supply of raw materials directly to the pharmaceutical industry. On the other hand, the pharmacy chain and the pharmaceutical industry suffer from a lack of herbal medicinal herbs. This is due to the fact that most of the territories of the Republic of Azerbaijan are not involved in the study of wealth, the lack of adequate supply of wild plant materials is very painful and at the same time expensive work.

The main responsibilities of resource management of medicinal plants include:

1. Determining the amount of raw stock of wild herbs for each region, as well as determining areas of mass importance of common species, as well as the identification of reduced species, as well as less common species as a result of purchases;

2. Definition of plans of plant raw materials and factory items that can be purchased annually in certain regions;

3. To organize the operation of supply zones on a rotational basis in order to ensure the efficient distribution of harvested areas with the expectation of a natural self-procurement process in areas of mass distribution;

4. Chemical taxation of biologically active substances contained in medicinal plants, ultimately identifying higher populations;

5. Determination of the degree of mass spatial distribution after the delivery of raw materials, the influence of anthropogenic and geographical factors on the quality of plant raw materials, as well as the area of environmentally friendly distribution of wild medicinal plants;

6. Development of recommendations for the rational use and protection of rare species of wild herbs.

In the resource management of medicinal plants, not only wild herbs are explored, but also other effective crops - food, feed, technology, and so on. In the CIS countries, more than 160 medicinal herbs are used, some of which are already cultivated. The definition of raw materials for cultivated plant species is not considered a very important issue. These herbs include medicinal valerian, great plantain, motherwort herb, common hops, and so on. There are several types of plants, their reserves of natural raw materials are hundreds of times higher than the required amount. For example, dandelion, stinging nettle and so on. The study of the raw materials of these plants also does not matter for wealth. Issues such as identification of areas for massive plant types, the definition of environmentally friendly areas of mass distribution are considered more relevant. Other cultures can be divided into 3 groups:

1. Wild medicinal herbs with extremely scarce raw materials (herbal alcea, common barberry, dwarf everlast, tormentil, sweet flags, etc.);

2. Types of plants with a small amount of raw materials and the lack of sufficient information about the stock (various hawthorn, elder black, etc.). This group also includes plant species that require a lot of supply and processing of raw materials (for example, birch shoots, raspberry fruits, etc.);

3. Species of plants that are in the "Red Book" or species that are endangered in different regions or fall into the list of rare plants..

Also included are plant species that are exported in resource management as well as plant species that are clinically researched and considered promising.

During the research, resource management as a basis for taking not only stocks of plant materials, but also the ability to supply, cost-effective distribution of mass spatial zones (population density, proximity to the transport network, etc.). The territory of the Republic of Azerbaijan is geographically different. Therefore, resource studies in individual regions should be implemented with consideration of certain features. For example, in the Guba and Lankaran mountain range, different types of transport should be used, given that the local conditions are mountainous. The annual stock of textile products in industrialized regions (Baku, Ganja, Sumgayit, Mingachevir, etc.) should be taken into account, and an excessive supply of raw materials should not be allowed.

The study of the raw material state of wild medicinal plants and their effective use are associated with three stages: preparation, escalation and cameral.

At the preparatory stage, the objectives of the study are determined. These duties are often estimated by the stocks of raw materials and the number of annual stocks. In addition, expeditionary studies are planned for the date of expiration and duration. Data on the ecological-senotic characteristics of the study area are collected until field work is completed. In particular, in what forests, meadows, wetlands, or groups of plants are the species or species studied, on which fertile soils are plants, etc. For this purpose is the source used. Herbarium materials are also used in the Herbarium Foundation of the Institute of Botany of the National Academy of Sciences of the Republic of Azerbaijan. Along with this, local departments of the Ministry of Natural Resources and Ecology should receive information on plant species protected in the area prior to the procurement process. Organizations engaged in the supply of raw materials should receive actual stocks of raw materials over the past 5 years.

