# Research of the assortment of medicinal plants and herbal raw materials in pharmacy organizations of the Republic of Sakha (Yakutia)

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# Research of the range of medicinal plants and medicinal plant raw materials in pharmacy organizations of the Sakha Republic (Yakutia)

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SUMMARY

Presented by results medico-sociological research assortment herbal medicinal products used in official and folk medicine in the Far North and the Arctic of the Republic of Sakha (Yakutia). An online sociological survey was conducted using an original questionnaire among pharmaceutical workers - management personnel of pharmacy organizations in the Republic of Sakha (Yakutia). Various socio-demographic and production characteristics of respondents and pharmacies where they work were obtained. The information base of medicinal plants, which are available in the assortment of pharmaceutical organizations, and for which there is a demand from the population, has been determined. A list of 83 plants has been prepared, systematized into portfolio lists according to pharmacotherapeutic criteria, for the manufacture of dosage forms in the conditions of pharmacy organizations or for independent use by the population at home for a number of diseases and as prevention or rehabilitation. The resulting lists of medicinal plants can vary depending on the specific morbidity in the local area and the methods of pharmacotherapy used in the practical treatment of medical and pharmaceutical personnel.

Key words: traditional medicine, medicinal plants, medicinalherbal products, assortment, portfolio lists, pharmaceutical assistance, local herbal resources.

RESUME

The publication presents the results of a medicosociological study of the range of medicinal plant products used in official and folk medicine in the Far North and Arctic regions of the Sakha Republic (Yakutia). An online sociological survey based on an original questionnaire was conducted among pharmaceutical workers - management personnel of pharmacy organizations in the Sakha Republic (Yakutia). Various sociodemographic and production characteristics of respondents and pharmacy organizations where they work were obtained, which made it possible to prove the possibility of using them as professional specialists on the problem under study. With the use of marketing concepts, the information base of medicinal plants was determined, which are available in the assortment of pharmacy organizations and there is a demand for them from the population. A list of 83 plants has been prepared, systematized into portfolio lists according to pharmacotherapeutic criteria, for the manufacture of dosage forms in the conditions of pharmacy organizations or for independent use by the population at home for a number of diseases and as prevention or rehabilitation. The resulting lists of medicinal plants are not fixed for each pharmacy organization or paramedicmidwife station, but may vary depending on the specific morbidity in the local area and the methods of pharmacotherapy used in the practical treatment of medical and pharmaceutical personnel. for the manufacture of dosage forms in the conditions of pharmacy organizations or for independent use by the population at home for a number of diseases and as prevention or rehabilitation. The resulting lists of medicinal plants are not fixed for each pharmacy organization or paramedicmidwife station, but may vary depending on the specific morbidity in the local area and the methods of pharmacotherapy used in the practical treatment of medical and pharmaceutical personnel. for the manufacture of dosage forms in the conditions of pharmacy organizations or for independent use by the population at home for a number of diseases and as prevention or rehabilitation. The resulting lists of medicinal plants are not fixed for each pharmacy organization or paramedicmidwife station, but may vary depending on the specific morbidity in the local area and the methods of pharmacotherapy used in the practical treatment of medical and pharmaceutical personnel.

Keywords: traditional medicine, folk medicine, informal medicine, medicinal plants, herbal medicines, medicinal herbal preparations, medicinal plant raw materials, assortment, portfolio lists, pharmaceutical assistance, local plant resources, Republic of Sakha (Yakutia).

## INTRODUCTION

This article is a continuation of a series of publications devoted to the medico-sociological research "Medicines in our life", carried out with the participation of residents of the Republic of Sakha (Yakutia) (RS (Y)) [1]. At the first stage of the study, we obtained and published scientific facts about the positive attitude of the population of Yakutia to folk (traditional, unofficial, alternative) medicine, in particular to herbal medicine, using food and medicinal plants (HR) growing in the Far North and the Arctic. In particular, we have shown that the residence of the population of the republic in hard-to-reach territories presupposes the possibility of using local food plants and RL at home, especially in cases of minor ailments and for the purpose of prophylaxis,

The results obtained (in particular, the reliably positive attitude of the population of the Republic of Sakha (Yakutia) to traditional medicine and the Republic of Lithuania) motivated us to continue the study in terms of studying the range of herbal medicines and products offered today in regional pharmacy organizations (AO). From our point of view, it is of practical interest to evaluate the assortment of products based on plant raw materials, taking into account indications for use: to relieve problems of the cardiovascular system, gastrointestinal tract, respiratory system, musculoskeletal system, metabolic disorders, as well as to fill the deficiency in the body of vitamins, macro- and microelements, for adaptation to adverse external conditions and for other therapeutic and prophylactic purposes.

We considered it necessary to conduct this study with the participation of pharmaceutical workers of the republic's AO, since they (in their AO) can be the best experts on the supply and demand of phytoproducts, that is, those sales that are initially formed by the population in the Far North and the Arctic [2] ...

The purpose of this work is a medico-sociological study (with the participation of pharmaceutical specialists) of the range of medicinal products and medicinal plant raw materials used in JSC RS (Y) as therapeutic agents of traditional medicine.

Research tasks and stages:

- preparation of a special questionnaire for pharmaceutical specialists and conducting a sociological survey;
- formation of the information base of the Republic of Lithuania, growing in the northern regions of the territory of the Republic of Sakha (Yakutia);
- analysis of indicators of the LR assortment (availability or supply, demand) in JSC RS (Y), taking into account the pharmacotherapeutic action and indications for use;
- Formation of approximate portfolio lists of HR types for the implementation of therapeutic and prophylactic measures in the field of traditional (folk) medicine in the regions of the Far North and the Arctic using marketing concepts.

## MATERIALS AND METHODS

In this study, the semantic equivalence (synonymy) is conventionally implied in the main terms for the concept of traditional medicine - folk medicine, traditional medicine, informal medicine, alternative medicine; as well as terms for the concept of official medicine: official - academic medicine, scientific medicine, as well as evidence-based medicine.

Study characteristics: medico-sociological, selective, descriptive, epidemiological, observational (observational, analytical), market (marketing), pilot.

The objects of the study were: the opinion of pharmaceutical specialists, an assortment of medicinal products and medicinal herbal raw materials (MPRs) available in AO. As pharmaceutical specialists, the study involved management workers from JSC RS (Y).

The sociological survey was carried out by filling out a specially prepared by us original online questionnaire "Herbal Medicines in Traditional Medicine" based on the Google-form technology. The design of the questionnaire was developed by representatives of the scientific school of Professor N.B. Dremova (Dremova N.B., Solomka S.V., KSMU, Kursk) [3] and associate professor Tarabukina S.M., performing marketing research of drug supply in RS (Y), within the framework of the agreement on scientific cooperation of the Kursk State Medical University and North-Eastern Federal University named after M.K. Amosova (Yakutsk).

