

A brief overview of the medicinal properties of unabi *Ziziphus jujuba*

O.D. Barnaulov

(N.P. Bekhtereva Institute of the Human Brain, Russian Academy of Sciences, St. Petersburg,
Russia)

THE SHORT REVIEW OF MEDICINAL PROPERTIES ZIZIPHUS

JUJUBA

OD Barnaulov

NP Bechtereva Human Brain Institute RAS (St. Petersburg, Russia)

SUMMARY

The assimilation of the experience of traditional medicine has been declared by the World Health Organization as a priority area of medicine in the 21st century. The fruits, leaves, bark of unabi *Ziziphus jujuba* have been used in traditional medicine in China, Iran, India, Korea, Japan for over 4000 years. Unabi is effective for hypertension, tuberculosis, other cardiovascular and bronchopulmonary diseases. The effectiveness of unabi in diabetes mellitus, atherosclerosis, intestinal infections, intoxications, allergic and other diseases has been experimentally and clinically proven. A review of the multidirectional therapeutic effect of unabi, an elite plant of traditional medicine, was made with the aim of the fastest introduction of this food plant into the practice of Russian doctors.

Key words: unabi, herbal medicine.

RESUME

The assimilation of traditional medicines experience is declared by World Health Organization as a priority direction of medicine development in XXI century. The *Ziziphus jujuba* (Zj) fruits, leaves, cortex are used by traditional medicines of China, India, Iran, Korea, Japan and other countries for more than 4000 years. The Zj is effective remedy for treating patients with hypertension, tuberculosis and other cardio-vascular, pulmonary diseases. The Zj effective treating of diabetes, atherosclerosis, poisonings, allergic, intestinal and other diseases is proved by clinical and experimental methods. This review of wide medicinal properties Zj, elite plant of traditional medicines, is done with aim the most fast introduction this food plant in Russian physician practice.

Keywords: *Ziziphus jujuba*, phytotherapy.

INTRODUCTION

By the resolutions of the World Health Organization (WHO), the assimilation of experience, methods, arsenal of traditional and traditional medicine is outlined as one of the priority directions of the development of medicine in the XXI century [12, 21, 22, 23, 36]. However, this assimilation during unhurried rehabilitation, the revival of herbal medicine in Russia is proceeding too slowly, which is often due to the lack of professional information about the high medicinal properties of plants and their combinations. NM Hassan and co-authors also note that representatives of European medicine are not aware of the high and multidirectional therapeutic effect of plants, in particular, unabi [6]. The purpose of this review is

familiarization with the centuries-old, widespread use of fruits, leaves, bark of *Ziziphus jujuba* (*Z. chinensis*, *Rhamnus ziziphus*) in traditional medicine. The timeliness of such a review is also dictated by the fact that for the first time in the Krasnodar Territory of the Russian Federation, a large-scale planting of unabi trees is carried out in order to create a domestic base for obtaining highly effective medicinal raw materials: fruits, leaves, bark.

The origin of the name *Z. jujube*, *Z. mauritiana* (Indian Unabi) and extremely brief information about them are given in the "Encyclopedic Dictionary of Medicinal Plants ..." [40]. A specific, close to us unabi area (Central Asia, Altai, Caucasus) is presented in a number of sources [18, 27, 33, 34]. Unabi, a plant growing wild and introduced into culture mainly for decorative purposes (Crimea, Caucasus, Ukraine), is so common in Central Asia that there is no need to talk about a shortage of raw materials in the same Iranian-Tajik medicine. But even in the southern regions of Russia, unabi is not a widespread cultivated plant, since the fruits do not differ in high taste, as well as tea from its leaves. The great Abu Ali ibn Sino (Avicenna) in the "Canon of Medicine", quoting Galen and, to some extent, being under his influence, wrote, that jujuba fruits "are not very nutritious and are difficult to digest" [1]. Unabi enjoys a reputation not so much as a food plant, but as a medicinal plant [16, 33, 34, 52]. Nevertheless, according to V.I. Zapryagaeva [18], the population of the mountainous regions of Central Asia mixes flour of fruits into cereals, dough for baking bread in order to improve its taste. Tea made from unabi leaves called "chiluno" or "choilon" (tea surrogate - Tajik) is drunk ½ cup in the morning on an empty stomach as a tonic, general tonic, increasing resistance to infectious diseases, effective for dizziness, increased fatigue [33]. Nowadays, with some, completely not accidental, overdoing diagnosis and therapy of "chronic fatigue syndrome", "energy deficiency syndrome" "Spring fatigue syndrome" [20] information about the tonic herbs of traditional medicine is especially important [15]. Unabi fruits are included in compotes, cold refreshing and health drinks. All this serves as an indirect confirmation of the plant's non-toxicity. With excessive consumption, the fruits lead to stomach discomfort and flatulence, which is stopped by combining them with raisins (especially the Toifi variety), worse - with sugar. For medicinal purposes, ripe fruits and leaves are harvested during fruiting [33, 34, 35]. The Korean author Choi Taesop [39] also notes a higher activity of autumn leaves. China supplies 90% of unabi fruits to the world market, and the use of "Chinese date" as a medicine goes back more than 4 thousand years [49, 70]. cold refreshing and health drinks. All this serves as an indirect confirmation of the plant's non-toxicity. With excessive consumption, the fruits lead to stomach discomfort and flatulence, which is stopped by combining them with raisins (especially the Toifi variety), worse - with sugar. For medicinal purposes, ripe fruits and leaves are harvested during fruiting [33, 34, 35]. The Korean author Choi Taesop [39] also notes a higher activity of autumn leaves. China supplies 90% of unabi fruits to the world market, and the use of "Chinese date" as a medicine goes back more than 4 thousand years [49, 70]. cold refreshing and health drinks. All this serves as an indirect confirmation of the plant's non-toxicity. With excessive consumption, the fruits lead to stomach discomfort and flatulence, which is stopped by combining them with raisins (especially the Toifi variety), worse - with sugar. For medicinal purposes, ripe fruits and leaves are harvested during fruiting [33, 34, 35]. The Korean author Choi Taesop [39] also notes a higher activity of autumn leaves. China supplies 90% of unabi fruits to the world market, and the use of "Chinese date" as a medicine dates back more than 4 thousand years [49, 70]. For medicinal purposes, ripe fruits and leaves are harvested during fruiting [33, 34, 35]. The Korean author Choi Taesop [39] also notes a higher activity of autumn leaves. China supplies 90% of unabi fruits to the world market, and the use of "Chinese date" as a medicine dates back more than 4 thousand years [49, 70].