At this stage, appropriate cartographic materials should be prepared (topographic maps of scale 1: 600,000, 1: 300,000 or 1: 100,000). For beginners, geobotanical maps or plans are also needed, which also contain information on the location of forest, marsh, grass, and other groups of plants. If the type of plant being studied is typical of a forest area, information about trees in the forest and places to be cut will be obtained from forest areas. This information is additionally collected for woody plants. For tame and herbaceous plants this is given shortly. Land use maps are used on flat land. Maps can be used as auxiliary tools, soil maintenance and inappropriate environmental media. All types of maps are used to determine the directions of research and the degree of distribution of masses of different types.

Thus, common problems are solved at the preparation stage. Information is collected on the distribution of the studied plant species, the ecological status, the state of harvesting, and a detailed plan for field research has been drawn up. This stage is considered key to the study of wealth, that is, it depends on the successful completion of the expedition stage and the exact outcome of the final results.

The expedition stage is based on the organization and implementation of the expedition in accordance with a previously prepared plan. The main purpose of this stage is to determine the zones of mass distribution of the actual supply of medicinal plant raw materials in the area under study, to determine the stocks of raw materials and specific indicators necessary to determine the quantity of raw materials that can be supplied annually.

The cameral stage involves the calculation of stocks of raw materials and the determination of the number of annual stocks. A plan for the supply of raw materials for the region or region has been prepared, and feedback has been received on the rational use and protection of rare species. At this stage, the mapping of plant resources is also carried out.

**Basic concepts and terms used in the resource management of medicinal plants.**

Biological reserve - the value of raw phytomass, formed by all specimens of this type at any sites - both suitable and not suitable for harvesting.

Possible annual workpiece - the amount of raw materials that can be harvested annually in a given territory without damage to the raw material base. It is defined as the quotient of dividing the value of the operating stock of raw materials in all parts of the workpiece by its turnover.

Thicket is the aggregate of individuals of a single species growing in the plant community at a site suitable for carrying out commercial harvesting.

The key plot is the area that serves as a benchmark for this type of land in terms of raw materials of the medicinal plant.

Model exemplar is the average copy of the mass or escape, used as a counting unit to determine the density of the stock of raw materials specific thickets or key area.

Billet turnover is a period that includes the year of preparation and the number of years needed to restore stocks of raw materials.

A population is a collection of individuals of a species that freely interbreed with each other, grow in a given phytocenosis and occupy a certain territory.

Potentially productive land is a set of thickets or field arrays of the same species in a homogeneous territory, where the organization and conduct of preparations of medicinal plant materials are possible.

Projective cover is the percentage of the area occupied by the projection of the above-ground organs of the studied species.

Commercial array is several closely located thickets (populations) of the studied species, suitable for the organization of workpieces.

Commodity copies - adults, intact copies to be collected. They do not include individuals left for seed or vegetative renewal.

The transect is a rectangular pad 1-2 m wide, laid along the route, on which the number and density of the stock of plant raw materials are calculated.

The stock density of raw materials (yield) is the average value of the raw part of the plant, obtained per unit area of thickets. It is expressed in units of mass per unit area (g / m2, kg / ha, t / ha).

Accounting sites are areas of size from 0.25 to 100 m2, laid down within the thickets or commercial array to count the number, projective cover or stock density of the raw material of the studied plant.

Cenopopulation is a population or its part, limited to one phytocenosis.

The operational stock is the value of the raw phytomass originating from commodity specimens in the plots.

**METHODS FOR DETERMINING RAW MATERIAL RESOURCES OF MEDICINAL PLANTS**

The raw material resources of medicinal plants can be determined in two ways: 1. Determination of stocks of raw materials in certain areas where the plant is distributed; 2. Determine the stocks of raw materials in some specific areas and determine the stocks of raw materials in the region or region based on the results obtained.

The implement of these methods depends on the biological, geographical and ecological features of the plant, the purpose of the work, the availability of cartographic material in the forest and soil structure. If the supply of medicinal plant materials is carried out in a particular region or province, and the raw materials are collected by the brigade, the stock of raw materials should be determined according to method 1. It is also desirable to determine natural resources for many years (eg annual crops), as well as raw materials of rare plants. As a rule, use the 2nd method to determine the stocks of raw materials in many large administrative-geographical areas (for example, in provinces, autonomous republics). It is more beneficial to determine the raw stock of plants that have a certain type of vegetation that prevails on pastures, and changes the productivity and richness of plants with varying degrees of variability over many years.