The study was conducted in May-July 2020. 55 people took part in it; 54 questionnaires (complete, informative) were selected for statistical processing.

Methods used in the work: general scientific (systemic, logical), sociological (survey, questionnaire), economic and mathematical - for statistical processing (variation statistics, structural analysis, comparative analysis, grouping, ranking, graphical) [4], as well as marketing concepts goods (product, assortment, "funnel") [5, 6, 7].

As a hypothesis of the study, an assumption was made about the possibility and feasibility of studying the assortment of goods from LRS to JSC in order to optimize procurement management decisions.

## Research results and their discussion

### 1. Socio-demographic and professional portrait of the respondents

To participate in the sociological survey, the number of respondents was initially determined with the condition of one employee from the management personnel from one JSC according to the formula: n = N / (1 + 0.015N),

where n is the sample (number); N is the general population.

In our case, N = 222 AO in the studied regions of the RS (Y). After calculations, the number of the recommended sample was 52 people. Statistical processing was carried out using 54 full-fledged informative questionnaires.

We have obtained the following socio-demographic characteristics of the respondents:

- only women - 100% (in recent studies, such facts are often met);
- age from 25 to 64 years (i.e. able-bodied) - 100%;
- the predominant share in the age structure - the range of 45–64 years (that is, with extensive experience and long-term work experience) - 75.5%;
- 60.4% live in urban and 39.6% in rural areas (a significant share of urban specialists among respondents is due to the frequent lack of stable access to the Internet in rural areas of the country's northern territories).

Professional characteristics: 73.6% have a higher pharmaceutical education - chemists, and 26.4% - pharmacists with a specialized secondary. Among the respondents, 49.1% have the highest (28.3%) and first (20.8%) qualification categories, which confirms their high professional competence. Half of the respondents have over 30 years of experience - 51%, from 20 to 30 years - 27.4%, that is, among experts 78.4% have at least 20 years of experience. The structure of respondents in terms of work experience in their specialty is similar. Among the survey participants, 35.8% of the respondents have work experience in the Arctic and the Far North, from 20 to 30 years - 22.6%, and up to 20 years - 41.6%. Consequently, it can be argued that professional specialists took part in the sociological survey.

### 2. Production characteristics of the joint-stock company where the respondents work

Basically, the respondents work in private joint-stock companies - 73.6%. For our study, this characteristic is important, since it allows JSCs to form an assortment, including HR and MP, mainly independently, taking into account the demand of the population.

The location of the JSC affects the traffic rate of visitors, on which sales depend (assortment and turnover). Therefore, the AOs located in the center of the settlement are in more favorable conditions: 52.8% in urban and 35.8% in rural settlements.

Among pharmacies, 66% sell only finished medicinal products (MP), including packaged MPs, and 34% additionally have production departments, which gives them the opportunity to

independently produce medicinal product from medicinal product.

Half of the presented JSCs serve less than 100 people per day - 50.9%, while 37.7% - from 100 to 200 people; therefore, 88.6% of JSCs serve up to 200 people a day.

In AO, the value of average checks varies from 100 to over 1000 rubles, but in 77.3% - from 200 to 1000 rub.

The breadth of the trade assortment in joint-stock companies varies from 1 to 4–5 thousand items, with 85% of joint-stock companies having an assortment of up to 3 thousand items.

The volume of monthly sales in most JSCs (94.4%) ranges from 1 to 3 million rubles. The

assortment of goods in JSC is diverse. In particular, phytoproducts are present in 90.6% of JSCs, including herbal medicinal products (PLP), registered by the Ministry of Health of Russia in accordance with the established procedure. Domestic goods in value terms occupy from 30% to 40% in less than half of the AO (41.5%). The same situation looks different in physical terms - in more than half of JSCs (58.5%) the share of domestic products in the assortment structure ranges from 50% to 70%.

The share of the OTC drug group, which includes phytoproducts, is in value terms from 30% to 60% in the overwhelming majority of JSCs (88.7%); in kind - from 30% to 60% also in the overwhelming majority of JSCs (in 86.7%).

Thus, our analysis of a number of production characteristics allows us to consider the JSC, where the respondents work, as typical. The assortment of these JSCs includes phytoproducts, and the management personnel can be qualified as “experts on the research problem”.

### 3. Formation of the information base of the Republic of Lithuania, growing in the northern regions of the territory of the Republic of Sakha (Yakutia)

To form the information base, we used the publication "Medicinal Plants of Yakutia" [8], which includes the most widespread in Yakutia, the Republic of Lithuania, recognized as official medicine, and also used in the practice of traditional medicine. In total, the publication describes 97 main species, but there are references to 86 more closely related species, similar in chemical composition and properties.

Additionally, information about finished products from medicinal products was used:

- about LPR, registered in accordance with the established procedure and included in the State Register of Medicines [9];
- about phytoproducts mentioned in a number of educational and reference publications [10–17].

Hereinafter, phytoproducts and medicinal products are understood only as packaged medicinal products for retail sale in JSCs, as well as medicinal products for preparing dosage forms in JSCs that have a production department.

To include one or another type of drug in the questionnaire, we used the method of forming portfolio lists based on pharmacotherapeutic criteria - 9-10 plants most often used for therapeutic and prophylactic measures. First of all, the species LR growing on the territory of the Republic of Sakha (Yakutia) or closely related to them were included. The respondents were offered 6 such lists and one more - of 24 plants for various therapeutic purposes, many of which do not grow in RS (Y), but are available for purchase in AO (Table 1).

Table 1

Information base of medicinal plants (portfolio lists) on a pharmacotherapeutic basis in pharmacy organizations of the Republic of Sakha (Yakutia)

(in descending order of the demand indicator)

| | Medicinal plant (* - the species is absent in the book "Medicinal Plants of Yakutia" [8]) | Index demand |
|---|---|---|
| 1. Cardiovascular system | | |