The chemical composition confirms the non-toxicity of the plant. The rich protein, amino acid composition suggests, albeit moderate, but still the nutritional value of unabi fruits. An insignificant amount of alkaloids (0.06%) in leaves and even less in fruits does not lead to toxic effects. They include berberine (choloretic), considered medicinal, koklaurin, isoboldin, norizoboldin, specific yuzifin, yuzirin, zhubanin and others. Cyclic

peptide alkaloids [72]. Traces of caffeine have been found by Russian phytochemists. The presence of alkaloids, which have been known for many centuries, a moderate anesthetic effect on the receptors of the tongue when chewing leaves, leading to a decrease in the sensation of sweet and bitter taste, appetite for the consumption of sweets [1, 19, 22, 27]. The anesthetic properties of triterpene jujubosaponins 1-6, jujuboside β from leaves and seeds, as well as ziziphus saponins 1-3 from dried fruits have been established [57, 69]. The rest of the classes of natural compounds make it possible, to a limited extent, to assume high medicinal properties of the plant: carbohydrates up to 40-60%, vitamins: C (up to 800 mg%, ie a lot), B1, K, E, folic acid, carotene. Among organic acids - tartaric, malic, succinic, which is associated with the possibility of correcting metabolic hypoxia [14]. The action of other organic acids and, in particular, their amount has not been studied. Triterpenes: oleanolic, ursolic, olive, betulinic (birch) and other acids [56]. They attract the attention of oncologists due to their anticarcinogenic, antiproliferative action, and the initiation of apoptosis [58, 62, 70]. The presence of saponins (jujuboside B, ziziphus-saponins), as in relation to other plants, is customary to explain the secretolytic action. Flavonoids, catechins [64], tannins (up to 4.5% in leaves, 1.28% in fruits), tocopherols, in addition to vasoprotective, anti-inflammatory [55], normalizing the impaired permeability of histohematogenous barriers, antioxidant [71] have a number of therapeutic effects ... The plant also contains coumarins, phenol carboxylic acids, polysaccharides, with which immunomodulatory, interferonogenic,

The explanation of the therapeutic effect by the presence of only one class of compounds is, of course, mechanistic. The widest spectrum, high content of macro- (K, Fe, Mg, Na, Ca) and microelements (Ni, Cu, Mn, Zn, Co, Cr, Al, Ba, Se, I and others, depending on the soil) increases the predictions of high medicinal properties of unabi, in particular for microelementosis [20], anemia, leukopenia, immunodeficiency. The effectiveness of unabi in hypertension and atherosclerosis M.A. Grinevich explains the high vasoprotective activity, the presence of a large amount of iodine, as well as a diuretic effect [15].

Medicinal properties, history of use, formulation Unabi, ennob, jujub, jujuba, "Chinese date", "breast berry" belongs to the Buckthorn family (Rhamnaceae) and is one of the most popular, elite plants of traditional medicine in Iran and Tajikistan, India, China, Korea, Japan, Vietnam, Arab countries ... According to M.A. Grinevich [15], among 30 elite plants in East Asian countries, unabi ranks 9-15 in terms of the frequency of inclusion in multicomponent collections, and when calculating a generalizing, cumulative index using a computer, it ranks 9th. It is obvious that the elite (i.e. the most effective) traditional medicinal plants deserve the closest attention of domestic herbalists. In traditional medicine, all parts of the plant are used, but most often fruits and leaves. For example,

the history of four thousand years of application of unabi in Ayurvedic medicine [52], in China, tells us the most promising directions of application. In the XI century. Avicenna [1] noted the effectiveness of the fetus with fevers ("hot blood"), usefulness for the chest and lungs, with coarsening of the voice (laryngitis) with pain in the kidneys and bladder. In the book "Wisdom of the Ages" [26], which summarizes the works of numerous representatives of Iranian-Tajik traditional medicine for more than 1000 years (where, first of all, reliable information should be sought), there is an excerpt from the "Treasury of Medicines" by Muhammad Hussein: "Chelon softens viscera, removes stagnant fluids (loosens), purifies the blood and generates good blood (detoxifying effect), soothes inflammation and thirst, eliminates blood pungency (antipyretic effect), soothes liver pain, kidneys and bladder (antispasmodic, analgesic? action)". It is recommended to take 5-10, maximum - 50 medium-sized fruits. Continuing the generalization of the vast medieval literature of Iranian-Tajik medicine, M. Khodzhimatov [33] confirms the usefulness of dried fruits for coughing, chest pain, ie. with bronchopulmonary diseases, hence the name "breast berry".

Modern in vitro experiments have partially confirmed the antiallergic activity of the seed preparation by its ability to sharply reduce the activity of bovine hyaluronidase, cyclohexoxygenase [68]. Emphasizing the higher efficiency of leaves in comparison with tarragon wormwood, Amasiatsi had in mind the ability of the latter to eliminate menstrual irregularities in amenorrhea, opso-, dysmenorrhea, i.e. optimize ovarian function (emenogoga). Under intestinal ulcers (seeds are effective) Amasiatsi, like other authors, had in mind ulcers of the rectum, possibly the sigmoid colon, often inherent in an autoimmune disease - ulcerative colitis. There is abundant information about effective local application in wound healing [63] and dermatoses [2, 18, 27, 28, 33], fixing, hemostatic effect of the bark, fetuses in diarrhea, dysentery, tenesmus [22, 27, 51, 54]. The ability of fruits to cause flatulence, mucus, their poor absorption Amasiatsi recommends to overcome the combination with raisins, honey, sugar.

By 2012 I.D. Karomatov [22] also made an attempt to briefly summarize the therapeutic use of unabi mainly in Central Asia with a note: "they are not used in scientific medicine." They, from our point of view, are not quite

the main properties of unabi are professionally highlighted: 1. Expectorants. 2. Hypotensive. 3. Diuretics. 4. Local anesthetic. 5. Regulating the heart rhythm (antiarrhythmic). 6. Lactogenic. The author gives specific dosage forms, combinations used in traditional medicine. "Vodka of chicory, in which jujube fruits were soaked for a day, ... when taken internally helps with allergies (!), Rubella, soothes blood and bile pressure." Rose water with unabi fruits soaked for a day, taken with sugar, has a similar effect. In countries with hot climates, intestinal infections are more frequent, and therefore I.D. Karomatov repeatedly focuses on the indisputable effectiveness of fruits and other parts of the plant with them, on stopping diarrhea. In the best traditions of "evidence-based medicine", it has been confirmed in experiments on rats that leaf extract reduces diarrhea, caused by castor oil and a solution of magnesia sulfate [54], although it was easier to prove it clinically, to include the eating of fruits or tea from leaves that are effective for diarrhea (which has long been used in traditional medicine) in the complex therapy of patients with dysentery, food toxicoinfections. Similarly, fruits and bark are used as fixing agents in China [45]. Decoction of leaves with sugar inside I.D. Karomatov recommends for itching, allergies, gum with special treatment - rectally for "intestinal ulcers", infusion of fruits, leaves for rinsing with angina. As for lung diseases, the effectiveness of which cannot be explained solely by expectorant, secretolytic action, then not only fruits and leaves, but even "fumigation of roots with smoke helps with consumption." Unlike Amasiatsi and other authors, I.D. Karomatov considers unabi a remedy with a negative gonadotropic effect, draining the seed, reducing potency, stopping the regulation during a peculiar and hardly used procedure: decoction of roots in an enema. Contraceptive activity with estrus cancellation in mice and rats has been proven for cortex lignans [50]. I. D. Karomatov presented various information about the wound-healing effect of leaves, the positive effect of decoction of fruits, leaves (topically) on skin turgor, hair condition. "Unabi bones have a hypnotic, sedative effect, normalize the heart rhythm, reduce the muscles of the uterus" (the recipe is given). The hypnotic, anxiolytic, central nervous system depressant, sedative effect [40] of seed preparations has been confirmed experimentally [73, 74]. The author presents modern experimental works of foreign authors, in which a sedative,

