

ANALYSIS OF PLANTS IN VETERINARY RESEARCH OF AZERBAIJAN ON ETHNOBOTANICAL MATERIALS

*Agayeva E.Z., **Ibadullayeva S.J., Asgerov A.A.*, Isayeva G.A.

*Azerbaijan State Agrarian University, ** Institute of Botany of the ANAS

ABSTRACT

Species structure of the plants used in folk veterinary was ascertained in the process of the ethnobotanical researches and an experiment analysis is provided from the point of view of present-day botanical resource study. Proposes on use of unique folk knowledge about ecological properties of plants in veterinary have been worked out. According to therapeutic effect plants can be divided into the following groups: plants used for effect onto central nervous system; plants used at cardiovascular system abnormalities; plants used at respiratory apparatus diseases; plants used at digestive apparatus diseases; plants used at prevention and cure avitaminosis; plants used at helminthiasis; medicinal herbs used at following diseases: liver, biliary tracts, kidneys, urinary tracts and bleeding.

Key words: medicinal plants, veterinary, ethnobotany

{**Citation:** Agayeva E.Z., Ibadullayeva S.J., Asgerov A.A., Isayeva G.A. Analysis of plants in veterinary research of Azerbaijan on ethnobotanical materials. American Journal of Research Communication, 2013, Vol 1 (4): 51-59} www.usa-journals.com, ISSN: 2325-4076.

INTRODUCTION

Creation of a complete picture of a person's relation with natural resources has got great scientific and practical significance nowadays. In this connection, there was a problem to reveal plant species used by local population of Azerbaijan as medicinal raw materials for cure of agricultural animals and to define use possibilities of this experience in today's practice of nature management.

Since the ancient times thanks to a comprehensive knowledge of useful plants Azerbaijani people widely used the available vegetative resources of the Republic [Vegetative raw materials of Azerbaijan, 1971; Gasymov, *et al.*, 2009].

The researches were carried out for the purpose of the experiment analysis of use of plants in national practice for cure of agricultural animals and definitions of use possibilities of this experience in present-day Ethnobotany of the Republic. According to the goal following problems were solved: to reveal content of plant species used in national veterinary; to analyze this experience from the point of view of present-day botanical resource science; to develop proposals on use of unique folk knowledge on plants biological and ecological properties, etc.

MATERIALS AND METHODS

The work was carried out in zones where the local population traditionally is engaged in live-stock industries. The basic method of study of the material was the inquiry method on the D.M.Cotton's method [Cotton, 1996]. At drawing up of questions G.F.Chursin's program on data acquisition of folk medicine has been used [Chursin, 1929].

The data containing in monographs, transactions, dissertations, articles of various authors and archival materials concerning to botanical researches have been used in the research [Grossgame, 1936; Hajiyev, 1970; 1974; Rabinovich, 1988; Hajiyev, etc., 1990; Ibadullayeva, 2005; 2013; Ibrahimov, 2005]. Private archives and articles of scientists of the Veterinary Faculty of the Azerbaijan State Agrarian University have been used too.

RESULTS AND DISCUSSION

A number of experiments in this aspect have been carried out by us in a farm of Ahmadbeyli Village of Samukh Region of Azerbaijan in 2009-2011. Note that before our sample experiments in a private farm at diseases of small horned and large horned livestock the treatment was basically implemented by synthetic preparations and antibiotics.

It was suggested to use instead of antibiotic therapy some herb based prescriptions extended in this territory since the ancient period as well as tested in private farms for years.

Medical activities have been directed onto elimination of pathogenic micro-flora and toxic actions; onto increase of organism resistibility; onto respiratory apparatus purification from inflammation as well as restoration of their functions.

At bronchial tubes inflammation the local population used set of plants. We have checked up medical effect of this set of plants at treatment of animals.

In December 2009 a complete recovery at four cows registered in the farm has been noted by means of below-mentioned set of plants within 7 days.

Broth of 3 parts consisted of the crushed licorice roots, 3 parts consisted of buckhorn plantain leaves and 4 parts consisted of coltsfoot leaves has been prepared. So that for 10litre of water was taken 300gr licorice root, 300gr plantain leaves and 400gr coltsfoot leaves; after decantation it at temperature 38-40° the broth was given instead of drink 3 times a day. Taking into account this broth contained sticky and mucous substances it has been prepared for a 2 days use.