In specific areas where the plant has spread, the method of determining the stocks of raw materials is as varied as determining the area where the plant is spreading, and determining the stocks of raw materials. Mass distribution areas are based on topographic maps, personal observations, forest workers and support of the local population, as well as materials from the Herbarium Foundation of the Botanical Institute of the National Academy of Sciences of Azerbaijan.

*Determination of raw materials stocks of medicinal plants in specific areas.*

Thus, the definition of raw materials gives very good results. However, the results often disappear. Since the areas exposed to plants are exposed to human factors (germination area, use for construction and inadequate supplies). Therefore, the determination of stocks of raw materials at the plant should be carried out periodically in the same area, that is, repeatedly within several years.

Mass spatial areas are determined by topographic maps taking into account the conditions in which the plant spreads. For example, ordinary thyme is likely to grow on the slopes of mountains, forests and meadows.

As is known, the size of the spatial area of the masses and its productivity (density of raw material resources) determine the raw materials of the plant.

*Determining the size of mass spatial distribution.*

Determining the size of the mass spatial distribution is largely dependent on the distribution of species of wild plants. If areas of distribution are too dense or dense, it is easy to establish boundaries, and its shape is similar to any geometric shape (triangle, square, square, circle, etc.). The parameters are then determined to determine the size of the field. If the studied plant species are distributed in the form of separate small areas (forest, meadow, etc.) that make up less than 50% of the total area, the entire area is calculated in the manner indicated above, then the area size of the plant species studied is calculated with% To determine the size of the fields are measured in transverse and longitudinal steps. Then, the step sizes are measured at separate small spatial areas, the size of one mass spatial area is concentrated and determined. In this case, it is assumed that in the general region only a few percent distribution of individual distribution areas in the general region.

*Determination of performance.*

There are 3 methods for determining the performance of medicinal plant raw materials.

1. Reporting platform method. Reporting sites represent the average area (from 0.25 m2 to 100 m2) defined in the mass distribution area to determine the weight, quantity, or projective cover of a plant. This method of determining the raw stock of shrub vegetation (lily of the valley, cowberry, strawflower, etc.), Used as surface herbs such as non-sharp herbs and raw materials. The method is very simple. However, this requires a lot of effort, and the results obtained in this area cannot be applied to other areas of the plant. When it comes to this method, firstly, several reporting areas stand out in the area of enterprise distribution. Reporting zones should be distributed in different parts of the area where the plant is distributed.

It is much easier to set the productivity of the raw material in the reporting platforms. First, depending on the number of adult plants, the series of playgrounds are identified. Typical teas, mayonnaise, bitter wormwood, ordinary sorghum, sandblast, and so on. The size of the registration area for plants is 1 m2. Availability of 10-100 m2 yards for 10 m2, large bushes and not too big trees (ordinary fever, swallowing, etc.) to determine productivity of shrubs (ordinary raspberries, different types of hips, common horses, etc.) advised. Reporting platforms are considered optimal, with at least 5 experimental adult plants being studied. Formats can be squares, square, and rectangles according to their shape. Moving within a mass spreading area, every 3 depending on the plant being studied; 5; 10; They allocate a pitch of 20 steps. If the species in question is dominant in the vegetation cover and its patterns are roughly equal to that of the area, it is sufficient to allocate 15 to 25 report areas. If the area surveyed is not abundant, but also unevenly distributed, the number of reporting platforms should not be less than 50.

The number of platforms should be so high that the results obtained in statistical work do not exceed ± 15% of the average mathematical calculation. The size of reporting sites for grasses can range from 1 to 10 m2 for small and medium sized shrubs, and from 10 to 100 m2 for small grasses and small trees. Then all the raw materials of the species studied at the designated pits are collected according to the instructions for the collection of the plant raw material and immediately dispensed with 5% accuracy. Only young or damaged specimens are collected. It should be collected in dry air. First of all, 15 reporting platforms are identified. The results obtained on each pitch are highlighted separately. The statistical report of the total results obtained is made and then there is a reserve that can be exploited. At this time, if the difference between the minimum and maximum weights is 5-7 times, there is no need for additional pitch. If there are more differences, additional pitch should be installed and reported. Then the statistical report of the general results is taken and the average numerical value is determined by which the possible amount of plant raw materials is determined. The mathematical error of average numerical value should not exceed 15%. The total amount of raw material found is the result of the results obtained by the size of the whole area.