All three of the latter properties are background for medicinal plants, since, for example, all plants protect themselves from the explosion of lipid peroxidation initiated by ionizing, excessive ultraviolet radiation, and other damaging effects. Antimicrobial, antiviral, phytoncidal activity is necessary for plants and their essential oils for protection, which also extends to representatives of the fauna [30]. Therefore, standard studies on the detection of antioxidant and antimicrobial activity [44, 71] of unabi are hardly original in their direction. Background,

The extremely common anti-inflammatory activity of medicinal plants with their ability to limit not only the stage of exudation and proliferation, but also the stage of alteration [6–12] has fragmentary evidence for many plants, but no explanation of this phenomenon. Leaf extract at doses of 200, 400, and 600 mg / kg limited edema by 44.5%, 62.2%, and 81.8% in the standard model of carrageenan edema of the rat paw [55]. However, the same authors [46] proved the anti-alterative activity of the leaf extract using the generally accepted model of pyloric ligation in rats (Shayratsmodel), which they explain, first of all, by cytoprotective, and secondly, by hyposecretory action. The dose-dependent antipyretic activity of a non-toxic leaf extract has been experimentally proven, comparable to that of paracetamol [42].

I. D. Karomatov considers unabi only a fixative, antidiarrheal plant, forgetting about its belonging to the Krushinovye family, but leads controlled clinical studies confirming the reliable laxative effect of the fruit extract for chronic constipation [61], which is well known in folk and traditional medicine. Obviously, like rhubarb, myrobolans, mountaineer species and other laxative plants, unabi acts depending on the initial background: with diarrhea - fixing, with constipation

- laxative, which is extremely valuable for practice and cannot be explained only by the ratio of tannins and anthraquinones [13]. In Tibetan traditional medicine, unabi fruits are used as a laxative, as well as for non-specific "stomach diseases" (diarrhea?) And as a metabolic corrector (obesity) [17]. In the main treatise of traditional Tibetan medicine "Chzhud-shi" [5, 37, 38] in connection with the extreme importance of the use of "evacuators and purifiers" indulgence, "the best of the five medicinal purposes", a separate chapter is devoted. An idea of the importance of laxatives in the treatment of patients with numerous, various diseases is given. Doctors of ambulance and emergency room, emergency rooms are well aware that vascular accidents (strokes, heart attacks, hypertensive crises, transient ischemic attacks, vascular death) are often provoked by unproductive bowel movements, chronic constipation. Therefore, the expansion of the arsenal, the block of laxative plants with non-toxic unabi fruits, is included in the program for the prevention of these disasters and other complications of constipations that complicate cardiovascular diseases.

The fruits of unabi are described in the Tibetan treatise "Vaidurya-onbo" (Blue beryl), which is an addition and commentary to the main treatise "Chzhudshi", not translated into Russian. The fruits are also shown in the world famous "Atlas of Tibetan Medicine" (1994, sheet 25, fig. 35). All systems of traditional medicine in Asian countries use fruits, leaves, bark, seeds of unabi, and this is a huge geographic space and most of the world's population. The assignment of unabi to the permanently or frequently used elite plants indicates a high and versatile therapeutic efficacy. A specific feature of traditional medicine is the predominant use of food, spice, edible plants like unabi.

Since the fruits of unabi have been recognized since ancient times as non-nutritious, they are not only

do not lead to obesity, but also prevent it by inhibiting lipogenesis. If earlier they were still limitedly consumed in a wide geographic space, then a sharp narrowing of the human diet led to the loss of those plants in most people that restrict appetite, help to get away from overeating, excess weight. Correct, professional information about the possibilities of phyto-dietary therapy [10, 11, 12], about expanding the diet due to multidirectional medicinal plants, their alimentary consumption would increase a person's resistance to disease-causing effects. In this regard, the application of I.D. Karomatovy unabi leaves with their well-known local anesthetic effect, confirmed experimentally [75], to reduce the addiction, in particular of children, to sweets. In experiments on hamsters and rats, it was found that the suppression of the sensation of sweet (and bitter as well) are responsible for the triterpenoids of leaves - jujubosaponins 2-6 and jujuboside B (in leaves and seeds) and less active ziziphus saponins 1-3 from dry fruits [69]. It is proposed to use these substances (it is easier after all - the extract, tea from the leaves or the leaves themselves) for the treatment of overweight people with diabetes. A somewhat less well-known use of leaves, less often of unabi fruits for thirst and diabetes, was confirmed in experiments on alloxan-diabetic rats. The leaf extract reduced not only the hyperglycemia induced by alloxan, but also the increased level of triglycerides, total cholesterol and some of its fractions [67]. In experiments on rats, the ability of ethanol extract of leaves to correct carbohydrate and lipid metabolism, body weight, internal organs,

Unabi has been exported from Iran to India for centuries "for the treatment of lung diseases." The usefulness of unabi not only for banal bronchitis, acute respiratory viral infections, but also for pulmonary tuberculosis, pleurisy, bronchial asthma [34, 35], confirmed by many sources, was noted by me earlier [6, 8, 10, 12]. Unabi is used for tuberculous lymphadenitis, tuberculosis of the skin, kidneys, bones, eyes, i.e. and with other localizations of the disease [29]. Considering that in modern conditions (refugees, social cataclysms, hunger) tuberculosis has become a pandemic, this information is of particular importance, especially since the phytoncidal, antibacterial, tuberculostatic and even antifungal properties of unabi drugs have been established, and most importantly, the effectiveness of in the clinic, for which examples are given in the reference book "Plant Resources of the USSR" [27].

Recipe:

Ural licorice root	Ginseng	4.0 g;
root		6.0 g;
Rhizome of ginger	officinalis	10.0 g;
Unabi fruits		4.0 g

Daily dose. Preparation: boil in 600 ml of water, evaporating to 300 ml. Take 100 ml of warm broth 3 times a day. You should pay attention to the method of preparing the broth. This block is repeated for other diseases as well. In our own practice, we use more extended fees, since we have to

deal not with the initial stages of pulmonary tuberculosis.

The topic of tuberculosis in children is especially dramatic, and, accordingly, in order to achieve a high effect, at least elements of herbal medicine should be immediately involved in pediatric practice. In our own practice, in addition to the infrequent use of unabi (shortage of raw materials), we include licorice (!), Remania, Icelandic cetraria, plantain (leaf, seed), types of mallow, mullein, coltsfoot, aralia into multicomponent, personalized collections for patients with pulmonary tuberculosis. , Eleutherococcus, ginseng, lemongrass, ginger, turmeric, primrose, lungwort, cyanosis, rank, highlander bird, snake mountaineer, rosehip, mountain ash, mint, thyme, lemon balm, lavender, catnip, block of "anti-inflammatory": leaf (the name is conditional) plants raspberries, blackberries, willows, sage, yarrow, chamomile, St. John's wort, meadowsweet (meadowsweet), buckwheat and other plants for specific circumstances [6, 8]. (The species and part of the plant are omitted for brevity.) The listed plants are not only non-toxic, but most of them are detoxifying [7], which is especially important in pediatrics.