As it is not required a special diet at treatment of diseases of respiratory apparatus there was no necessity to feed cattle with special forage. However we added a powder of flowers of clover trifoliolate possessing certain food value and medical effect at pulmonary diseases into the daily diet.

On the result of the experiment stopping of reflex cough has been noted in 5 minutes after broth application. In the 2nd day of the treatment temperature fall was observed. In the 10th day of the treatment weight increase was noted at the animals. After professional inspections (in lab conditions) in the 21st day of the treatment sending of the cow milk onto manufacture was resolved.

In April & May 2010 treatment of 6 animals was implemented in the farm by the following set of plants:

Four hours prior to application broth of equal parts (200gr each of them) thyme (*Thymus caucasicus*) leaves and cephalaria (*Cephalaria gigantea*) per 10 liter of water in a enameled ware was prepared. After decantation through gauze the broth was given to animals in a warm state instead of drink. In the first day of the treatment tone strengthening and increase of rhythms of heart as well as pulse normalization have been noted at the animals. In the 2nd day of the treatment disease symptoms decreased; exudation was softened and considerably decreased in the bronchial tubes. The animals were fed by easily digestive and qualitative forage during the treatment. The shed where the sick animals were isolated was regularly aired and at the same time they preserved against draughts. The positive effect was observed in the second day of the treatment. Complete recovery became in the 8th day.

In October 2010 experiments on use of other set of plants were carried out at avitaminosis treatment on three ill cows.

Hawthorn fruits, raspberry leaves (100gr hawthorn +100gr raspberry) were put in 10litre of water in an enameled ware. The infusion was kept in a dark place within 10 days. After decantation 20ml of the infusion was dissolved in 500ml of water and given to drink to the animals once a day. The treatment lasted two weeks. Effect of the treatment was achieved in the sixth day. Integument of the recovered cows became elastic, mucous membranes transparent and appetite has risen.

The efficiency of the treatment was confirmed by local veterinary surgeons. We recommend applying set of plants in farms that successes subjected to tests.

In January and December 2011 inflammation of bronchial tubes was revealed by a veterinary surgeon at three cows. Treatment was carried out as follows:

According to the abovementioned order a broth of raw materials consisted of three dried up plants as: medicinal soapwort (*Saponaria officinlis*), mullein (*Verbascum thapsus*), mallow (*Malva sylvestris*) was prepared in equal parts (per 200gr each of them). The obtained set of plants was given to animals 3 times a day 20 minutes before feeding.

Since the first day of the treatment simplification of disease symptoms was noticed. Since the 3rd day - cough reduction; stopping of nasal secretion, increase of appetite and full elimination of the short breath. The 5th day of the treatment crepitation stopped. Treatment proceeded 8 days. Complete treatment appeared on the 10th day. Thus, at the animals treated by herbs nasopharynxal secretion was moderately decreased; cough and epiphora stopped. At 9 ill animals out of 11 a positive therapeutic effect was 87 %. In some cases alongwith herbs adding a preparation sulfadimine (20 to 40 mlg/kg) was recommended by the Veterinary Surgeons. After 7 days of the combined treatment a positive effect was observed.

A number of researches and tests have been carried out in the farm on the purpose of resistibility increase of animals' organism and preventive maintenance of diseases at application of vitamin-rich herbs. The experiments were basically carried out in winter on the purpose of improvement of forage quality. 5 ill cows that revealed during inspection were placed into an isolated barn. Backlog in growth, sharp reduce of sight was noticed at the animals. Because of backlog in a daily gain and decrease of quality and yield of milk it was forbidden to use these cows' milk. Sick animals had infringements of nervous system. So, in the behavior of the animal excitability, flinching, twitching of muscles and separate groups of muscles were observed excitability appeared.

In accordance with the rules accepted in pharmaceutics a broth of sea-buckthorn fruits, flowers and leaves, was prepared in the ratio of 1:5 (100gr of each plant into 5litre of water; to boil for 20 minutes and infusion for 4 hours). The broth was prepared just in the day of use. The solution of 1litre was given to 5 animals within 10 days once a day instead of drink. Since the 5th day of the treatment we were ensured of reduction of disease signs. Amount of carotin in blood of animals was checked up in veterinary lab of Samukh Region. After use of the forages enriched by vitamins during lab analyses in the content of blood carotin increase was noted.

We consider it is important to develop, educate and widely distribute experience of use of herbs in veterinary practice. Ease of application, the low cost price provide a chance to Veterinary Surgeons and private farms to use phytotherapy at treatments of diseases of agricultural animals. Thus, having taxonomic analysis of the herbs used in scientific and national veterinary science we united them in separate groups depending on therapeutic effect (Table).

