

USEFUL AND HARMFUL PROPERTIES OF AGARICOID
BASIDIOMYCETES OF THE SHIKAHOGH STATE RESERVE
(Republic of Armenia)

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As a result of studying the biota of the agaricoid basidiomycetes of the Shikahogh State Reserve, 148 species of fungi are found, from which 97 species are edible, 48 species – poisonous and 52 species have medicinal properties. Macromycetes have great potential for use in medicine and economy.

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Keywords: mushrooms, Shikahogh State Reserve, edible fungi, poisonous fungi, medicinal fungi.

Introduction. Medicinal and nutritional properties have been attributed to mushrooms for thousands of years. Many species of fungi are well known in traditional medicine and in scientific literature as producers of biologically active substances [1–4].

Despite the medicinal properties of macrofungi and their widespread use in various countries, the species composition of the medicinal macrofungi has not been approved [5]. On the basis of modern taxonomy in China, a critical analysis of medicinal macromycetes was carried out and a list of 482 species of basidial medicinal macrofungi was obtained [6].

The main value of macroscopic mushrooms is not only low-calorie content or high protein content, but also in the presence of biologically active substances with healthful properties. Unlike microscopic fungi, macromycetes in this aspect have been poorly studied and only in recent decades have begun to attract the attention of official medicine. In different countries, various species of mushrooms are used for food and medical purposes. Data on the edibility and toxicity of a particular species are extremely contradictory, which is associated with both environmental conditions and the traditional knowledge of the population of various countries and nationalities.

For instance, in most Muslim countries, harvesting mushrooms and eating them is considered a sin. Each individual country in Western Europe eats different species of mushrooms. For example, in Italy the porcini or king bolete (*Boletus*

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edulis) is of great value, the Germans and Swiss prefer the golden chanterelle (*Cantharellus cibarius*), and among the Spanish the delicious milkcap (*Lactarius deliciosus*) takes the first place [7].

A completely different attitude to the use of mushrooms in food and medicine in the East. Moreover, they show the greatest interest in medicinal fungi. Traditions of their use, for example, in China have more than four millennia. These traditions and the special eastern culture of using mushrooms have received a powerful new development in recent decades. Currently, more than 40 species of edible macromycetes are cultivated in China, and about 100 species of mushrooms are used in Chinese medicine. Many mushrooms in China belong to the highest class of drugs – strengthening agents that restore health [4].

Bioactive compounds of fungi are mainly their secondary metabolites, which accumulate both in the mycelium of the fungi and in the fruiting body. It has been proven that the fruiting bodies of some macromycetes contain up to 90% linoleic acid, which is part of such medicinal preparations obtained from plants and animals as “Essentiale”, “Lipostabil”, “Vitamin F 99”, etc. [8, 9]. On the market, fungi biological products are presented mainly in the form of capsules, powders, tinctures, teas, coffee, cocoa. It should be noted that the pharmacies of our republic also sell tinctures and tablets from single species of mushrooms with medicinal properties (*Inonotus obliquus*, *Ganoderma lucidum*, *Tricholoma matsutake*).

The tradition of using macroscopic fungi for medicinal purposes in Armenia also has ancient roots. In the work of the medieval Armenian physician Amirdovlat Amasiatsi, dated from the 15th century, there is information about the medicinal properties of some fungi [10].

The main goal of this work was investigation of agaricoid basidiomycetes of Shikahogh State Reserve and assessment of their useful and harmful properties.

Materials and Methods. The material for this work was agaricoid basidiomycetes collected by us on the territory of the Shikahogh reserve, including the plane grove, the herbarium of the Department of Botany and Mycology of Yerevan State University (ERHM) and the available literary sources.

To study the species composition of macroscopic fungi in the study area, we used the route-expedition method throughout the entire territory of the reserve. Collection, processing and storage of fruiting bodies of macromycetes, were carried out according to generally accepted methods of mycological research. Identification of the samples (microscopic structure and biometric measurements) was carried out. In addition to the morphological method we made use of macro- and micromorphological features, a chemical method was also carried out for identification of samples, based on the color reaction between a certain chemical substance and a reagent. The conducted studies of color chemical reactions serve as an additional taxonomic criterion for determining species [11].

During the determination of the species belonging to macroscopic fungi, determinants and monographs for individual taxonomic groups and Internet sites were used [12–17].

Results and Discussion. In recent years, the consumption of mushrooms for food has increased both all over the world and in Armenia. 1970–1980 in the markets of the republic, champignon (*Agaricus bisporus*) and steppe oyster mushroom (*Pleurotus eryngii*) were mainly sold. Currently, both in Armenia as a

whole and in the Zangezour floristic region, the market is represented by such species as *Pleurotus ostreatus*, *Calocybe gambosa*, *Cantharellus cibarius*, *Lactarius deliciosus*, *Suillus granulatus*, *Lepista nuda*, some species from the genera *Russula*, *Tricholoma*, etc. [18, 19].