| | Medicinal plant<br>(* - the species is absent in the book "Medicinal Plants of Yakutia" [8]) | Index<br>demand |
|---|---|---|
| 1 | Rose hips and other types of rose hips, allowed to honey. application (Rosa acicularis Lindl., Rosa majalis Hermm. et al.) | 0.51 |
| 2 | Hawthorn dahurian and other types of hawthorn allowed for honey. application (Crataegus dahurica Koechne ex Schneid. et al.) | 0.41 |
| 3 | Bird knotweed (knotweed) (Polygonum aviculare L.) | 0.38 |
| 4 | Sandy immortelle (Helichrysum arenarium (L.) Moench.) * | 0.38 |
| 5 | Large plantain (Plantago major L.) | 0.34 |
| 6 | Fragrant dill (Anethum graveolens L.) * | 0.34 |
| 7 | Motherwort heartwort and motherwort five-lobed (Leonurus cardiaca L., Leonurus quinquelobatus Gilib.) | 0.32 |
| eight | Field horsetail (Equisetum arvense L.) | 0.31 |
| nine | Melilotus officinalis (L.) Pall | 0.29 |
| ten | Yarrow (Achillea millefolium L.) | 0.24 |
| 2. The digestive organs | | |
| 1 | Stinging nettle (Urtica dioica L.) | 0.64 |
| 2 | Dandelion officinalis (Taraxacum officinale (L) Weber ex FHWigg.) | 0.54 |
| 3 | Alder buckthorn (Frangula alnus Mill. (= Rhamnus frangula L.)) * | 0.44 |
| 4 | Field horsetail (Equisetum arvense L.) | 0.41 |
| 5 | Wormwood (Artemisia absinthium L.) | 0.39 |
| 6 | Marsh calamus (Acorus Calamus L.) | 0.36 |
| 7 | Large plantain (Plantago major L.) | 0.35 |
| eight | Thyme, synonym: creeping thyme (Thymus serpyllum L.) | 0.35 |
| nine | Common tansy (Tanacetum vulgare L.) | 0.32 |
| ten | Yarrow (Achillea millefolium L.) | 0.22 |
| 3. Respiratory organs | | |
| 1 | Scots pine (Pinus sylvestris L.) | 0.54 |
| 2 | Dandelion officinalis (Taraxacum officinale (L) Weber ex FHWigg.) | 0.54 |
| 3 | Hanging birch, downy birch (Betula pendula Both., Betula pubescens Ehrh.) * | 0.53 |
| 4 | Common mother-and-stepmother (Tussilago farfara L.) | 0.50 |
| 5 | Large plantain (Plantago major L.) | 0.48 |
| 6 | Field horsetail (Equisetum arvense L.) | 0.44 |
| 7 | Violet tricolor, field violet (Viola tricolor L., Viola arvensis Murr.) * | 0.42 |
| eight | Thyme, synonym: creeping thyme (Thymus serpyllum L.) | 0.34 |
| nine | Marsh Ledum (Ledum palustre L.) | 0.32 |
| ten | Fragrant dill (Anethum graveolens L.) * | 0.27 |
| 4. The musculoskeletal system | | |
| 1 | Marsh cinquefoil (Comarum palustre L.) * (dietary supplement) | 1.20 |
| 2 | Common lingonberry (Vaccinium vitis-idaea L.) | 0.60 |
| 3 | Scots pine (Pinus sylvestris L.) | 0.57 |
| 4 | Dandelion officinalis (Taraxacum officinale (L) Weber ex FHWigg.) | 0.52 |
| 5 | Bearberry (Arctostaphylos Uva-Ursi (L.) Spreng.) | 0.38 |
| 6 | Hanging birch, downy birch (Betula pendula Both., Betula pubescens Ehrh.) * | 0.37 |
| 7 | Common tansy (Tanacetum vulgare L.) | 0.35 |

| | Medicinal plant<br>(* - the species is absent in the book "Medicinal Plants of Yakutia" [8]) | Index<br>demand |
|---|---|---|
| eight | Wormwood (Artemisia absinthium L.) | 0.31 |
| nine | Field horsetail (Equisetum arvense L.) | 0.27 |
| ten | Marsh Ledum (Ledum palustre L.) | 0.22 |
| 5. Metabolic agents | | |
| 1 | Wild strawberry (wild strawberry) (Fragaria vesca L.) * | 1.07 |
| 2 | Common blueberry (Vaccinium myrtillus L.) | 0.74 |
| 3 | Dandelion officinalis (Taraxacum officinale (L) Weber ex FHWigg.) | 0.66 |
| 4 | Common lingonberry (Vaccinium vitisidaea L.) | 0.65 |
| 5 | Rhodiola rosea L. | 0.64 |
| 6 | Hanging birch, downy birch (Betula pendula Both., Betula pubescens Ehrh.) * | 0.51 |
| 7 | Stinging nettle (Urtica dioica L.) | 0.45 |
| eight | Yarrow (Achillea millefolium L.) | 0.26 |
| nine | Field horsetail (Equisetum arvense L.) | 0.23 |
| 6. Sources of vitamins and vital macro and microelements | | |
| 1 | Common blueberry (Vaccinium myrtillus L.) | 0.83 |
| 2 | Black currant (Ribes nigrum L.) * | 0.83 |
| 3 | Common lingonberry (Vaccinium vitisidaea L.) | 0.75 |
| 4 | Rowan (Sorbus aucuparia L.) | 0.57 |
| 5 | Rose hips and other types of rose hips, allowed to honey. application (Rosa acicularis Lindl., Rosa majalis Hermm. et al.) | 0.57 |
| 6 | Scots pine (Pinus sylvestris L.) | 0.55 |
| 7 | Sea buckthorn (Hippophae rhamnoides L.) * | 0.45 |
| eight | Hanging birch, downy birch (Betula pendula Both., Betula pubescens Ehrh.) * | 0.42 |
| nine | Stinging nettle (Urtica dioica L.) | 0.33 |
| ten | Yarrow (Achillea millefolium L.) | 0.22 |
| 7. Various healing purposes | | |
| 1 | Eyebright (Euphrasia officinalis Lsl) * (dietary supplement) | 0.73 |
| 2 | Bird cherry (Prunus padus L.) | 0.64 |
| 3 | Ordinary cuff (Alchemilla vulgaris L.) * (BAA) | 0.58 |
| 4 | Orthilia one-sided, synonym: upland uterus (Orthilia secunda (L.) House) (dietary supplement) | 0.56 |
| 5 | Sage officinalis (Salvia officinalis L.) * | 0.46 |
| 6 | Chaga (birch mushroom) (Inonotus obliquus (Pers.) Pil. f. Sterilis (Van.) Nikol.) | 0.46 |
| 7 | Common oak (pedunculate), rock oak (bark) (Quercus robur L., Quercus petraea (Matt.) Liebl.) (Cortex) * | 0.45 |
| eight | Greater celandine (Chelidonium majus L.) | 0.44 |
| nine | Three-part succession (Bidens tripartita L.) | 0.41 |
| ten | Chamomile (Matricaria recutita L. Rausch.<br>(= Matricaria chamomilla L., Chamomilla recutita (L.) Rausch.)) | 0.40 |
| eleven | Pharmacy Burnet (Sanguisorba officinalis L.) | 0.36 |
| 12 | Common centaury, beautiful centaury (Centaurium erythraea Rafn., Centaurium pulchellum (Swartz) Druce) * | 0.36 |
| 13 | Marshmallow officinalis, Armenian marshmallow (Althaea officinalis L., Althaea armeniaca Ten.) * | 0.35 |
| fourteen | Calendula officinalis, synonym: marigold lek. (Caledula officinalis L.) * | 0.32 |
| 15 | Peppermint (Mentha piperita L.) * | 0.30 |