Taking into account high efficiency of the experiments it is planned to include powder of vitamin-rich herbs, broths of different set of plants and additives into forage of big-horned cattle and birds further. On this purpose 4,0 established posts of workers (position in the manning table) for plants collection additionally allocated in the farm. Building of barns for drying of plants has begun.

The results of the researches can be used for a reconstruction of a full scientifically-authentic picture of botany researches history at planning of research works of higher educational institutions and scientific institutions of corresponding profile as well as at revealing of a species variety of flora of the Republic and preparation of various floristic reports.

Calling examples and referring to the wide range of initial materials we have given a description of interaction history between plants and people; methods of Ethnobotany researches and their future direction.

A databank of 350 plant species has been established for practical use in veterinary science both in the past and at present.

First in the work data for treatment methods of the animals used by local population (received of different sources) have been generalised. The complex analysis of the ethnobotanical material presented in the research allows returning to discussion of ethnocultural history of one of the largest and important regions of Transcaucasia once again.

Table: The taxonomic analysis of the herbs used in scientific and national veterinary science according to therapeutic effect

Plants used at infringements of cardiovascular system	
<i>Ranunculaceae</i> Juss.	<i>Adonis wolgensis</i> Stev., <i>A.flammae</i> Jacq., <i>A.parviflora</i> Michx., <i>A.bienertii</i> Butk., <i>Adonis aestivalis</i> L., <i>Anemone kuznetzowii</i> Woronow ex Grossh., <i>A.ranunculoides</i> L.
<i>Celastraceae</i> P.Br	<i>Euonymus europaea</i> L.
<i>Convallariaceae</i> Horan.	<i>Convallaria transcaucasica</i> Utkin ex Grossh.
<i>Leguminosae</i> Juss.	<i>Astragalus igniarius</i> M.Pop., <i>Securigera securidaca</i> (L.) Degen&Doerfl., <i>Sphaerophysa salsula</i> (Pall.) DC, <i>Coronilla coronata</i> L., <i>C.scorpioides</i> (L.) Koch
<i>Rosaceae</i> Juss.	<i>Crataegus pentagyna</i> Waldst & Kit
<i>Valerianaceae</i> J.St.-Hil	<i>Valeriana officinalis</i> L., <i>Valerianella uncinata</i> (Bieb.) Duf.
<i>Scrophulariaceae</i> Juss.	<i>Veronica gentianoides</i> Vahl., <i>Linaria grandiflora</i> Desf., <i>Pedicularis crassirostris</i> Bunge, <i>Digitalis ferruginea</i> L.
<i>Asclepiadaceae</i> R.Br.	<i>Periploca graeca</i> L., <i>Cynanchum acutum</i> L.
<i>Cruciferae</i> Juss.	<i>Erysimum argyrocarpum</i> N.Busch., <i>Matthiola caspica</i> (N.Busch.) Grossh.
<i>Liliaceae</i> Juss.	<i>Gagea bulbifera</i> (Pall.)Salisb., <i>Tulipa biflora</i> Pall.
<i>Apocynaceae</i> Juss.	<i>Vinca herbaceae</i> Waldst&Kit
<i>Boraginaceae</i> Juss.	<i>Cynoglossum creticum</i> Mill. (=C.pictum Soland), <i>C.officinale</i> L.
<i>Rutaceae</i> Juss.	<i>Ruta graveolens</i> L.
<i>Thymelaeaceae</i> Juss.	<i>Daphne mezereum</i> L.
<i>Cucurbitaceae</i> Juss.	<i>Bryonia dioica</i> Jacq.
<i>Apiaceae</i> Lindl.	<i>Zosima orientalis</i> Hoffm.
<i>Lamiaceae</i> Lindl.	<i>Leonurus quinquelobatus</i> Gilib., <i>Scutellaria orientalis</i> L., <i>Nepeta cataria</i> L.
Plants used at diseases of respiratory apparatus	
<i>Apiaceae</i>	<i>Foeniculum vulgare</i> Mill., <i>Pimpinella saxifrage</i> L., <i>Eryngium giganteum</i> Bieb., <i>Carum carvi</i> L., <i>Bifora testiculata</i> (L.) Spreng.
<i>Malvaceae</i> Juss.	<i>Alcea rugosa</i> Alef., <i>A.kusariensis</i> Iljin., <i>A.lenkoranica</i> Iljin., <i>Althaea hirsuta</i> L., <i>A.officinalis</i> L.
<i>Ericaceae</i> Juss.	<i>Rhododendron luteum</i> Sweet., <i>Vaccinium vitis-idaea</i> L.
<i>Gramineae (Poaceae)</i>	<i>Elytrigia attenuatiglumis</i> (Nevski) Nevski,
<i>Adiantaceae</i> (C.Presl.) Ching.	<i>Adiantum capillus-veneris</i> L.
<i>Asteraceae</i> Dumort.	<i>Inula helenium</i> L., <i>I.grandiflora</i> Willd., <i>Tussilago farfara</i> L.