The second, most promising direction of introducing unabi into clinical practice is herbal medicine for patients with essential hypertension (HD), the prevention of its consequences - vascular catastrophes. A typical psychosomatic, sociogenic disease aggravated by persistent stresses, most often leading to disability, disability and death, has been recognized as "killer number one", and therefore any information about the effectiveness of non-toxic food medicinal plants verified over centuries is extremely relevant According to MA Grinevich [15], both in Chinese [19] and Korean [39] traditional medicine, unabi takes the second place in the frequency and effectiveness of its use in the treatment of patients with essential hypertension, including complicated forms. The author cites a number of references about the effective therapeutic use of unabi in China, Korea, Arab countries, as well as in clinics and sanatoriums of the USSR. The therapeutic, antihypertensive effect of unabi has been repeatedly confirmed clinically, for example, in the therapeutic clinic of Samarkand honey. Institute, in the Yalta sanatorium of the Black Sea Fleet. "The fruits are used as the best way to lower blood pressure" [16, 33]. According to our data, fees with the inclusion of unabi fruits do not reduce normal blood pressure, but contribute to its normalization in hypertension [9]. In connection with the urgency of the problem, I cite one of the blocks of plants that we successfully use in personalized collections for patients with hypertension. in the therapeutic clinic of the Samarkand honey. Institute, in the Yalta sanatorium of the Black Sea Fleet. "The fruits are used as the best way to lower blood pressure" [16, 33]. According to our data, fees with the inclusion of unabi fruits do not reduce normal blood pressure, but contribute to its normalization in hypertension [9]. In connection with the urgency of the problem, I cite one of the blocks of plants that we successfully use in personalized collections for patients with hypertension. in the therapeutic clinic of the Samarkand honey. Institute, in the Yalta sanatorium of the Black Sea Fleet. "The fruits are used as the best way to lower blood pressure" [16, 33]. According to our data, fees with the inclusion of unabi fruits do not reduce normal blood pressure, but contribute to its normalization in hypertension [9]. In connection with the urgency of the problem, I cite one of the blocks of plants that we successfully use in personalized collections for patients with hypertension.

Recipe:

Ural licorice root Nadz.	20-40.0;
including marsh creeper Nadz.	20.0;
including creeper forest Nadz.	20.0;
h. basilist of small Nadz.	10-20.0;
including small periwinkle Leaf	10.0-20.0;
of white mulberry	10-20.0;
Leaf of narrow-leaved fireweed Nadz.	30-40.0;
h. motherwort of the heart Unabi leaf	20.0;
	10-30.0;

Fruits (with seeds) unabi	Rhizome of	10-30.0
medicinal ginger	Rhizome of	10-20.0;
turmeric	zedoaria Nadz. h.	10.0;
blueberries		10-20.0;
Flowers of meadowsweet	meadowsweet	30-40.0;
Leaf of meadowsweet	meadows Nadz. h.	30-40.0;
Hypericum perforatum	Nadz. including	30-40.0;
horsetail		10.0;
Nadz. including	cornflower	20-30.0;
meadow	Orthosiphon leaf	20.0;
Dandelion leaf	white birch leaf	10-20.0;
		20-30.0;
White willow leaf		10-20.0;
Nadz. including	white sweet	20.0;
clover	Nadz. h. peppermint	10-20.0;
Nadz. including	oregano Nadz.	10.0;
including	lemon balm Nadz. h.	10.0;
lavender	spicate	10.0.

The collection can be expanded according to a specific situation (individual selection!) With a block of laxatives, carminative plants [13], a moderate amount of classical adaptogens, numerous herbal diuretics (rattle, juniper, mytnik, hernia, adonis, parsley, celery, dill, anise), modulators mood, hepatoprotectors, cardiotonics, antidiabetic, antiatherogenic plants and many others. We have adapted the preparation for home conditions: soak 1-3 tablespoons of the collection, stirring in 1 liter. water, quickly boil in an enameled dish without chips, simmer over low heat for 5-7 minutes, drain everything with raw materials into a thermos overnight. Take 150-200 ml in the morning, then in divided doses, according to the principle "the more often, the better" take on an empty stomach, in the interdigestive intervals. High results of therapy with infusions of such fees,

Choi Taesop notes that a decoction of autumn leaves led to a complete recovery of 27 people (42%), to improvement - in 29 (46%) of 63 patients with hypertension. A decoction of unabi fruits, licorice roots, hulled (without peel) wheat grain in combination with acupuncture led to 22 recovery and an improvement in 3 out of 25 patients with hypertension (an effect not attainable for scientific European medicine). The author recommends a similar collection with licorice and replacement of wheat with barley for hysteria, which suggests an anti-neurotic, sedative, stress-limiting effect of unabi [39]. This aspect of the effectiveness of unabi is one of the necessary mechanisms for achieving a stable therapeutic effect, and not just eliminating the symptom - hypertension, which is what classical pharmacology strives for. The stress-limiting activity of alcoholic extracts of the bark to reduce the peak of corticosteroids in mice under stress [49] and anxiolytic, sedative activity of seeds (also in mice) [73] was experimentally confirmed. Realizing the value of these

experimental work, I would like to note the absence of parallels between severe, persistent human and artificial mouse stress. Choi Taesop believes that a decoction of not only the leaves, but also the bark of the unabi cut in the fall, is also effective for hypertension. The author gives a detailed description of the preparation of tablets approved in Korean traditional medicine, a sweet mixture of leaves, effective in hypertension, as well as fees used for hysteria, as a "nutritional and gastric means" (unabi fruits, ginseng 5 g each, 1 g emoji, raw ginger 3 g). It is noteworthy that unabis are combined with the leaders of the elite plants of the countries of East Asia - with licorice, ginseng, as well as other elite plants, typical tonics: ginger, eukomia, which, from the point of view of classical pharmacology, would not seem to be shown in hysteria. Combinations, compositions, and blocks of medicinal plants worked out in traditional medicine [19, 37, 38, 39] deserve the closest attention and reproduction. Since Korean and Chinese traditional medicine are in many respects similar, the recipe of China confirms the legitimacy, sophistication, and correctness of combinations of a number of medicinal plants, offers methods for preparing decoctions that are absent in our pharmacopoeia [19].

Recipe:

Ziziphus jujuba fruits	3.0 * g;
Ural licorice roots Rhizomes of medicinal ginger Ginseng roots	4.0 * g;
	3.0 * g;
	3.0 * g;
Rhizomes of Scutellaria Baikal	3.0 * g;
Rhizomes of Chinese Coptis	1.0 g;
Rhizomes of Pinella tuberous	6.0 g

The daily (!) Dose is given. Prescribing a few drops of 1:10 tincture of ginseng (instead of 30 ml of 3 g in this recipe), aralia, eleutherococcus, rhodiola, ... is a kind of profanation of herbal medicine and looks rather pathetic when considering the daily dosages of plants that we have not assimilated in traditional medicine.