2. Model samples method. An example of a model is the average statistical raw material sample for the weight of the medicinal product determined for the specific mass distribution domain. This method is used to determine the raw material of trees, large shrubs, sparse grasses and all plants underground bodies. In the above-mentioned variants, determination of productivity in reporting platforms requires a lot of effort, and areas of the yards are excessively large. To find productivity in this method, three indicators - the size of the total distribution area, the number of plant specimens or the number of beans, and a plant sample or intensive middle weight should be determined. When determining the exact patterns of distribution of individual plant specimens, or the difficulty of supplying raw materials from a plant, the reserve of animals is determined. The number of model samples is carried out in a public broadcasting area or in reporting areas designated in a small area. The size of the reporting platforms can range from 0.25 to 10 m2, depending on the density of the mass spatial areas. Determination of plant specimens and their weights is up to 10% precision. If the number of plants in the area of 1 m2 is not less than 1, the pitch (transect) in the direction of the study is determined and reported. Reporting yards are defined in 20, 50 or 100 steps. Results from the 25 to 40 footsteps are more accurate. To determine the weight of the plant raw material, sample samples or pods are collected in the registration yards or transects. At this time, all plant specimens in the area should be collected. A more systematic approach is used to obtain a more objective outcome, in which case every 2, 3, 4 or 5 plant sample is collected. The number of sample samples depends on the plant variation. Thus, in the determination of the weight of underground bodies or flower baskets, 40-60 patterns are provided. Up to 100 and more patterns should be collected for other vegetative organs of the plant. If the plant patterns produce a strong variation, they need to be grouped together. Mas. 1-3 sprouts, leaves, vegetative and generative organs. The number of plants is separately listed for each group of raw materials. For each sample model, the weight of the plant raw material is determined and the average numerical value is found. At the same time, all patterns are drawn together and subsequently their average weight is inaccessible. The average number of plant specimens is found by tapping on the average weight of the samples to find productivity.

3. Projective cover method. The projection implies a certain area covered with the surface of the plant. The fertility of the plants with the inert or inadequate hull (thyme, lilac, crocodile, etc.) is determined by the method of covering. Meanwhile, 2 quantities are identified - the average projective cover of the plant species within the boundaries of the mass spreading area and 1% of the vegetable raw material, ie the "price" of the cover of 1% of the projecting cover. The projective implicit frame-frame or vision is designated. Square frame is a frame with 1 m2 area, divided by 100 wires with wire or rope, each with 1 dm2. Each square is 1% of the total area. The framework is put on the investigated plant within the report area and determines how many squares cover the surface area of ​​the whole or half of the plant. The simplest method is the designation of the projective cover. For this purpose, the report area is overlooked and the percentage of areas closest to each other will be determined. This method is relatively inaccurate, and only experienced researchers are allowed to use it.

To find the “cost” of 1% of the projective cover, vegetable raw materials are collected and drawn out by 1 dm2 per reporting area. Since the “price” of 1% of the projective cover differs in different groups of plants and in the environment, this indicator should be calculated separately for each zone of mass distribution.

Productivity is determined by the percentage of the projective coverage equal to the multiplication of 1% of the design coverage by the “price”. Other indicators (statistical error, operational capacity, etc.) are calculated as in the model example of the method.

As a result of determining the raw stock of a wild herbal plant in a specific area, it is possible to obtain accurate indicators for the mass distribution area. However, the results obtained are quickly overturned, and the area under study may change as a result of the human factor (planting, construction, etc.). Therefore, in 10-15 years in the study area, it is necessary to conduct resource studies.

*Implement of stock of medicinal plant materials in certain areas.*

Determining the stock of medicinal plants in specific areas and determining the stock in the entire area surveyed on the basis of the results obtained can only be applied to medicinal herbs belonging to any type of landscape and herbal plant group.