Leguminosae	<i>Melilotus officinalis</i> (L.) Pall., <i>Trifolium trichocephalum</i> Bieb., <i>Glycyrrhiza echinata</i> L.
Lamiaceae	<i>Origanum vulgare</i> L., <i>Thymus caucasicus</i> Willd. ex Ronn., <i>Mentha aquatica</i> L., <i>Ziziphora serpyllacea</i> Bieb., <i>Salvia pachystachya</i> Trautv.
Polygalaceae R.Br.	<i>Polygala sosnowskyi</i> Kem.-Nath.
Scrophulariaceae Juss.	<i>Verbascum phlomoides</i> L., <i>V.speciosum</i> Schrenk.
Caryophyllaceae Juss.	<i>Saponaria officinalis</i> L.
Primulaceae Vent.	<i>Primula macrocalyx</i> Bunge, <i>P.heterochroma</i> Stapf., <i>P.woronowii</i> Losinsk., <i>P.algida</i> Adams
Plantaginaceae Juss.	<i>Plantago major</i> L., <i>P.tenuiflora</i> Waldst&Kit, <i>P.media</i> L., <i>P.saxatilis</i> Bieb., <i>P.lanceolata</i> L., <i>P.loeflingii</i> L., <i>P.ovata</i> Forssk., <i>P.squalida</i> Salisb., <i>P.arenaria</i> Waldst&Kit.
Pinaceae Lindl.	<i>Pinus eldarica</i> Medw., <i>P.kochiana</i> Klotzsch ex C.Koch.
Violaceae Batsch	<i>Viola odorata</i> L., <i>Viola caucasica</i> Kolenati
Orchidaceae Juss.	<i>Anacamptis pyramidalis</i> (L.)Rich.
Boraginaceae	<i>Anchusa azurea</i> Mill.
Aristolochiaceae Juss.	<i>Aristolochia bottae</i> Jaub&Spach, <i>A.clematitis</i> L.
Plants used at diseases of digestion system	
Araceae Juss.	<i>Acorus calamus</i> L.
Moraceae Link	<i>Morus alba</i> L., <i>M.nigra</i> L., <i>Ficus carica</i> L., <i>F.hyrca</i> Grossh.
Menyanthaceae Dumort.	<i>Menyanthes trifoliata</i> L., <i>Nymphoides peltata</i> (S.G.Gmel.) O.Kuntze
Asteraceae	<i>Cnicus benedictus</i> L., <i>Taraxacum serotinum</i> Waldst. &Kit) Poir, <i>T. officinale</i> Wigg., <i>Artemisia vulgaris</i> L., <i>A.absinthium</i> L., <i>A.arenaria</i> DC, <i>A.scoparia</i> Waldst. & Kit, <i>A.monogyna</i> sensu Poljak., <i>A.szowitziana</i> (Bess.) Grossh., <i>A.lerchiana</i> , <i>A.spicigera</i> C.Koch, <i>Achillea wilhelmsii</i> C.Koch, <i>A.millefolium</i> L., <i>A.nobilis</i> L., <i>A.filipendulina</i> Lam., <i>A.neilreichii</i> A.Kerner, <i>Bidens tripartita</i> L., <i>Solidago virgaurea</i> L., <i>Matricaria chamomilla</i> L., <i>Senecio racemosus</i> (Bieb.) DC, <i>S.rhombifolius</i> (Adams) Sch. Bip.
Gentianaceae Juss.	<i>Gentiana schistocalyx</i> (C. Koch), <i>G.gelida</i> Bieb., <i>G.cruciata</i> L., <i>Gentianella caucasea</i> (Lodd.ex Sims) Holub., <i>Centaurium pulchellum</i> (Sw.) Druce
Apiaceae	<i>Coriandrum sativum</i> L.
Alliaceae J.Agardh.	<i>Allium victorialis</i> L., <i>A. ursinum</i> L., <i>A. sativum</i> L.
Lamiaceae	<i>Melissa officinalis</i> L., <i>Salvia pachystachya</i> Trautv.
Ranunculaceae	<i>Nigella oxypetala</i> , <i>Nigella oxypetala</i> Boiss.
Cruciferae Juss.	<i>Coronopus squamatus</i> (Forssk.) Aschers, <i>Sisymbrium altissimum</i> L., <i>S.loeselii</i> L., <i>S.officinale</i> (L.) Scop., <i>S.runcinatum</i> Lag. Ex DC
Leguminosae	<i>Cassia acutifolia</i> Del., <i>Cassia obovata</i> Hayn., <i>Cassia angustifolia</i> Vahl.
Rhamnaceae Juss.	<i>Frangula alnus</i> Mill., <i>Rhamnus catharica</i> L.
Crassulaceae DC.	<i>Sedum stevenianum</i> Rouy & Camus, <i>S.acre</i> L.
Polygonaceae Juss.	<i>Rheum ribes</i> L., <i>Polygonum alpinum</i> All., <i>P.aviculare</i> L., <i>P.carneum</i> C.Koch., <i>P.hydropiper</i> L., <i>P.persicaria</i> L., <i>Rumex acetosa</i> L., <i>R.cofertus</i> Willd.
Thymelaeaceae Juss.	<i>Stelleropsis magakjanii</i> (Sosn.) Pobed.
Rosaceae	<i>Cydonia oblonga</i> Mill., <i>Geum urbanum</i> L., <i>Sanguisorba officinalis</i> L., <i>Padus avium</i> Mill., (= <i>P.racemosa</i> (Lam.) Gilib.
Malvaceae	<i>Malva iljinii</i> I.Riedl., <i>M.sylvestris</i> L.