| | Medicinal plant<br>(* - the species is absent in the book "Medicinal Plants of Yakutia" [8]) | Index<br>demand |
|---|---|---|
| 16 | Naked licorice, Ural licorice (Glycyrrhiza glabra L., Glycyrrhiza uralensis L.) * | 0.30 |
| 17 | Valeriana officinalis (Valeriana officinalis Lsl) | 0.30 |
| eighteen | Erect cinquefoil (Potentilla erecta (L.) Raeusch) * | 0.29 |
| 19 | Erva woolly, synonym: half-fallen (Aerva lanata (L.) Juss.) * | 0.28 |
| twenty | Lemon balm (Melissa officinalis L.) * | 0.25 |
| 21 | Maize columns with stigmas (Zea mays L .; styli cum stigmatis) * | 0.23 |
| 22 | Oregano (Origanum vulgare L.) * | 0.23 |
| 23 | St. John's wort, St. John's wort (Hypericum perforatum L., Hypericum maculatum Cranz) * | 0.22 |
| 24 | Heart-shaped or small-leaved linden - Tilia cordata Mill. (syn. Tilia parvifolia Ehrh.) and flat-leaved or large-leaved linden - Tilia platyphyllos Scop. (Syn. Tilia grandifolia Ehrh) * | 0.20 |

Among the answers of 54 experts, it was noted that there are phytoproducts in pharmacies from most of the above 83 plant names (79 officinal species and four, widely used as dietary supplements), but the local population also uses closely related species mentioned in the book "Medicinal Plants of Yakutia" for their own needs [ eight]. It is quite natural that some plant species (due to the variety of active substances contained in them and the characteristics of the action of LRP) were simultaneously included in several lists on a therapeutic basis. For example, large plantain is mentioned in the lists of plants for the treatment and prevention of diseases of the cardiovascular system, digestive organs, and respiratory organs.

In the questionnaires, the respondents also indicated the demand for medicinal plants in their AOs, namely the indicators “availability (supply) of phytoproducts in the range of AOs” and “indicative demand” (no study of specific demand values was conducted). Using these data, we calculated the demand indicators for all 83 plant species as the ratio of the indicative demand indicators to the indicators of the availability of AO in the assortment (Table 1) [5]. The study revealed an interesting fact that the same plants in different pharmacotherapeutic lists may have different demand indicators.

The grouping of assortment indicators by the amount of demand is presented in table. 2. We have used the generally accepted values of the intervals for the grouping method, in particular: 1) 0.00–0.29; 2) 0.30–0.49; 3) 0.50-0.69; 4) 0.70-1.00; 5) over 1.00 (demand exceeds supply).

table 2

Results of the structural analysis of indicators of the range of herbal medicinal products in pharmacy organizations of the Republic of Sakha (Yakutia) (54 experts, July 2020)

| No.<br>p / p | Pharmacotherapeutic group<br>(effect on body systems) | | If-<br>honor | Demand indicators | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 0.00-0.29 | 0.30-0.49 | 0.50-0.69 | 0.70-1.00 | > 1.00 |
| 1 | The cardiovascular system | | ten | 2 | 7 | 1 | - | - |
| 2 | Digestive organs | | ten | 1 | 7 | 2 | - | - |
| 3 | Respiratory system | | ten | 1 | 5 | 4 | - | - |
| 4 | Musculoskeletal system | | ten | 2 | 4 | 3 | - | 1 |
| 5 | Metabolic agents | | nine | 2 | 1 | 4 | 1 | 1 |
| 6 | Sources of vitamins and microelements. | | ten | 1 | 3 | 3 | 3 | 0 |
| 7 | Different goals | | 24 | 7 | 13 | 3 | 1 | - |
| Total | | number | 83 | 16 | 40 | twenty | 5 | 2 |
| | | share,% | 100.0 | 19.3 | 48.2 | 24.1 | 6.0 | 2.4 |

As can be seen from the results of the structural analysis of the indicators of the assortment of PLM in the AOs where the respondents work, a fifth - 19.3% falls on the LPP with low demand rates from 0.00 to 0.29 - there are 16 such plants in the general list; LRP with average indicators - 60 plants, which is 72.3% - this is the sum of groups with indicators 0.30-0.49 and 0.50-0.69. The remaining less than a tenth - 8.4% - falls on LPP with high demand - 7 plants.

Plants in high demand include:

- marsh cinquefoil and wild strawberry (common) (demand indicators are more than 1.00);
- common blueberry, eyebright, common lingonberry, black currant (demand indicators within 0.70–1.00);
- briar rosehip and its other species, dioecious nettle, medicinal dandelion, coltsfoot, Scots pine, silver birch and downy birch, Rhodiola rosea, common mountain ash, Orthilia one-sided, bird cherry, common cuff (demand indicators within 0, 50-0.69).

Presented in table. 1, the results can be considered as basic (approximate) portfolio lists of LRP for AO RS (Y), compiled with the participation of experts (management personnel) of pharmaceutical specialists working in AO regions of the Far North and the Arctic.

In addition, in our opinion, the obtained basic portfolio lists of LRs may be of particular value for the provision of medicines for feldsher-obstetric points (FAP), presented in hard-to-reach sparsely populated areas and having great problems with the delivery of goods (1–2 times a year). Currently, the personnel of these medical organizations (doctors, paramedics), after appropriate additional training, have the right to sell a certain range of drugs to the population, including over-the-counter or prescription drugs. According to statistics (2012), in the Republic of Sakha (Yakutia) the number of actually sold trade names in FAPs is more than a thousand [18]. Roszdravnadzor issues licenses for the sale of medicinal products for rural residents in the constituent entities of the Russian Federation (FAP, outpatient clinics).

Taking into account the knowledge of the situation with the morbidity of residents in the territory served by the FAP, it can be assumed that drugs will be purchased, including herbal products, a specific assortment for chronically ill residents for six months or a year in advance, and a certain amount for the prevention of relapses of specific diseases, possible first aid in case of sudden cases. Such service (provision) is currently close to personalized medicine in the Arctic and the Far North.

Speaking about the relevance and importance of the assortment portfolio lists of the Republic of Lithuania, we consider it necessary to focus special attention on the informational and educational type of activity of medical and pharmaceutical specialists in pharmacies and FAPs in remote northern regions. When purchasing medicinal products, patients should be able to properly prepare a dosage form with the required amount of active substances, so as not to harm the patient due to possible side effects, or vice versa, so as not to lose the therapeutic effect due to the low concentration of active substances.