To apply this method, 3 conditions are necessary: ​​1. The type of plant to be studied must be adapted to any element of the relief, to a specific group of plants or to the soil. In this process, there is no need to refer to the plant for a specific species. Thus, the number of plants may be small in the study area (forest, meadow, etc.). At this time, additional data are needed (degree of illumination, tree density, humidity, etc.), and ultimately, the location of specific plant species can be determined; 2. Have large-scale diagrams or planes falling from relief elements and the type of plant being studied; 3. Know the vegetation cover of the study area.

It is possible to determine the stocks of plants such as sweet flag, bearberry, Chinese angelica-tree, thorny ginseng, cowberry, and so on using stocks in special areas. The number of spheres of particular importance should be sufficient to learn more about the location and performance of the mass spatial zones in them.

The dimensions of the areas of special importance may vary. The size of the fields is growing, as the uniformity of the plant cover becomes smaller. Typically, the region of particular importance can vary from 1 km2 to several km2. At this time, special areas should cover at least 10% of the total potential area.

The selection of specific areas depends on the specific plant species. For example, these areas for cmin are selected in young pine forests with sandy soil, for the usual bearberry pine forest and in the same type of other forests felled, for wild rosemary in the peaty-spruce forests. You can not attach special importance in areas of mass distribution. In this case, the numbers are exaggerated. Therefore, areas of particular importance should be defined as strictly systematic, as reporting platforms (maps of forest plans, or every third or fifth of the forest in accordance with local conditions).

If the area of special significance is relative to the vegetation cover, and plant samples are slightly or strongly distributed (for example, a hill in which there is an ordinary barberry), there is no need to determine the percentage of the area occupied by the mass distribution area. In certain areas there are several steps (transect), and the number of samples (projective cover) and performance are determined at a height. Subsequently, the average performance is determined by specifying the areas in which it operates.

If the plant is not evenly distributed in the study area, first determine the percentage of the area in which the plant is distributed in the area of special importance. For this purpose, the width of the spatial spaces is 1 m wide by 1 m along steps of special significance. The size of the area occupied by the mass distribution area is determined as a percentage. Then the performance is determined by the usual method.

In any case, the next step will be processing the results. In the first case, the average performance in each of the key areas is determined. Then special areas are grouped into high, medium and low performance. Medium and moderate productive groups have an average price. If the species is distributed unevenly, the average percentage of spatial spaces will be determined in all areas of particular importance, then the average performance will be determined for all spatial spaces in all specific areas.

To find the potential performance of the study area, calculate the palette (a tool for calculating the area in the plan and maps) or weight based on a map map. The pallet is a transparent plate and is divided into degrees 1 cm2. It must be placed on the contour map of the designated area. Then complete or partial contours are considered dams. The contour area is determined by removing the map mask. The weight method is considered more accurate. To this end, a copy of the contour is removed, the damaged part is cut and weighed on the analytical weight. In order to convert weight indicators into field indicators, a square is cut off and a weight is set (for example, an area of ​​1 dm2). Depending on the scale of the map, the area of ​​the square and its weight are compared with the weight of the contour and the size of the field is determined.

To determine the potential use of the facility in the study area, the area of ​​the supply area is increased to the average productivity in the area of ​​particular importance. It should be noted that the figures obtained are considered the only correct type of vegetation in this area. The definition of the reserve using special value gives less accurate, but complete and stable results. Thus, it is desirable to carry out more regional and provincial reserves. This method is less knowledgeable for procurement organizations.

*Determining the quantity that can be supplied.*

Determining the amount of exploitation of plant materials, provides an opportunity as well as how to use these plants for one time in a specific area of ​​mass distribution. Numerous studies show that every year only fruits and seeds of plants that grow vegetatively (for example, hawthorn, viburnum, etc.) can be supplied in the same distribution area. In all other cases, you need to calculate the number of annual deliveries. First of all, it is necessary to know that specific types of plants completely restore all parameters in their original form in the field of mass distribution. In general, for most plant types, an approximate feed time is determined. It is advisable to make delivery of flowers and flowerpots of plants, such as raw materials, as well as annual herbs every 2 years, perennial herbs, half-shrubs every 4-6 years, and the offer of all plants underground for 15-20 years.