<i>Orchidaceae</i>	<i>Gymnadenia conopsea</i> (L.) R.Br., <i>Orchis picta</i> Loisel.
<i>Boraginaceae</i>	<i>Symphytum caucasicum</i> Bieb.
<i>Saxifragaceae</i> Juss.	<i>Saxifraga hirculus</i> L.
<i>Geraniaceae</i> Juss.	<i>Geranium sanguineum</i> L.
<i>Fagaceae</i> Dumort.	<i>Quercus pedunculiflora</i> C. Koch. (= <i>Q. longipes</i> (Stev.) O.Schwarz., <i>Q. erucifolia</i> (Stev.) Gagnidze), <i>Q. castaneifolia</i>
<i>Hypericaceae</i> Juss.	<i>Hypericum perforatum</i> L.
<i>Salicaceae</i> Mirb.	<i>Salix triandra</i> L.
<i>Caprifoliaceae</i> Juss.	<i>Lonicera xylosteum</i> L.
<i>Plumbaginaceae</i> Juss.	<i>Limonium carnosum</i> (Boiss) O.Kuntze
<i>Betulaceae</i> S.F.Gray	<i>Alnus subcordata</i> C.A.Mey., <i>Betula pendula</i> Roth. (= <i>B. verrucosa</i> Ehrh.)
<i>Solanaceae</i> Juss.	<i>Hyoscyamus reticulatus</i> L., <i>Atropa caucasica</i> Kreyer. <i>Datura stramonium</i>
Vitamin-rich plants	
<i>Urticaceae</i> Juss.	<i>Urtica dioica</i> L., <i>Urtica urens</i> L., <i>Urtica pilulifera</i> L.
<i>Rosaceae</i>	<i>Rubus saxatilis</i> L., <i>R. Buschii</i> Grossh.ex Sinjkova, <i>Rosa canina</i> L., <i>Sorbus aucuparia</i> L. (= <i>S. caucasigena</i> Kom.ex Gatsch.), <i>S. torminalis</i> (L.) Crantz, <i>Malus orientalis</i> Uglitzk., <i>Filipendula vulgaris</i> Moench
<i>Asteraceae</i>	<i>Cirsium vulgare</i> (Savi) Ten., <i>Taraxacum serotinum</i> (Waldst. & Kit) Poir., <i>Solidago virgaurea</i> L., <i>Calendula persica</i> C.A.Mey., <i>Bidens tripartita</i> L.
<i>Berberidaceae</i> Juss.	<i>Berberis iberica</i> Stev.&Fisch. ex DC., <i>B. vulgaris</i> L.
<i>Primulaceae</i>	<i>Primula macrocalyx</i> Bunge
<i>Polygonaceae</i>	<i>Polygonum hydropiper</i> L., <i>P. persicaria</i> L.
<i>Caryophyllaceae</i> Juss.	<i>Stellaria media</i> (L.) Vill.
<i>Fagaceae</i>	<i>Castanea sativa</i> Mill.
<i>Saxifragaceae</i>	<i>Saxifraga hirculus</i> L.
<i>Capparaceae</i> Juss.	<i>Capparis herbacea</i> Willd. (= <i>C. spinosa</i> auct.)
<i>Cruciferae</i> Juss.	<i>Sinapis arvensis</i> L., <i>Capsella bursa-pastoris</i> (L.) Medik
<i>Juglandaceae</i> A.Rich.ex Kunth	<i>Juglans regia</i> L.
<i>Lamiaceae</i>	<i>Melissa officinalis</i> L.
<i>Elaeagnaceae</i>	<i>Hippophae rhamnoides</i> L.
Plants used anti helminth	
<i>Punicaceae</i> Horan.	<i>Punica granatum</i> L.
<i>Rosaceae</i>	<i>Amygdalus fenzliana</i> (Fritsch)Lipsky, <i>A. Nairica</i> Fed.&Takht.
<i>Asteraceae</i>	<i>Artemisia vulgaris</i> , <i>A. absinthium</i> , <i>A. scoparia</i> , <i>Tanacetum millefolium</i> (L.) Tzvel., <i>Achillea wilhelmsii</i> , <i>Anthemis tinctoria</i> L., <i>Inula helenium</i> L., <i>Pyrethrum silaifolium</i> Stev., <i>P. carneum</i> Bieb., <i>P. cinerariifolium</i> Trev., <i>Matricaria recutita</i> L., <i>Lepidotheca aurea</i> (L.) Kovalevsk., <i>Arctium lappa</i> L., <i>A. tomentosum</i> Mill., <i>A. palladini</i> (Marc.) Grossh., <i>A. nemorosum</i> Lej.
<i>Hypericaceae</i> Juss.	<i>Hypericum perforatum</i> L.
<i>Lamiaceae</i>	<i>Thymus kotschyanus</i> Boiss.et Hohen., <i>Ziziphora serpyllacea</i> Bieb., <i>Satureja hortensis</i> L., <i>Origanum vulgare</i> L.,
<i>Iridaceae</i> Juss.	<i>Gladiolus italicus</i> Mill. (= <i>G. segetum</i> Ker-Gawl.)
<i>Cruciferae</i> Juss. nom altern	<i>Alliaria petiolata</i> (Bieb.) Cavara&Grande (= <i>A. officinalis</i> Andr. ex), <i>Raphanus rostratus</i> DC.
<i>Alliaceae</i> J.Agardh.	<i>Allium ursinum</i> L., <i>Allium sativum</i> L., <i>Allium cepa</i> L.