Information and educational activities in this case are implemented in various forms, in particular, in the form of pharmaceutical consulting when selling phytoproducts sold or working with a patient under a pharmaceutical assistance program; education on the correct use of wild medicinal plants in places of residence of the population (collection, storage, quality preservation, preparation of dosage forms) and resource-saving measures. It is also possible to create schools for health, healthy lifestyle, home herbal medicine, etc. [12, 19, 20].

Table 3 shows an example of the Information base of the Republic of Sakha (Yakutia) LR (for example, 32 species), which we consider expedient to use for educational and educational activities in AO.

Table 3

Information base of medicinal plants in Yakutia (on the example of 32 species of RL)

(according to [8, 12, 13, 14, 15, 16, 17, 24, 26])

| No. | Name LR | Spreading | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| 1. | Marsh calamus - Acorus calamus L. Sem. Aroid - Araceae | Homeland is considered India and China, introduced to Europe Tatar-Mongol skye nomads, at about XIII-XIV centuries. Currently distributed over throughout Eurasia. In Yakutia, a meeting only available in central and southern regions. | Rhizomes contain essential oils (5%), mono- and sesquiter-noids, asaron, bitter glycoside acorin, fragrant calamus oil, alkaloid calamine (carrier odor), starch, resins, tanning substances, ascorbic acid. | Rhizomes (blank spend autumn) | It is part of the preparations "vikalin", "vikair" and the gastric collection prescribed for chronic colitis, stomach and duodenal ulcers. Essential oil is part of the drug "olimetin", which is used to remove salts from the body and treat urinary and gallstone disease. In folk medicine used for allergies, gout, heartburn, for the treatment of rheumatism, diseases of the skin, hearing, vision, bronchitis, pneumonia, as an antihelminthic agent. |
| 2. | Ledum marsh - Le-dum palustre L. Sem. Heather-vye - Ericaceae | Has extensive area including all of Eurasia and North America. Found throughout the territory of Yakutia, apart from arctic zones. | In the aboveground part contains ether nye oil (iceol and palustrol), pheno-ly, organic acids, myrcene, germacron, cymene, geranyl acetate, hydrocarbons, trace elements. | Escapes (annual leafy shoots) and inflorescences - blank spend from the beginning of color before ripening vaniya seeds. | Included in the preparations "ledin", "eleopton". It is used as an expectorant for bronchitis, tuberculosis, as well as for spastic enterocolitis. In folk medicine used in the form of ointments for bruises, skin diseases, joint pain, cardiovascular diseases, etc. |
| 3. | Birch flat leaf - Betula platyphylla Sukacz. Sem. Berezovykh - Betulaceae | Unofficial view. Occurs on all over Europe and Siberia. In Yakutia distributed in all areas except for tundra zones. Official types are: Hanging birch fluffy birch, Birch warty (Betula pendula Both., Betula pubescens Ehrh., Betula verrucosa Ehrh.). | In all parts plants contained biologically active substances: in wood - steroids and their derivatives, higher fatty acids, higher aliphatic alcohols; in the bark - betulin, phytosterol, glyco-zida; saponins, tannin; in the leaves - essential oils, glycosides; in juice - ascorbic acid, sugar, tanning substances, etc. | Wood, bark, kidneys, leaves, juice | Birch coal is used for poisoning, birch tar is part of the ointments of Vishnevsky, Wilkinson, Konkov. The kidneys are used as a diuretic, antiseptic, expectorant, choleretic, with edema of cardiovascular origin, etc. Leaves are used as a vitamin, anti-inflammatory, urinary and choleretic agent. V folk medicine is widely used - to reduce joint pain, as a choleretic, diuretic, with skin diseases, etc. |

| No. | Name Distribution LR | | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| 4. | Hawthorn daurian - Crataegus dahurica Koehne ex Schneid. Sem. Rosaceae - Rosaceae | Occurs in southern part forest and steppe zones of Eastern Siberia and Dalniy East. In Yakutia circulated in central, southern and northern eastern regions. | The flowers contain there are flavonoids, triterpene acids, nitrogen-containing connections, tannins tva, microelement you flavonoids. | Flowers, fruit | It is a part of the complex preparation "cardiovalen". It is applied when functional disorder of cardiac activity, heart failure, angioedema, insomnia. In folk medicine, leaves and berries are used for increased blood pressure. |
| 5. | Cowberry common - Vaccinium vitisidaea L. Sem. Heather-vye - Ericaceae | Occurs in coniferous forests north european parts of Eurasia and North America. Widespread injured all over the territory of Yakutia. | The leaves contain there are glycoside arbutin, organic acids, flavonoids, organic acid, micro elements, tanning ny substances, ascorbic acid, etc. | Leaves, shoots, fruit (berries) | Used as an astringent and antiseptic for diarrhea, liver diseases, pulmonary tuberculosis, uterine bleeding, cystitis, vitamin deficiency, hypertension, rheumatism, diabetes, hypertension, with a lack of vitamins A and C. In folk medicine used for colds, for the treatment of lichen, as a tonic, wound healing, anthelmintic, antiscorbutic agent. |
| 6. | Valerian medicinal - Valeriana officinalis L. Sem. Valerian - Valerianaceae | Has an extensive range in Yakutia practically everywhere apart from arctic districts, grows valerian's view alternate-leaved (Valerianaalternifolia Bunge), which is synonymous Valerian medicinal. | Contains essential oils, valerian acid, esters, trace elements. | Rhizomes with roots | It is part of the preparations "Corvalol", Zelenin drops, various sedatives and gastric charges. In folk medicine it is used as soothing, for pain in the heart, neurasthenia, diseases gastrointestinal tract. |
| 7. | Blueberry - Vaccinium uliginosum L. Sem. Veres-some - Ericaceae | Unofficial view. Has a wide cue area. V Yakutia meets everywhere. | Contains tanning ny substances, carbohydrates, organic acid, microele-cops, flavonoids. | Leaves, fruit (berries) | In folk medicine used for fever, scurvy, as a vitamin and anthelmintic agent, for stomatitis and dysentery, for diabetes mellitus, as a mild laxative. |
| eight. | Bird highlander (knotweed) - Polygonum aviculare L. Sem. Buckwheat ny - | Wide widespread plant all over the world (cosmopolitan). In Yakutia, common everywhere | Contains flavonoids (avicularin and quercitrin), do-strong substances, phenolcarboxylic | Grass | It is used as a diuretic, anti-inflammatory, blood-stopping, choleretic agent. Reduces blood pressure, improves lung function. In folk medicine |