The amount that can be used to search for annual quantities of plant materials should be divided by the total amount of time spent on the supply of the mass distribution zone.

*Compiling of the results.*

Upon completion of all work related to the determination of stock of plant materials, a final report is compiled. It refers to:

- the purpose of the work performed, the name of the studied areas and the name of the medicinal herbs studied;

- a brief description of the field of study (transport network, agriculture, forest, etc.);

 - method of work performed;

All results obtained should be separately indicated in the final table for each plant species.

It should be noted that in addition to these two methods for determining the stock of plant raw materials of the wild in recent years, other methods have been used. Thus, vegetation in mountainous areas is more mosaic, therefore, certain changes in the definition of raw materials are assumed. Methods have also been developed that require special skills based on aerial photography, photography and researchers.

*Comparison of resource specification raw wild plant.*

Due to the fact that the distribution of the resources of the raw plant is carried out through the map, it is possible to compare the plant resources on the map. At this time, each type of card has its own area of ​​use. Large-scale charts (1: 25,000, 1: 50,000, 1: 100,000) are used to reflect specific, widely used spaces in a region or region that is not very large. Average maps (1: 600 000) can be applied in individual provinces or throughout the country. Small-scale charts (1: 1,000,000, 1: 2,500,000,000) are applied to larger objects, for example, throughout the country.

It is important to have schemes that reflect the results of phytosanitary rehabilitation of wild animals and contours of spatial spaces for the collection of circuit maps. On the maps of the field of wild medicinal plants are marked with numbers or colors. Each of the wild herbaceous plants may also be shown by some common markers. It is advisable to use charts on small-sized charts.

**FORMATION OF THE BASE OF RAW MEDICINAL PLANTS**

Production and sale of countless herbal remedies, biologically active additives and homeopathic medicines in recent years has led to an increase in demand for raw materials of medicinal plants. Currently, the base of medicinal plant materials is formed as follows: 1) harvesting of wild medicinal plants; 2) harvesting of cultivated medicinal plants; 3) fund of imported plant raw materials; 4) on the basis of medicinal plants and a cell biomass culture.

The main source of medicinal plant materials is an industrial stock of wild and cultivated medicinal plants. There are more than 4,000 plant species in the territory of the Republic of Azerbaijan, of which 135 are wild herbs. At the same time, in the flora of the country there are many promising species that can be used in medical practice, and some species can be exported to other countries. Legal entities (company, pharmacy, etc.) and individuals with special consent (license) issued by the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan may engage in the preparation of medicinal plants.

Exported medicinal plant material is a small part.

Increasing tissue and cell culture of medicinal plants is considered a promising area.

Despite the increase in the number of herbal medicines grown each year, only 75% of the demand for plant raw materials in the CIS countries is met.

More than 250 plant species belong to the nomenclature of wild medicinal plants harvested in the CIS countries.

Cultivated medicinal plants are the main source of medicinal plants. Special farms and farm households are engaged in the cultivation of medicinal plants. The territory of the Republic of Azerbaijan is located in the south-eastern part of the Caucasus, which has a complex and colorful geomorphological structure and is characterized by a rich vegetation cover.

If we divide the territory of the Republic of Azerbaijan into ten natural-economic zones, it will become clear that a large number of medicinal plants can be grown in these areas.

In the natural economic zone of Ganja-Gazakh it is possible to cultivate aloe, mint, foxglove, saffron, calendula, chamomile, securinega, restharrow, fennel and others.

In the steppe part of the Shirvan zone, it is possible to cultivate aloe, castor-bean, geranium, licorice, ammi, henbane, mustard, milk thistle, coriander, calendula, raspberry, rue and other plants.

In the dry subtropical part of the Mugan-Salyan zone there are favorable conditions for growing licorice, ammi, cassia, dogbane, coriander, thistle, smoketree, rosemary, sophora, oleander, mint and so on.

The cultivation of glaucium, chamomile, valerian, elder, mint, belladonna, celandine, sage, violet, marshmallow, bastard hemp, henbane and other plants is promising in the highlands of Karabakh.

On the territory of the Karabakh-Mil-Mugan zone, it is possible to cultivate calendula, smoketree, amorph, stephania, ungernia, mustard, lemon balm, dogbane, fennel, comfrey, madder, cassia, psoralea, yucca, castor, etc.