<i>Polygonaceae</i>	<i>Rumex acetosa</i> L.
<i>Ranunculaceae</i>	<i>Ranunculus acutilobus</i> Ledeb.
<i>Caryophyllaceae</i> Juss.	<i>Saponaria cerasroides</i> Fisch. Ex C.A.Mey., <i>S.officinalis</i> L. <i>S.orientalis</i> L.
<i>Leguminosae</i>	<i>Lotus angustissimus</i> L., <i>Lupinus albus</i> L., <i>Trifolium repens</i> L.
<i>Pinaceae</i> Lindl.	<i>Pinus eldarica</i> Medw., <i>P.kochiana</i> Klotzsch.
<i>Ephedraceae</i> Dumort.	<i>Ephedra procera</i> Fisch.&C.A.Mey.
<i>Apiaceae</i>	<i>Ferula persica</i> Willd., <i>Daucus carota</i> L.
<i>Aspidiaceae</i> Mett. ex Frank. nom. illegit	<i>Dryopteris expansa</i> (C.Presl.) Fraser-Jenkins&Jermy, <i>D.filix</i> – <i>mas</i> (L.) Schott
<i>Chenopodiaceae</i> Vent.	<i>Anabasis aphylla</i> L., <i>A. eugeniae</i> Iljin, <i>Beta maritima</i> L., <i>B.macrorhiza</i> Stev., <i>B.lomatogona</i> Fisch.&C.A.Mey.
<i>Corylaceae</i> Mirb.	<i>Corylus avellana</i> L.
<i>Sterculiaceae</i> Beilschm.	<i>Ledum palustre</i> L.
<i>Elaeagnaceae</i>	<i>Hippophae rhamnoides</i>
<i>Asteraceae</i>	<i>Artemisia vulgaris</i> , <i>A.absinthium</i> , <i>A.scoparia</i> , <i>Tanacetum millefolium</i> , <i>Anthemis tinctoria</i> L., <i>Inula helenium</i> L., <i>Pyrethrum silaifolium</i> Stev., <i>P.carneum</i> Bieb., <i>P. cinerariifolium</i> Trev., <i>Matricaria recutita</i> L., <i>Lepidotheca aurea</i> (L.) Kovalevsk., <i>Arctium lappa</i> L., <i>A.tomentosum</i> Mill., <i>A.palladini</i> (Marc.) Grossh., <i>A.nemorosum</i> Lej.
<i>Melanthiaceae</i> Batsch	<i>Veratrum lobelianum</i> Bernh.
<i>Linaceae</i> DC.ex S.F.Gray	<i>Linum catharticum</i> L., <i>Linum usitatissimum</i> L.
<i>Rutaceae</i> Juss.	<i>Dictamnus caucasicus</i> (Fisch.&C.A.Mey.) Grossh.
<i>Lamiaceae</i>	<i>Ziziphora serpyllacea</i> Bieb., <i>Lamium amplexicaule</i> L.
<i>Fagaceae</i>	<i>Fagus orientalis</i> Lipsky
<i>Buxaceae</i> Dumort.	<i>Buxus hyrcana</i> Pojark., <i>B.colchica</i> Pojark.
<i>Boraginaceae</i>	<i>Cynoglossum creticum</i> Mill. (= <i>C.pictum</i> Soland), <i>Symphtum caucasicum</i> Bieb., <i>S.asperum</i> Lepech., <i>S.pereginum</i> Ledeb., <i>Lithospermum officinale</i> L.
<i>Papaveraceae</i> Juss.	<i>Chelidonium majus</i> L.
<i>Geraniaceae</i> Juss.	<i>Erodium oxyrrhynchum</i> Bieb., <i>E.fumaroides</i> Stev., <i>E.cicutarium</i> (L.) L.Her.
<i>Apiaceae</i>	<i>Peucedanum ruthenicum</i> Bieb., <i>Pastinaca umbrosa</i> Stev. Ex DC, <i>P.armena</i> Fisch.&C.A.Mey., <i>P.pimpinellifolia</i> Bieb.
<i>Scrophulariaceae.</i>	<i>Kickxia elatine</i> (L.) Dumort. (= <i>K.caucasica</i> Muss.-Puschk. Ex Sprehg.)
<i>Anacardiaceae</i> Lindl.	<i>Cotinus coggygria</i> Scop.
<i>Dioscoreaceae</i> R.Br.	<i>Tamus communis</i> L.
Plants used at diseases of liver, kidney, gall and urinary tracts as well as bleeding	
<i>Pteridaceae</i> Reichenb.	<i>Adiantum capillus veneris</i> L.
<i>Apiaceae</i>	<i>Laser trilobum</i> (L.) Borkh., <i>Apium graveolens</i> L., <i>Grammosciadium daucoides</i> DC., <i>Bupleurum rotundifolium</i> L., <i>Visnaga daucoides</i> Gaerth.
<i>Lamiaceae</i>	<i>Origanum vulgare</i> L., <i>Ziziphora serpyllacea</i> Bieb., <i>Hyssopus angustifolius</i> Bieb., <i>Betonica nivea</i> Stev.
<i>Cupressaceae</i> Rich.ex Bartl.	<i>Juniperus oblonga</i> Bieb.
<i>Cannabaceae</i> Endl.	<i>Cannabis ruderalis</i> Janisch.
<i>Ranunculaceae</i>	<i>Aconitum confertiflorum</i> (DC.) Gayer, <i>Talictrum sultanabadense</i> Stapf.