Preparation: boil in 600 ml of water, evaporating to 300 ml. We have not mastered this method of preparing decoctions either. Take a cooled decoction of 100 ml 3 times with neurasthenia, psychasthenia, hysteria, insomnia, somnambulism, depression, increased fatigue, dizziness, memory loss, increased blood pressure. A number of symptoms are characteristic of chronic cerebral circulatory insufficiency, atherosclerosis of the arteries of the brain, i.e. with complications of hypertension, other symptoms - for the consequences of persistent stress, psychoemotional basis of GB. It may seem that this recipe has a purely educational value. The symbol "*" marks the components that are at least relatively accessible for domestic herbalists, especially for the state, if its representatives wish to follow the WHO resolutions.

In the section on old recipes of traditional Korean medicine, Choi Tesopom contains remedies with the inclusion of unabi, effective for hysteria, insomnia (sedative effect), spasms, stomach pains (antispasmodic, analgesic action), pain with hemorrhoids, stomatitis, for a long time

healing ulcers (topically). Mastering this recipe, the nuances of its implementation, would undoubtedly lead to an increase in the bar for therapeutic effect in hypertension and other diseases. One of the mechanisms of antihypertensive action is the Na-uric, diuretic effect. In rats, infusion from fruits increased urine output by 35.4%, from leaves - by 48.6% [3, 4, 35].

It is essential that in this case, unabi, like many other herbal diuretics, supplies potassium and a number of other macro- and microelements (see chemical composition), which significantly distinguishes the plant from a simple panangin and synthetic diuretics. The diuretic preparatunabin proposed by domestic authors [33] is absent in practice.

Choi Thesop, considering unabi a nutritious, emollient (secretolytic), laxative, emphasizes detoxifying, antidote properties, the use of "to neutralize toxic substances", which must be remembered when "loading" the patient with aggressive synthetic medicines: cytostatics, tuberculostatics, anticonvulsants, antipsychotics, tranquilizers, hypnotics, hypotensive, antispasmodic, steroid and non-steroidal anti-inflammatory drugs, statins, especially with severe side effects. Means and mechanisms of detoxification herbal medicine, the need for a thorough development of this new discipline were highlighted by me earlier [7]. Unabi is effective not only for exo-, but also for endotoxiosis. The therapeutic effect of unabi in case of toxicosis in the 2nd half of pregnancy and in miscarriage has been confirmed [3, 4, 31, 32]. In Vietnam, unabi is used for chronic glomerulonephritis and hyperazotemia [27].

With a concise presentation of information about the "Chinese date" and its application in Chinese traditional medicine, F.I. Ibragimov and V.S. Ibragimov [19] note the preference for alimentary consumption of stale fruits, the presence of 1.7% anesthetic in the leaves (without specifying its nature). The duration of anesthesia of the receptors of the tongue is 5-10 minutes. When administered intravenously to dogs, a 10% infusion of leaves (a methodical error!), Its hypotensive, sedative effect is manifested. On an isolated frog heart, a positive inotropic and negative chronotropic effect of a 1: 200 leaf infusion was noted, similar to that of cardiac glycosides, which were not found in unabi. The action on the vessels of isolated organs is multidirectional. The main directions of use of fruits in China: tonic, diuretic, anti-neurotic, secretolytic (with bronchial asthma), leaves - hypotensive, seeds - sedative, bark - fixing, anti-febrile, antirheumatic. When analyzing the extensive formulation given by the authors, we find the fruits of unabi in the collections used for tuberculosis, myocarditis, heart failure, for ischemic strokes with hemiplegia, speech impairment, insomnia, pain in the heart, for hyperacid conditions, acute and chronic gastritis, neurasthenia, psychasthenia with tachycardia, shortness of breath, insomnia, depression, increased fatigue, with acute and chronic nephritis, toxicosis of pregnancy, rheumatism, skin diseases (furunculosis, erysipelas

inflammation, lupus erythematosus, alopecia), unspecified blood diseases, severe post-hemorrhagic anemia, chronic prolonged blood loss (for example, with metrorrhagia), amenorrhea, protracted chronic long-term diseases, infections. Of the 107 multicomponent collections given by the authors, unabi fruits are included in 26, which indicates the high efficiency of the plant, a wide range of indications for its use. The composition of the fees should be found in the original source. Even a concise listing of the directions of application of unabi makes it possible to classify it as a "universal medicine", like licorice, remania, ginseng, mummy, myrobolans [17, 38], and, accordingly, to consider it legitimate to refer to elite medicinal plants. Noteworthy is the collection recommended for bronchial asthma,

Recipe:

Ural licorice root Unabi	3.0 g;
fruit	6.0 g;
Nadz. including Chinese ephedra	9.0 g;
Rhizome of medicinal ginger	4.0 g;
Rhizome of Pinella tuberous Gypsum	9.0 g;
	12.0 g

Daily dose. The standard for China preparation with the evaporation of the broth from 600 to 300 ml. Take three times 100 ml of hot broth.

The attention of researchers of mainly Asian countries is focused on the experimental confirmation of the legitimacy of the frequent and effective use of unabi for at least two millennia, as well as elucidation of some of the mechanisms of action of its drugs. Thus, the seed extract predisposes to sleep, has a depressive effect on the central nervous system, reducing anxiety, but does not exhibit anticonvulsant and muscle relaxant properties [73]. The possibility of using unabi for oncological diseases is to some extent confirmed by the establishment of the cytotoxic effect of triterpenoids from its fruits [58]. Ursolic, oleanolic, betulinic acids have an antiproliferative effect, initiate apoptosis of melanoma cells (unabi polysaccharides are also effective), malignant tumors of the ovaries, mammary glands, liver, prostate gland (the widest range of cancer cells), lead to the destruction of mitochondrial membranes [53, 62, 70]. Unfortunately, the authors of numerous works on the study of the anti-oncogenic effect of unabi operated only in isolated cases with total extracts, but in the overwhelming majority - with chemically pure substances. The pursuit of the active substance in this case is not justified, since all these triterpenes are found in many other plants, and the use of one substance excludes the breadth of the spectrum of the medicinal action of the plant and contradicts the principles of phytotherapy. These in vitro, in vivo experiments on mice will probably expand the arsenal of cytostatics, but there is some contradiction in the authors' initial assumptions about the value of unabi and other medicinal plants as means, Unfortunately, the authors of numerous works on the study of the anti-oncogenic effect of unabi operated only in isolated cases with total extracts, but in the overwhelming majority - with chemically pure substances. The pursuit of the active substance in this case is not justified, since all these triterpenes are found in many other plants, and the use of one substance excludes the breadth of the spectrum of the medicinal action of the plant and contradicts the principles of phytotherapy. These in vitro, in vivo experiments on mice will probably expand the arsenal of cytostatics, but there is some contradiction in the authors' initial assumptions about the value of unabi and other medicinal plants as means, Unfortunately, the authors of numerous works on the study of the anti-oncogenic effect of unabi operated only in isolated cases with total extracts, but in the overwhelming majority - with chemically pure substances. The pursuit of the active substance in this case is not justified, since all these triterpenes are found in many other plants, and the use of one substance excludes the breadth of the spectrum of the medicinal action of the plant and contradicts the principles of phytotherapy. These in vitro, in vivo experiments on mice will probably expand the arsenal of cytostatics, but there is some contradiction in the authors' initial assumptions about the value of unabi and other medicinal plants as means, but in the overwhelming majority - chemically pure substances. The pursuit of the active substance in this case is not justified, since all these triterpenes are found in many other plants, and the use of one substance excludes the breadth of the spectrum of the medicinal action of the plant and contradicts the principles of phytotherapy. These in vitro, in vivo experiments on mice will probably expand the arsenal of cytostatics, but there is some contradiction in the authors' initial assumptions about the value of unabi and other medicinal plants as means, but in the overwhelming majority - chemically pure substances. The pursuit of the active substance in this case is not justified, since all these triterpenes are found in many other plants, and the use of one substance excludes the breadth of the spectrum of the medicinal action of the plant and contradicts the principles of phytotherapy. These in vitro, in vivo experiments on mice will probably expand the arsenal of cytostatics, but there is some contradiction in the authors' initial assumptions about the value of unabi and other medicinal plants as means,