| No. | Name LR | Spreading | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| | Polygonaceae | except for the Arctic. | acids, microelements, vitamins P, C and dr. | | used for malaria, tumors, inflammation and pulmonary tuberculosis, hemorrhoids, with uterine bleeding, infertility, whooping cough, gastritis, various seizures, to speed up wound healing. |
| nine. | Siberian spruce - Picea obovata Ledeb. Sem. Pine - Pinaceae | The area covers Eastern Europe, Siberia, Dalniy East. In Yakutia distributed in southern and central districts. Count melts as a subspecies or variety the official species Spruce common vennaya or spruce European (Picea abies (L.) Karst.) | The needles are rich ascorbic acid, microelements (iron, manganese, chrome, aluminum, copper), ethereal oils, vitamins, tanning substances, etc. | Needles, young spring shoots, immature seed bumps, resin | It is part of the drug "pinabin", which has an antispasmodic effect on the muscles of the urinary tract. Used for renal colic and kidney stones. In folk medicine, needles are used as antiscorbutic. Infusions of spring shoots are used for colds, rheumatism, chronic bronchitis, etc. |
| ten | Strawberry eastern - Fragaria orientalis Losinsk. Sem. Rosaceae - Rosaceae | Unofficial view. Areal coverage the Eastern Asia, Mongolia, Korea. In Yakutia found in the center sweeping areas, less often - in the western and southern. Official nal close related species is the strawberry forest (Fragaria vesca L.). | In fruits contains 55% ascorbic acids, carotene, vitamin B, organic acids, tanning and pectin substances, etc. | Leaves, fruits, grass, rhizomes | Fresh fruits are used for anemia. Tincture from dried fruit recommend as light antipyretic, diuretic, as well as for gout, uterine bleeding, vitamin deficiency. In folk medicine, infusion and decoction of leaves is used for hypertonia, skin diseases, rickets, scrofula, liver and spleen diseases; a decoction of flowering grass - as a diuretic and with jaundice; fresh berries - for gastritis and indigestion; infusion of berries and leaves - when uterine and nasal bleeding. |
| eleven. | Cladonia deer - Cladonia rangiferina (L.) Weber ex FHWigg. = Cladina rangiferina (L.) Harm. Sem. Kladino-vye (Cladonium-vye) - Cladoniaceae | Unofficial view. Lichen, one of the main reindeer moss components along with others species of this genus. Occurs in forest and tundra zones and mountain regions of Eurasia and America. In Yakutia | Contains fumar protective center acid, atronorine, carbohydrates and lichenin. | Whole plant | Used as an abscess, as well as for the treatment of pulmonary diseases. In folk medicine used as anti-inflammatory, laxative, soothing, wound healing, anti-tuberculosis, hemostatic, antimicrobial, choleretic |

| No. | Name LR | Spreading | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| | | circulated all over the place. | | | means. |
| 12. | Nettle two-home - Urtica dioica L. Fam. Nettle - Urticaceae | Has Eurasian cue area. V Yakutia meets in all areas. | Contains vitamin C, carotene, others carotenoids, B vitamins, K, E and organic acids, flavo-noids, tanning substances, etc. | Leaves (blank spend in time flowering), grass | Apply as hemostatic, an agent that enhances the contractile activity of the uterus and increases blood clotting. In folk medicine it is used as an anti-inflammatory, expectorant, improving the functioning of the heart, liver, kidneys, for gout, diabetes, hemorrhoids, etc. |
| 13. | Burnet pharmacy - Sanguisorba officinalis L. Sem. Rosots-venerable - Rosaceae | Eurasian boreal view. In Yakutia meets all over the place. | The plant is rich tanning substances flavonoids saponins, vitamins microelements. | Rhizomes and roots | Used as an astringent remedy for gastrointestinal diseases, as well as a hemostatic for uterine and hemorrhoidal bleeding, as bactericidal and anti-inflammatory means. In addition, in folk medicine it is used for headaches, dysentery, and bruises. |
| fourteen. | Coltsfoot common - Tussilago far-fara L. Fam. Astrovye - Asteraceae | Has extensive area. In Yakutia found in south and central areas. | Leaves contain mucus, bitter gly-cozids, tanning substances, organ-cic acids, vitamins, etc. | Flowers, leaves | Used as an expectorant, anti-inflammatory agent for diseases of the upper respiratory tract, is a part of diaphoretic, breast and anti-sclerotic tea. In addition, in folk medicine it is used as a wound-healing agent, in the absence of appetite and general weakness, hair loss. |
| 15. | Field mint - Mentha arvensis L. Fam. Lamiaceae (Lipoids) - Lamiaceae (Labiatae) | Unofficial view. Widely distributed extensive in Eurasian zia and north America. In Yakutia found in south and central areas. Official nal close related species is mint pepper (Mentha piperita L.). | Essential oil, contains menthol, carvone, karen and derivatives terpenes as well carotene, flavonoids. | Leaves, grass | It is used as a gastric, analgesic, disinfectant, refreshing agent. It is part of validol, drops, ointments, fees. V folk medicine is used for migraine, neuralgia, as an antitussive, expectorant; with tachycardia, nausea, vomiting, allergies; as an astringent and appetite-enhancing agent. |
| 16. | Dandelion | Unofficial | The current | Roots, in | Used as bitterness |

| No. | Name Distribution LR | | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| | horned - Taraxacum ceratophorum (Ledeb.) DC. Sem. Astrovye - Asteraceae | view. Occurs in Siberia, on The Far East, in North America. In Yakutia, Tranen is ubiquitous but. Official closely related kind is Dandelion drug (Taraxacum officinale (L.) Webb ex FHWigg.). | substance is bitter glycoside - taraxacin. Soder- live carotenoids, flavonoids, do- strong substances, ascorbic acid. | folk medicine also use grass | for stimulating appetite, constipation, anacid gastritis, with gout and gallstone disease. In folk medicine of different countries and peoples it is used for a wide range of diseases. Yakuts take the root infusion orally for liver diseases, rub the root infusion with sore spots with rheumatism; crushed leaves and milk sap squeezed out of the plant are treated for polyarthritis; powder from dry leaves is inhaled with sinusitis. |
| 17. | Ortilia one-side (borovaya uterus) - Orthilia secunda (L.) House Sem. Grushankovye - Pyrolaceae | Unofficial plant. In the pharmacy nominal assortment presented as Dietary supplement. Has an extensive ny Eurasian and north American area. In Yakutia meets almost ubiquitous in forest zone. | Contains tanning ny substances, arbutin, free hydroquinone, organ- nic acids, flavonoids. | Grass | In folk medicine used for various gynecological diseases: infertility, erosion of the cervix, inflammation, etc. Also used as a diuretic, for inflammatory kidney diseases, for the treatment of purulent wounds, hemorrhoids, diarrhea. |
| eighteen | Common tansy venous - Tana- cetum vulgare L. Sem. Astrovye - Asteraceae | The area covers Eurasia and the North new America. In Yakutia, a meeting ubiquitous except for the Arctic. | Contains essential oils, tanning substances, organic acids, vitamins, trace elements. | Flowers, in folk medicine - leaves, grass, inflorescences | The flowers are choleretic, antiseptic, antihelminthic and insecticidal. properties. A drug "Tanacehol" is used as an antispasmodic agent for cholecystitis and biliary dyskinesia. In addition, in folk medicine, tansy is used for purulent skin lesions, rheumatism, joint pain, scabies. |
| 19. | Plantain big - Plan-tago major L. Sem. More expensive nicknames - Plantaginaceae | The area covers almost all Eurasia and North America. In Yakutia found in central and southern regions | Leaves contain glycoside aucubin, bitterness, mucus, tanning substances, saponin, carotene, vitamins C and K, flavonoids, etc. | Leaves, in folk medicine - leaves, seeds and roots | The drugs have wound healing, anti-inflammatory, antimicrobial, expectorant hemostatic laxative and moderately lowering blood pressure action. In the folk medicine is used for |