<i>Apocynaceae</i> Juss.	<i>Vinca herbaceae</i> Waldst. & Kit
<i>Papaveraceae</i> Juss.	<i>Papaver arenarium</i> Bieb., <i>P. orientale</i> L., <i>P. hybridum</i> L., <i>P. rhoeas</i> L., <i>Roemeria hybrida</i> (L.) DC.
<i>Leguminosae</i>	<i>Galega officinalis</i> L., <i>G. orientalis</i> Lam., <i>Genista dracunculoides</i> Spach (= <i>G. transcaucasica</i> Schischk.), <i>G. patula</i> Bieb.
<i>Cyperaceae</i> Juss.	<i>Carex acrifolia</i> V. Krecz., <i>C. michelii</i> Host., <i>C. brevicollis</i> DC.
<i>Scrophulariaceae</i>	<i>Veronica gentianoides</i> Vahl, <i>V. officinalis</i> L.
<i>Rubiaceae</i> Juss.	<i>Rubia rigidifolia</i> Pojark., <i>R. tinctorum</i> L. (= <i>R. iberica</i> (Fisch. Ex DC.) C. Koch)
<i>Ericaceae</i> Juss.	<i>Vaccinium vitis-idaea</i> L.
<i>Gentianaceae</i> Juss.	<i>Centaurium pulchellum</i> (SW.) Druce, <i>C. erythraea</i> Rafn, <i>C. umbellatum</i> Gilib.
<i>Caryophyllaceae</i>	<i>Herniaria glabra</i> L., <i>H. hirsuta</i> L.
<i>Asparagaceae</i> Juss.	<i>Asparagus verticillatus</i> L.
<i>Asteraceae</i>	<i>Helichrysum plicatum</i> DC., <i>Centaurea bruguierana</i> (= <i>T. belangeriana</i> (DC.) Stapf.), <i>C. cyanus</i> L., <i>Urospermum picroides</i> (L.) Scop. Ex F. W. Schmidt.
<i>Anacardiaceae</i> Lindl.	<i>Rhus coriaria</i> L.
<i>Rosaceae</i>	<i>Potentilla bifurca</i> L., <i>P. reptans</i> L., <i>P. erecta</i> (L.) Raeusch.
<i>Equisetaceae</i> Rich. ex DC.	<i>Equisetum telmateia</i> Ehrh., <i>E. arvense</i> L., <i>E. palustre</i> L., <i>E. fluviatile</i> L., <i>E. ramosissimum</i> Desf., <i>E. hyemale</i> L.
<i>Sambucaceae</i> Batsch. ex Borkh.	<i>Sambucus ebulus</i> L., <i>S. nigra</i> L.