preventing cytostatic disease during chemotherapy, providing hepato-, cardio-immuno- and other protective effects and at the same time allowing to overcome resistance to cytostatics. The hepatoprotective activity of fetuses was confirmed in a model of toxic hepatitis caused by carbon tetrachloride in mice and explained by their antioxidant activity [66]. In this regard, the clinical data of Iranian researchers on the effectiveness of the fruit extract in the treatment of neonatal jaundice are no less valuable [65].

One of the alleged for unabi mechanisms enhancements sensitivity to cytostatics, overcoming chemoresistance is the optimization of bioavailability, their transport to target cells [70]. The rule of increasing the sensitivity to drug therapy with total, mainly water extracts from whole plants (preferably their combinations), overcoming the patient's resistance, unresponsiveness and at the same time stopping the side effects of xenobiotic treatment due to detoxification phytotherapy applies not only to oncology, but also to almost all areas of medicine. Examples in phthysiology, cardiology, and the intensive care unit have been cited by me many times [6, 7, 9]. Given the extreme urgency of accompanying radiation and chemotherapy with simultaneous, but preferably preliminary and subsequent phytotherapy, I will cite one of the blocks of multicomponent fees,

Recipe:

Ural Licorice Root	20-40.0;
Remania Gummy Root	10-20.0;
Large plantain leaf White	20.0;
willow leaf	20.0;
Cassia Norway leaf White	20.0;
birch leaf	20-40.0;
White birch bark	20.0;
Oblique tinder fungus (chaga)	20-40.0;
Unabi fruit	10-20.0;
Unabi leaf	10-20.0;
Rhizome of marsh cinquefoil	20-30.0;
Rhizome of medicinal ginger	10-20.0;
Rhizome of zedoaria turmeric Root	10-20.0;
of Eleutherococcus prickly Nadz.	20.0;
including wormwood, Tsv. baskets	20.0;
of calendula	
medicinal	10-20.0;
Nadz. h. field horsetail Supervision.	10-20.0;
hours of common toadflax Nadz. h.	10-20.0;
wormwood	10.0;
Nadz. h. series of tripartite Tsv.	20-30.0;
chamomile baskets. Flowers of	20-30.0;
meadowsweet.	20-40.0;
	40.0.

Preparation: 2–3 tablespoons of the chopped collection, soak, stirring, in 1 liter of water, boil in an enameled dish without chips, simmer over low heat for 5–7 minutes, drain everything with raw materials into a thermos, leave overnight. In the morning, take 1 glass of warm infusion, then take on the principle "the more often, the better." Fees of this type are designed for long-term, constant use. In comparison with the Chinese recipe, the doses are underestimated in accordance with the constant shortage of raw materials. Very simple combinations of green tea extracts and unabi leaves have been proposed to achieve a cytotoxic effect in liver carcinoma [52]. However, many works cited by different authors only inform about in vitro effects. Find jobs in which, for example, Unabi fruits would be included in the diet of cancer patients, or they were prescribed infusions (teas) of multicomponent collections with the inclusion of leaves and fruits in the available literature. There is a huge distance between invitral experiments, experiments on animals, where many results are positive, and the clinic.

The leaf extract in vitro increases the chemotaxis and phagocytic activity of human leukocytes [47], which to some extent reinforces the empirical data on the high efficiency of unabi fruits in various infections. Methanol extract of the bark (topically) accelerated wound healing in rats [63], which confirms the validity of its topical application (but more often of leaves) as wound healing agents. The emphasis on the local anesthetic properties of unabi leaves with the loss of sweet taste, prevention of excessive consumption of sweets, and thus obesity, lipid metabolism disorders [48, 57, 60, 75], is legitimate, but hardly outlines the main lines of their use in comparison, for example, with the establishment of antidiabetic and antiatherogenic action [60], the correction of metabolism in alcoholism in the experiment [43]. Antidiabetic and antiatherogenic activity was confirmed in the model of streptozotocin, alloxan diabetes in rats [41, 67]. Without diminishing the importance of these invitral experiments, I note their relative value, the difficulty of extrapolating the results to the clinic. Surprisingly, there is no widespread clinical use of unabi edible fruits with direct registration of their multidirectional efficacy. Tea from the leaves of "chelon" could also be included in the complex therapy of patients with various diseases, prescribed on an outpatient basis as a supportive therapy with tracking their effectiveness in various, large contingents of patients. the difficulty of extrapolating the results to the clinic. Surprisingly, there is no widespread clinical use of unabi edible fruits with direct registration of their multidirectional efficacy. Tea from the leaves of "chelon" could also be included in the complex therapy of patients with various diseases, prescribed on an outpatient basis as a supportive therapy with tracking their effectiveness in various, large contingents of patients. the difficulty of extrapolating the results to the clinic. Surprisingly, there is no widespread clinical use of unabi edible fruits with direct registration of their multidirectional efficacy. Tea from the leaves of "chelon" could also be included in the complex therapy of patients with various diseases, prescribed on an outpatient basis as a supportive therapy with tracking their effectiveness in various, large contingents of patients.

Briefly summarizing the review of the literature on unabi, it should be noted that the most important is the introduction of preparations from leaves and fruits into the practice of cardiologists, general therapists, who most often take patients suffering from hypertension. The second most important area is phthiology, an attempt to improve the effectiveness of treatment of patients with pulmonary and other localizations of tuberculosis. Passion for anesthesia of the tongue, a decrease in sensitivity to sweets against this background seems to be an interesting, but clearly less relevant direction. A relatively small number of works are devoted to the antiallergic properties of unabi, effectiveness in atopic dermatoses, bronchial asthma, despite the fact that allergic diseases, especially children, are becoming the scourge of the century. In this

communication, the use of unabi is of interest not only for allergic, but also for autoimmune diseases. The problem of treating patients with diabetes mellitus, even if only of the second type, is also far from being resolved.