The natural environment of the Guba-Khachmaz region makes it possible to cultivate chamomile, horse chestnut, securinega, cumin, dill, rue, yucca, eucommia, goat's-head, garlic, three-lobe beggarticks, silkvine, oleander, madder, marshmallow, valerian, mint, celery, lemon balm, saffron, foxglove and other plants.

In the Shaki-Zagatala zone, it is possible to grow chamomile, mint, valerian, fennel, cumin, belladonna, marshmallow, melissa, sea buckthorn, phytolacca, lavender, rose and so on.

The Aran and foothill parts of the Lankaran zone belong to a humid subtropical climate. In this area, there are favorable conditions for the cultivation of Java tea, aloe, tea, sesame, solanum, periploca, papaya, mint, eucalyptus, catharanthus, securinega, foxglove, pepper, passionflower, mountain knotgrass, various citrus and other plants.

In the Absheron zone, it is possible to grow agave, fennel, coriander, cumin, castor bean, laurel, calendula, saffron, henna tree, oleander, sophora, carum, datura and other plants.

The natural conditions of the Nakhchivan zone make it possible to cultivate mint, ephedra, pepper, apricot, hogweed, ammi, castor bean, cumin, licorice, rheum, calendula, sesame, periwinkle, etc.

Currently, more than 60 medicinal plants are grown on an industrial scale in the CIS countries. Various research institutes are engaged in the introduction of medicinal plants. Adaptation of a new medicinal plant to growing is considered a long-term task that requires hard work. This process consists of various stages, including collecting materials for planting, studying the biological properties of a medicinal plant, choosing geographic and optimal areas for planting new crops, developing effective reproductive methods and a variety of valuable, economically important populations. The average annual adaptation of annual plants is 3-4 years, and perennial plants - 6-10 years. Despite the growing trend towards introduction in recent years, it is impossible to adapt each medicinal plant to new conditions. Many plants (calamus, adonis, firmosses, wild rosemary, etc.) are very difficult to adapt to the new environment for their biological and ecological features.

Growing plants is carried out in the following cases: 1. Local medicinal plants for which raw materials are in great demand (pharmacy chamomile, medicinal valerian, sea buckthorn, etc.); 2. Medicinal plants with a limited area and stock of raw materials (Georgian madder, ginseng, belladonna, etc.); 3. Plants that cover a large area, but do not form dense spreading spaces (Hypericum, immortelle, etc.); 4. Plants that are the source of new drugs and medicines and do not have a sufficient raw material base (datisсa, sweetvetch, thistle, etc.); 5. Medicinal herbs of other countries that have no analogues in the flora of the country (aloe, mountain knotgrass, Java tea, cassia, etc.); 6. Plants that do not grow in the wild and are only cultivated (pepper, mint, etc.).

Preparation of cultivated medicinal plants, as compared with wild medicinal plants, has certain advantages. Agrotechnical maintenance and reproduction of plants as a result of selection, as well as the use of mechanical methods in reproduction, an effective process of harvesting and drying can improve the quality of raw materials.

Special farms for growing medicinal plants were created in different plant zones of the CIS countries. Such farms operate in Azerbaijan, Moldova, Belarus, Latvia, Georgia, Kazakhstan, Kyrgyzstan and Russia.

Imported raw materials of medicinal plants include raw materials of plants that do not grow on the territory of the country and mainly grow in tropical countries. These include the rauwolfia serpentina root, stephania roots, strophanthus seeds, Caucasian fir, poppy, etc.

After the country's demand is satisfied, the remaining raw materials can be exported in accordance with the needs of other countries. The number of exported medicinal plants is compiled in accordance with the demand for them. In the global market for raw materials of medicinal plants, there is a great demand for coltsfoot, licorice, mistletoe, buckthorn, horse chestnut, horsetail, calamus, black elderberry, large-leaved linden tree, common blueberries, common raspberries, black raspberries, henbane, medicinal marshmallow, chamomile, etc.