REFERENCES

- Hajiyev V.J.** (1970), High-mountainous vegetation of the Great Caucasus and its economical significance. Baku, 'Elm', 281 p-s.
- Hajiyev V.J.** (1974), Dynamics of vegetation of highlands of eastern part of the Great Caucasus. Flora of highlands and its mastering, L, 1974 p-s.
- Hajiyev V.J, Aliev J.A, Guliev V.Sh, Vahabov Z.V.** (1990). Highland vegetation of Small Caucasus. Baku, 'Elm', 210 p-s.
- Gasymov G.Z, Guliev V.B, Ibadullayeva S.J.** (2009). Wild food plants in Naxçıvan Autonomous Republic of Azerbaijan on materials of ethno-botanical researches. St.-Petersburg. Vegetative resources, issue 2, Vol. 45, p. 109-115.
- Grossgame A.A.** (1936). Analys of flora of Caucasus. / Works of Bot. Inst. of the Azerb. Branch of the Acad. of Sciences of the USSR, Baku.
- Ibadullayeva S.J.** (2005). *Apiaceae* Lindl. Flora of Azerbaijan (questions on resource science). Autoreferate of the Dissert. ... Dr. of Biol. Scen. Baku.
- Ibadullayeva S., Alakberov R.** Medicinal plants (Ethnobotany and Phytoterapy). 2013. 330p.
- Ibrahimov A.Sh.** (2005). Vegetation of the Naxçıvan Autonomous Republic and its economic significance. Baku: 'Elm', 230p-s.
- Rabinovich M.I.** (1988). Veterinary phytotherapy//Moscow, Rosagropromizdat. 166p-s.
- Vegetative raw materials of Azerbaijan.** (1971) Baku: Pub/house 'Elm', 185p-s.
- Chursin G.F.** (1929) A programme for ethnographic data collecting. It's compiled with reference to a life of the Caucasian peoples. Pub/house for Publ. Survey and Study. Azerbaijan.
- Cotton C.M.** (1996) Ethnobotany: Principles and application. Chichester-New-York-Brislane-Toronto-Singapore: John Willey and Sons.