The use of unabi for oncological diseases is not found in traditional medicine. Therefore, it is hardly legitimate to rely only on the presence of triterpenoids in a plant, which in their pure form cause the death of certain cancer cells in vitro. The most realistic use of whole fruits and leaves in collections (see recipe) for hypertension, its complications, tuberculosis. The relief of diarrhea or, conversely, constipation is not such a difficult task, but it is essential in the first case for infectious disease specialists, as well as in the treatment of patients with nonspecific ulcerative colitis (a combination of hemostatic, fixing, immunomodulatory, desensitizing properties), and in the second - for a large contingent elderly and old people, young asthenics suffering from constitutional ("from birth") constipation. With the availability of raw materials on the initiative, an immediate positive reaction of the pharmacological and pharmaceutical committees of the Ministry of Health, the introduction of inpatient and even more outpatient use of infusions of teas (teas), including unabi, with the involvement of experienced herbalists could begin in the shortest possible time with the benefit of the population, with overcoming dependence on imported medicines. Own experience of using unabi allows only to positively evaluate the role of this medicinal plant, especially in the treatment of patients with cardiovascular diseases [6, 8, 9, 13]. overcoming dependence on imported medicines. Own experience of using unabi allows only to positively evaluate the role of this medicinal plant, especially in the treatment of patients with cardiovascular diseases [6, 8, 9, 13]. overcoming dependence on imported medicines. Own experience of using unabi allows only to positively evaluate the role of this medicinal plant, especially in the treatment of patients with cardiovascular diseases [6, 8, 9, 13].

Literature

1. Abu Ali ibn Sino. Canon of Medicine. Fav. sect. Ch. 1. - M., 1994. - 409 s.
2. Amasiatsi A. Unnecessary for the ignorant. - M., 1990. -- 879 p.
3. Akhmedov U.A. Comparative pharmacological study of unabi common and cultivated varieties. Abstract of the thesis. Diss. ... Cand. pharmacist. sciences. - Tashkent, 1968. -- 23 p.
4. Akhmedov U.A., Khalmatov Kh.Kh., Kamilov I.K. To the pharmacology of various unabi preparations // Med. zhurn. Uzbekistan, 1966. - No. 8. - P.38-40.
5. Badmaev P. Fundamentals of medical science in Tibet. Zhud-shi. Reprint reproduction of the publication "The Main Guide to Medical Science in Tibet. Zhud-Shi". - SPb., 1903. -- M., 1991. -- 256 p.
6. Barnaulov O.D. Herbal medicine for patients with pulmonary tuberculosis. Principles, plants, recipes, results. - SPb., 1999. -- 416 p.
7. Barnaulov O.D. Detoxifying herbal medicine or antidote properties medicinal plants. - SPb., 2007. -- 409 p.
8. Barnaulov O.D. Herbal medicine for patients with bronchopulmonary diseases. Lectures on herbal medicine. - SPb., 2008. -- 304 p.
9. Barnaulov O.D. Herbal medicine for patients with cardiovascular diseases. Lectures on herbal medicine. - SPb., 2010. -- 240 p.
10. Barnaulov O.D. Medicinal properties of fruits and berries. Phyto-diet therapy. - SPb., 2013. -- 256 p.

11. Barnaulov O.D. Medicinal properties of spices. Phyto-diet therapy. - SPb., 2015. - 288 p.
12. Barnaulov O.D. Medicinal plants are tea surrogates. Phyto-diet therapy. - SPb., 2015. - 448 p.
13. Barnaulov O.D. The medicinal effect of laxative plants. Lectures on herbal medicine. (In the press).
14. Vorobyova V.V. Pharmacological correction with antihypoxants consequences of exposure to extreme factors of physical and chemical nature. Diss. ... doct. honey. sciences. - SPb., 2014 .-- 287 p.
15. Grinevich M.A. Information search for promising medicinal plants. Experience in studying traditional medicine in East Asian countries using a computer. - L., 1990 .-- 141 p.
16. Dadobaeva O.D. Medicinal plants of Northern Tajikistan. Abstract of the thesis. diss. ... Cand. biol. sciences. - Dushanbe, 1967 .-- 18 p.
17. "Dzeitskharmigchzhan" - a monument of Tibetan medicine / Edited by BB. Badaraeva. - Novosibirsk, 1985 .-- 88 p.
18. Zapryagaeva V.I. Wild fruits of Tajikistan. - ML, 1964.- 696 s.
19. Ibragimov F.I., Ibragimova V.S. Essential medicines Chinese medicine. - M., 1960 .-- 412 p.
20. Ivanchenko V.A., Gordzinsky A.M., Cherevchenko T.M. and etc. Phytoergonomics. - Kiev, 1989 .-- 296 p.
21. Karomatov I. D. Philosophical and theoretical foundations of ancient Eastern medicine. - Tashkent, 2009 .-- 139 p.
22. Karomatov I. D. Simple medicines (experience of using medicines of natural origin in ancient, modern folk and scientific medicine). - Bukhara, 2012 .-- 887 p.
23. Karpeev A.A., Kiseleva T.L. Phytotherapy Congress - an important stage development of herbal medicine in Russia. 1 Russian phytotherapeutic congress. Digest of articles. - M., 2008. - P.4-7.
24. Korsun V.F., Korsun E.V. Herbal medicine as an element of modern medicine. Practical herbal medicine. - 2007, 31. - P.5-8.
25. Lazarev N.V., Lyublina E.I., Rozin M.A. Condition nonspecifically increased resistance // Pathologist. fiziol. and experiment. therapy, 1959. - No. 4. - pp. 16-21.
26. The wisdom of the ages. Ancient oriental medicine. - M., 1992 .-- 271 p.
27. Plant resources of the USSR. - L., 1988 .-- 357 p.
28. S. S. Sakhobidinov. Wild medicinal plants of the Middle Asia, Tashkent, 1948, 216 p.
29. Sinko L.T. Zizyphus is one of the most valuable subtropical fruits breeds in the south of the Soviet Union. Works of Nikita. nerd. garden, 1971, no. 52. - pp. 31-53.
30. Tokin B. P. Healing poisons of plants. - L., 1974 .-- 344 p.
31. Fazilov V.F. The use of unabi ordinary in the treatment of toxicosis the second half of pregnancy. Healthcare of Turkmenistan, 1969. - No. 3. - p.30.

32. Treatment of premature pregnancy with unabi infusion // Med. zhurn. Uzbekistan, 1971. - No. 1. - pp. 30–31.
33. Khadzhimatov M. Wild medicinal plants of Tajikistan. - Dushanbe, 1989. -- 368 p.
34. Khalmatov Kh.Kh. Wild medicinal plants of Uzbekistan. - Tashkent, 1964. -- 278 p.
35. Khalmatov Kh.Kh., Khabibov Kh.Kh. On the question of studying the ordinary unabi. Tr. Tashkent. Pharmac. in-ta, 1962. - Vol. 3. - pp. 85–90.
36. Chen M. Speech at the WHO Congress on Traditional Medicine. Practical herbal medicine. - 2008. - No. 1. - P.43–48
37. "Chzhud-shi" - a monument of medieval Tibetan medicine. - Novosibirsk, 1988. -- 349 p.
38. Chzhud-shi. Canon of Tibetan Medicine. - M., 2001. -- 766 p.
39. Choi Taesop. Medicinal plants. - M., 1987. - 606 p.
40. Encyclopedic Dictionary of Medicinal Plants and Products animal origin. Ed. G.P. Yakovlev and K.F. Blinova. - SPb., 1999. -- 407 p.