| No. | Name LR | Spreading | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| | | | | | diseases of the respiratory tract, heart, stomach intestinal, kidney, liver; as a wound healing, hemostatic, antineoplastic agent, etc. |
| twenty. | Sagebrush common - Artemisia vulgaris L. Sem. Astrovye - Asteraceae | The area covers a significant part the globe. V Yakutia meets everywhere except arctic zone. | Contains essential oils, mucous membranes, resinous, sugar sulfuric substances, vitamins, carotene, coumarins, saponins. | Grass (vol-deciduous tops), in folk medicine - also lower leaves and roots | The herb is a part of the medicine Zdrenko, it is used as agent improving digestion. Possesses antipyretic antihelminthic, antiseptic, tonic properties. In folk medicine in many countries used as a blood-reducing agent, pain reliever anticonvulsant, for diseases of the digestive system, diabetes mellitus, etc. |
| 21. | Motherwort pya-telopatic - Leonurus quinquelobatus Gilib. Sem. Yasnotko-vye (Lips) Lamiaceae (Labiatae) | Occurs in Europe and Western Siberia. In Yakutia grows in central areas. | Basic actions active substances - flavonoid glycosides. Also contains saponi-us tanning essential substances oils, microele-cops, etc. | Grass | It is used in the form of an infusion and nastoika as a sedative for hypertension, cardiosclerosis, heart defects, increased nervous excitability, as well as for neuro-dermis, eczema, psoriasis, etc. In folk medicine used for heart and nervous diseases, headaches, asthma, rheumatism, etc. |
| 22. | Chamomile medicine naya - Matricaria recutita L. Rausch. (= Matri-caria chamomilla L., Chamomilla recutita (L.) Rausch.) Sem. Astrovye - Asteraceae | Has a wide Eurasian and North American cue area. In central and southern regions Yakutia meets closely related view - Chamomile odorous (fragrant) (Chamomilla suaveolens (Pursch) Rydb.). | Contains essential oil, in composition which includes more than 40 components, in including hamazulen, sesqui-terpenes, etc. Contains flavono-ides, pectins, organic acids, etc. | Flowers (floral baskets) | Used as spasmolytic, anti-inflammatory, antiseptic agent, for intestinal spasms, flatulence, diarrhea, diseases gastrointestinal tract. The infusion is used for rinsing with angina, gingivitis, stomatitis, periodontal disease. It is a part of gastrointestinal preparations, etc. It is one of the most popular plants of traditional medicine for various diseases |

| No. | Name Distribution LR | | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| 23. | Common pine venous - Pinus sylvestris L. Sem. Pine - Pinaceae | The area covers the whole territory Eurasia. Prod- melt into central noy and southern part of Yakutia. | Contains essential oils, phytoncides, tannins wa, mineral salt, ascorbic acid, etc. | Kidneys, spring young shoots, needles | It is used for compresses and rubbing for neuralgia, radiculitis, rheumatism, gout, for diseases of the upper respiratory tract, for inhalation, as a disinfectant and deodorizing agent. In folk medicine, they are not used for tuberculosis, as antiscorbutic, choleretic, wound healing agent, for gout, rheumatism, uterine bleeding, etc. |
| 24. | Bearberry common - Arctostaphylos uva ursi (L.) Spreng. Sem. Heather - Ericaceae | Found throughout Eurasia, North America, Greenlan diy. In Yakutia, it is widespread everywhere, apart from arctic zones. | Contains arbutin glycoside and methyl arbutin, tanning essential substances oils, vitamin C, carotene, flavono- ides, organic acid. | Leaves, escapes | Applied in the form of infusion, decoction and extract as a diuretic, antiseptic and astringent for catarrh of the bladder, urinary tract, bleeding and inflammation of the kidneys, kidney stones disease, bladder stones, chronic cystitis. In folk medicine, they are used for urinary incontinence, renal and venereal diseases, to strengthen the nervous system as anthelmintic. |
| 25. | Yarrow ordinary - Achillea millefolium L. Sem. Astrovye - Asteraceae | Grows all over temperate zone Northern hemisphere. V Yakutia grows everywhere except arctic districts. | Contains carotene, saponins, flavonoids, coumarins, vitamins K, C, micro and macronutrients. | Grass, flowers, in folk medicine - also leaves | It is used as a hemostatic agent for internal, hemorrhoidal, uterine, nasal bleeding. Effective for gastritis, enteritis, colitis, liver disease, etc. folk medicine is used as a wound healing agent, hemostatic, improving digestion remedy, as well as for fevers, gynecological diseases. |
| 26. | Horsetail - Equisetum arvense L. Fam. Horsetails - Equisetaceae | Has a wide eurasian area. In Yakutia grows all over the place. | The herb contains vitamin C, carotene, alkaloids, flavonoids, tanning substances, silicon acid, | Grass | It is used as a diuretic, hemostatic, stimulating the function of the adrenal cortex, a cytotoxic agent for dermatoses. Included in fees sedative, hypoglycemic, hypoglycemic action. It is used for baldness as |