**Organisation of MPM Preservation**

Proper storage and preservation are important factors in maintaining a high degree of quality of the drug. Hard-packed bales, barks, and resinous drugs usually reabsorb little moisture. But leaf, herb, and root drugs that are not well packed tend to absorb amounts of moisture that reach 10, 15, or even 30% of the weight of the drug. Excessive moisture not only increases the weight of the drug, thus reducing the percentage of active constituents, but also favors enzymatic activity and facilitates fungal growth.

Light adversely affects drugs that are highly colored, rendering them unattractive and possibly causing undesirable changes in constituents. The oxygen of the air increases oxidation of the constituents of drugs, especially when oxidases are present. Therefore, the warehouse should be cool, dark, and well ventilated with dry air.

The protection of drugs against attacks by insects must not be overlooked. The simplest method is to expose the drug to a temperature of 65°C. This method is probably the most efficient not only in preventing insect attacks but also in preventing many other forms of deterioration.

Small lots of drugs may readily be stored in tight, light-resistant containers. Tin cans, covered metal bins, or amber glass containers are the most satisfactory. Drugs should not be stored in wooden boxes or in drawers and never in paper bags. Deterioration is hastened, also odors are communicated from one drug to another, attacks by insects are facilitated, and destruction by mice and rats may occur. If drugs in small quantities are stored in tight containers, insect attack can be controlled by adding to the container a few drops of chloroform or carbon tetrachloride from time to time.

Because high temperatures accelerate all chemical reactions, including those involved in deterioration, drugs must always be stored at as low a temperature as possible. The ideal temperature is just above freezing, but since this is impractical in most cases, the warehouse or other storage place should be as cool as possible.

 **Rational use of natural resources of medicinal plants and preservation of the environment**

Medicinal plant materials harvesting is regulated by instructions that provide the following nature protection directions: wild growing medicinal plants form State stocks of natural medicinal resources of the country; all ground and forest areas, where medicinal plants are grown, form natural plant growth places of medicinal resources; harvesting of materials on territories, that are in state, cooperative or public possession, is carried out according to established rules; collection of rare species of medicinal plants is carried out with the special license only.

Medicinal plants should be divided into the resource groups to provide more effective protection of medicinal plants. The first group consists of plants that are recommended to harvesting. Protection of these plants consists in rational utilization of their growth sites (collection of the species only from the areas, included in the annual plan, obedience of calendar order in harvesting on the plant growth sites.) The total volume of material harvesting should not exceed the calculated volume of possible annual harvesting of each kind of MPM.

For plants with a prolonged post-harvesting regeneration and deficient MPM, it is recommended that natural reserve areas be founded.

The second group consists of species with the limited resource bases. These species should not be planned for harvesting until their resources will be restored (*Althea officinalis, Valeriana spp, Inula helenium, Adonis vernalis, Convallaria majalis*). The third group consists of rare medicinal plants (*Arnica montana, Astragalus spp., Gentiana lutea, Atropa belladonna*).These species should be excluded from harvesting plans.

Correlation of protection, utilization and restoration of the plant world are regulated by Constitution of Azerbaijan, The Law of Azerbaijan "On Protection of the Environment "and The Law of Azerbaijan "On Natural and Reserved Resources of Azerbaijan", The Forestry Code of Azerbaijan, The Law of Azerbaijan " On the Plant World".

Legislation acts are aimed at protection of natural expansive, specious, populative and cenotic diversity of plant world objects and their life conditions; scientifically based and non-exhausting use of natural plant resources; prediction of negative influence of human activity on plant world; protection of plant world objects from fires, diseases; restoration of the plant world objects; regulation of distribution and numbers of wild-growing plant species and the utilization of stocks with the purpose of health protection.

According to The Law of Azerbaijan "On Plant world", protection of plant world is provided by establishment of rules and standards of protection, use and restoration of plant world objects; carrying out of ecological expertise to predict destroying of the plant world objects as a result of human activity; foundation of territories and objects of natural reserved resources; organization of scientific investigations, directed on protection and restoration of plant world objects; formation of State registration and carrying out of State control for protection, use and restoration of the plant world; inserting of plant formations and species, that are rare or in risk of disappearance, in the so called Red Book and Green Book of Azerbaijan; establishment of judicial responsibility for violations of the laws and order of utilization of the natural resources.