41. Anbarasi B., Brinda P, Hypoglycemic and Hypolipidemic effect of Ziziphus jujube Lam, in streptozotocine-induced diabetic rats. Research J. of Pharmaceut., Biologic. And Chem. Sciencies. 2013, V.4, N2. P.611.
42. Balakrishnan A., Balasubramaniam FD, Natesan SK Antypyretic activity of Ziziphus jujube Lam. leeves. J. of Advanced Scientific Research. 2012, V.3, N3. P. 40–42.
43. Dahiru D., Obidua O. Effect of aqueous extract of Ziziphusmauritianaleef on cholesterol and triglyceride levels in serum and liver of rat, administrated alcohol, Pacistan J. of nutrition. 1999, V.8, N12. P. 1884-1888.
44. Das S. Antimicrobial and antioxidant activities of green and ripe fruits of Averhoa carambola Lin. AndZiziphusmauritiana Lam. Asian J. Pharm. Clin. Res. 2012, V.5, N3. P. 102-105.
45. Dragendorf G. Die Heilpflanzen der varschicdenen Volker und Zeiten. Stuttgart, 1898.884 S.
46. Ganachari MS, Kumar S. Anti-ulcer properties of Ziziphuus jujube Lam. leaves extract in rats. J. of Natural Remedies. 2004, V.4, N2. P. 103-108.
47. Ganachari MS, Kumar S., Bhat KG Effect of Ziziphus jujube leaves extract on fagocytosis by human neutrophils. J. Natural Remedies, 2004, V. 41. P.47-51.
48. Ganachari MS, Kumar S., Alagavadi KR Anti-obese of Ziziphusjujube Lam.leeves extract in dietary obese rats J. of Natural Remedies. 2007, V.7, N1. P.102-108.
49. Gupta N., Mazumber UK, Vamsim.i. et al. Anti-steroidogenic activity of the two Indian medicinal plants in mice. J. Ethnopharmacol., 2004, V. 90, N5. P.21-25.
50. Gupta RB, Sharma S., Sharma JR. Et al. Study on the physico-chemical caracters of fruits of some wild and cultivated Ziziphus spp. Hariana J. of Horticultural Sciences. 2004, v. 33, N3 / 4. P.187-189.
51. Hasan NM, Al Sorkhy MA, Al Battah FF Ziziphus jujube (Ennab) of the Middle East, Food and Medicine. Unique J. of Ayurvedic and Herbal Medicine. 2914, V.2. N6. P.7-14.
52. Huang YL, Yen GC, Shen F. et al. Effect of wate-soluble carbohydrate

concentrate from Chinese jujube on different intestinal and fecal indices. *J. agric food chem.* 2008, v. 36. P.1734-1739.

53. Hung CF, Ysu BY, Sheng FC et al. Antiproliferation of melanoma cells by polysaccharides isolated from *Zizifus jujube*. *Nutrition.* 2012, V.28. P.98-105.

54. Jaganatha GH, Lashmi P. Anti-diarrhoeal activity of *Zizifus jujube* leaves extract in rats. *International J. of pharma and bio sciences.* 2012, V.3, issue 1. P.0975-6299.

55. Kumar S., Ganachari MS, S. Banappa et al. Anti-inflammatory activity of *Zizifuphus jujube* Lam. leaves extract in rats. *J. of Natural Remedies,* 2004, V. 4, N2. P.183-185.

56. Kundu AD, Barik BR, Mandal DN et al. Zizibernalic acid, a penta cyclic triterpenoid of *Ziziphus jujube*. *Phytochemistry.* 1989, V. 28, N. 11. P. 3155-3158.

57. Kurihara Y. Characteristic of antisweat substances, sweet proteins and sweetness induced proteins. *Crit. Rev. Food Sci. Nutr,* 1992, V. 32, N3. P.231-252.

58. Lee S., Min B., lee C. et al. Cytotoxic triterpenoids from the fruits of *Ziziphus jujube*. *Planta Medica,* 2003, V. 69. P.18-21.

59. Mishro KK, Kashuap P., Sawarcar YA et al. Evaluation of antifungal activity of stones of *Ziziphus jujube* for ringworm infections. *International J. of herbal drug research.* 2012, V.1, issue 3.P. f stones of *Ziziphus jujube* 8-11.

60. Mostafa U., LabbanL .. The effect of *Ziziphusjujube* on serum lipid profile and some anthropometric measurements. *Pakistan J. of nutrition.* 2013, V.12, N6. P.538-543.

61. Naftali T., Feingelerni H., Lesin Y. et al. *Zizifus jujube* extract for the treatment chronic idiopathic constipation and controlled clinical trial. *Digestion,* 2008, V.78, N6. P.224-228.

62. Plastina P., Bonofiglio D., Vizza D, et al. Identification of bioactive constituents of *Ziziphus jujube* fruit extract exerting antiproliferative and apoptotic effect in human breast cancers cells. *J. Ethnopharmacol.* 2012, V. 149. P.325-332.

63. Sampath Ch., Aratla R., Swaraopo D., Rao KS Wound healing potential of *Ziziphus jujube* bark extract on albino rats. *International J. of research in aurveda and pharmacy.* 2012, V.3, N6. P.218-225.

64. San B. Yildirim AN Phenolic alpha tocopherol, beta-carotene and fatty acids Composition of four.

65. Promising jujube (*Ziziphus jujube* Miller) selections. *J. Food Compos. Anat.* 2010, v.21. P.706-710.

66. Sedigheh E., Estafahmi NS, Poormamahmudi A. Investigation of efficacy of *Ziziphus jujube* on nejneta jaundice. *Iranian J. of Pediatrics.* 2011, v. 21, N2. P.320-324.

67. Taraneh P., Asna U. Antioxidant components and activity in peel of *Ziziphus jujube* Mill. *J. Pharmacy Rsearch* 2012 V.5 N5. P.2705-2709.

68. Tripathi P., Tripathi S. *Ziziphus jujube*: A phytopharmacological review. *International J. of research and development in pharmacy and life sciences.* 2014, V.3, N.3, P.959-966.

69. Wenhuan P., Mingsuen H., Yishung L. et al. Anxiolytic effect of seed of *Zizifus jujube* in mouse models of anxiety. *J. of Ethnopharmacology,* 2000, V.72, N3. P.435-441.

70. Wing-Fat Yeung, Kata-Fat Chung, Maggie Man-Ki Poon et al. Chinese herbal

medicine for insomnia. A sistematic review of randomizidid controlled trials. Sleep Medic Rev. 2012, V. 16. P.497-507.

71. Yamade H., Iomoto T. Inhibitory effect of the extract from Zizifus jujube leaves on sweet taste r esponses of the chorda tympani in the rat and hamster. Comp. Biochem. Physiol. A. 1987, V. 89., No. 2. P.355-369.

Author's address

Dr. med. Barnaulov O.D., Leading Researcher Institute of the Human Brain. N.P. Bekhtereva RAS, Corresponding Member RAE, honorary title: founder of the scientific school "Experimental and clinical herbal medicine"
barnaulovod@rambler.ru

Barnaulov, O.D. A brief overview of the medicinal properties of unabi Ziziphus jujuba / O.D. Barnaulov // Traditional medicine. - 2016. - No. 2 (45). - S.50-61.

[To favorites](#)