| No. | Name LR | Spreading | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| | | | organic acids, macro- and trace elements. | | silicon-containing preparation. In folk medicine, it is also used for liver diseases, rheumatism, lead poisoning, seborrhea. |
| 27. | Chaga (birch mushroom, tinder fungus beveled) - Inonotus obliquus (Pers.) Pil. f.sterilis (Van.) Nikol. Sem. Hymenochetoddles - Hymenochaetaceae | The area covers the whole territory temperate zone Northern semishariya. In Yakutia found in south s and central areas in the middle august subzone (forest zone). | The presence of a large amount of potassium defines radio chaga activity. Contains acids, quinones, phenolic aldehydes, pterins, sterols, chromogenic polyphenolic complex, etc. | Mushroom body or a build-up on trunks birch | Used for treatment gastritis, stomach ulcers, polyposis, precancerous diseases and some forms of malignant tumors. It is the basis of the drug Befungin. In small doses, it acts as a biostimulant that improves the course of metabolic processes in the body. V folk medicine is used as an anti-tumor and anti-gastritic agent, as a tonic infusion and decoction. |
| 28. | A series of three times efficient - Bidens tripartita L. Sem. Astrovye - Asteraceae | Occurs in Eurasia and North. America. In Yakutia distributed all over the place exception arctic zone. | Contains flavonoids, coumarins, carotenoids, bitterness, macro and trace elements. | Grass | Used to improve appetite and digestion, as diaphoretic, diuretic for colds, like<br><br>sedative. It has anti-inflammatory, antispasmodic, antiallergic action Is a part of diuretic fees Brusniver, Elekasol, and Zdrenko's collection. In folk medicine, they are used for skin diseases, rheumatism, liver diseases, anemia, atherosclerosis,<br><br>tuberculosis. |
| 29. | Bird cherry common - Prunus padus L. Sem. Rosaceae - Rosaceae | Occurs in forest zone Eurasia. In Yakutia distributed in central and southern regions. | Contains tanning ny substances, organic acids, vitamins, phytoncids, microelements, you oils. | Fruit, leaves, bark, flowers | Used as antimicrobial, anti-inflammatory, diuretic, diaphoretic means. The fruits are part of gastric tea. In folk medicine, they are used for treatment of diarrhea, sexually transmitted diseases, insomnia, rheumatism, fever, arthritis, rheumatism, dermatitis, for eye lotions, etc. |
| thirty. | Blueberry Ordinary - | Has a wide habitat in European part | Contains tanning ny substances, organic | Fruit, escapes | Used for enterocolitis, diarrhea, diabetes, heartburn, cystitis, stomatitis, sore throat, |

| No. | Name LR | Spreading | Chemical composition | LRS | Usage |
|---|---|---|---|---|---|
| | Vaccinium myr-tillus L. Sem. Heather-vye - Ericaceae | Eurasia and North America. In Yakutia meets in the south western and southern mountainous areas. | acids, carotene, vitamin C, myrtillin, ether oils, etc. | | burns. Included in the hypoglycemic collection of arfazetine and mirfazin, various dietary supplements to improve vision. In folk medicine, it is used for sugar diabetes, typhus, sore throat, pharyngitis, stomatitis, scurvy, to improve vision, etc. |
| 31. | Celandine big - Chelidonium majus L. Fam. Poppy - Papaveraceae | Main part the area is in Eurasia. In Yakutia found in south ny, southwestern and central areas. | Contains alkaline dy, etheric masses la, organic acids, flavono-ides, saponins, micro and macronutrients. | Grass | Applied externally for cauterization of warts, genital warts, for skin diseases, non-healing ulcers. Delays the growth of malignant tumors. It is used as a quality external anti-inflammatory, laxative, choleretic diuretic. It is included in the composition of Bremener's paste, cholelitin. In popular medicine, it is mainly used to treat skin diseases, acne, freckles pigment spots on the face. |
| 32. | Rose hip spiny - Rosa acicularis Lindl. Sem. Rosaceae - Rosaceae | Has extensive range in Europe and North America. In Yakutia, a meeting ubiquitous apart from arctic zones. | Contains vitamin us C, B, R, provita-min A, carotene, E, flavone glyco-zida, organic acid. | Fruit | Used for vitamin deficiencies, diseases of the liver, gallbladder, biliary tract, ulcers, bone fractures, exhaustion organism as wound healing, multivitamin remedy. Part of the hypoglycemic charges Arfa-etin and Mirfazin, diuretic fees Brusniver and Brusniver-T, various general tonic and vitamin fees, anti-asthma medicine Traskov, choleretic extract of holosas, etc. In folk medicine, decoctions from stems, roots, leaves, green fruits are also used for various purposes (diarrhea, cardiovascular diseases, malaria, diuretic, etc.). |

In a previous publication, we showed the advisability of using the experience and means of traditional medicine for preventive purposes or

at the initial stage of the development of the disease (including in conditions of temporary unavailability of official medical care), as well as at the stage of accompanying therapy in the provision of planned medical care and the stage of rehabilitation in order to minimize the negative consequences of the transferred diseases [1].

We consider it expedient to focus the attention of researchers (pharmacognosters, technologists, marketers, analysts, pharmacologists and other specialized specialists) on conducting comprehensive studies of local plant resources in order to expand the list of official medicinal products at the expense of closely related species growing in the studied areas, for their justified therapeutic use [21 , 22, 23, 24].

Such recommendations are based on scientific reports and official documents of the WHO (in the field of traditional and traditional medicine) about the most beneficial effect on the inhabitants of drugs from medicinal plant medicinal products from local areas producing medicinal products. In other words, medicinal and prophylactic effects on patients will undoubtedly be provided by medicinal products from plants collected in other territories, but medicinal products produced from local plant materials will be more effective prognostically [22–26].

## CONCLUSION

The use of modern research methods to assess the consumer characteristics of the assortment of medicinal products and medicinal products, relevant in a specific territory, allows obtaining scientific facts for developing optimal management decisions, such as, for example, basic portfolio lists of medicinal products and medicinal products.

The methodological approaches developed by us to the study of the range of phytoproducts purchased by the AO, taking into account the demand of the population and the possibilities of using it at home, are available to pharmaceutical and medical workers in the regions of the Far North and the Arctic.

Thus, the presence of the studied natural medicinal plant resources in remote and inaccessible places for a regular system of drug supply can be assessed as a real potential for solving extraordinary (non-standard) drug problems in rural health care.

## CONCLUSIONS

1. A medical and sociological study of the range of products based on medicinal plants in pharmacy organizations of the Republic of Sakha (Yakutia).

2. Sociological online survey of pharmaceutical workers (management personnel) pharmacy organizations of the Republic of Sakha (Yakutia) made it possible to obtain socio-demographic and production characteristics of both respondents and pharmacy organizations in which they work, as well as to prove the validity of their use as experts on the problem under study.

3.With the use of marketing concepts, an information base of medicinal products was determined. plants in the assortment of pharmacy organizations for which there is a real demand from the population.

4. Revealed a list of 83 plants classified into pharmacotherapeutic portfolio lists required for the manufacture of dosage forms in the conditions of pharmacy organizations or for independent use by the population at home for the treatment of diseases, prevention or rehabilitation.

5. It is shown that the use of modern research methods to assess consumer characteristics of the assortment of medicinal herbal raw materials and preparations based on it, allows you to obtain scientific facts and practical recommendations that are relevant in a specific territory, as well as use them to develop optimal management decisions regarding drug supply for the population of the Republic of Sakha (Yakutia), which uses, among other things, means and methods of traditional (folk) medicine.

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