Also, mushrooms are used for food, which are conditionally edible. Some of these species are strictly forbidden to use with alcohol and must be pretreated before use. Conventionally edible mushrooms include species *Coprinellus micaceus*, *Coprinopsis atramentaria*, etc.

Poisonous mushrooms, which contain various toxins that lead to poisoning and even death, play a dangerous role in human life. Currently, more than 60 species of poisonous macromycetes have been identified in Armenia, of which 46 species belong to the order Agaricales [20]. Poisoning with poisonous mushrooms is associated not only with the presence of toxins in them, but also in the event that the macrofungi is exposed to bacterial, fungal or chemical contamination. In the first case, the fungi are exposed to mechanical damage or penetration of insects into the damaged parts, which leads to their infection with bacteria or pathogenic fungi. The second case is associated with the ability of many species of macroscopic fungi to accumulate and adsorb heavy metals, pesticides, fungicides that are toxic to humans [21].

The toxins of poisonous mushrooms are divided into three groups. Toxins that cause digestive disorders belong to the first group of toxins. These toxins are contained in the species of the genera *Agaricus*, *Tricholoma*, etc. The second group of toxins is contained in some fungi from the genera *Amanita*, *Cortinarius*, *Entoloma*, *Hebeloma*, etc. and leads to disorders of the central nervous system. The toxins in these poisonous mushrooms are mainly muscarine, muscaridin, psilocin, psilocybin, which also have a hallucinogenic effect. The most dangerous group of toxins is the third group, which is mainly fatal; poisoning occurs due to the use of *Amanita phalloides* and *Amanita virosa*, etc.

Poisoning mainly occurs in the summer–autumn period, when the collection and consumption of mushrooms increases.

Currently, medicinal cap fungi are used as dietary food, nutritional supplements, a new class of medicines, cosmetics, natural biocontrol agents in plant protection, etc. [22]. In Armenia, about 300 species of macrofungi have nutritional value, and 120 species are considered medicinal fungi [23].

As a result of studying, the biota of the agaricoid basidiomycetes of the Shikahogh State Reserve 148 species of fungi are found, from which 97 species are edible, 48 species – poisonous and 52 species have medicinal properties.

Table summarizes the medicinal properties of the fungi we identified. Also, edible and poisonous species of agaricoid basidiomycetes were noted [4, 7, 22].

Among the species of medicinal mushrooms collected by us in the Shikahogh Reserve, the species *Agaricus xanthodermus*, *Amanita muscaria*, *Calvatia craniiformis*, *Coprinus comatus*, *Fistulina hepatica*, *Lepista nuda*, *Schizophyllum commune*, etc. have antitumor and anticancer activity (see Table). The data of M.V. Vishnevsky [4] indicate that according to the mechanism of action, fungal substances that have antitumor activity are divided into two groups, of which the first directly affects tumor cells, and the second stimulates the body's immune system.

Edible, poisonous and medicinal properties of fungi from Shikahogh State Reserve

No	Species	Edible	Poisonous	Medicinal property and use
1.	<i>Agaricus arvensis</i> Schaeff.	+		in folk medicine of the countries of the East, it was used as a means of stimulating digestion and for hypertension
2.	<i>A. campestris</i> L.	+		in the East, it was used as a means of stimulating digestion and for hypertension. In the West and in Eastern European countries, it was used against snake bites, as an antidiabetic and disinfectant
3.	<i>A. silvaticus</i> Schaeff.	+		has an immunological, hematological effect, also normalizes blood pressure, lowers cholesterol
4.	<i>A. silvicola</i> (Vittad.) Peck	+		–
5.	<i>A. xanthodermus</i> Genev.		+	the antibiotics psalliotin and agaricin, which have antitumor activity, are isolated from this species
6.	<i>Agrocybe dura</i> (Bolton) Singer	+		the fungus produces the antibiotic agrocybin, which has antimicrobial, antifungal effects
7.	<i>A. praecox</i> (Pers.) Fayod	+		–
8.	<i>Amanita citrina</i> (Schaeff.) Pers.		+	carpophores contain choline and betaine, which promote metabolism in the human body
9.	<i>A. excelsa</i> (Fr.) Bertill.	+		–
10.	<i>A. gemmata</i> (Fr.) Bertill.		+	–
11.	<i>A. muscaria</i> (L.) Lam.		+	it has antitumor activity, is also used as antiallergic and sedative drugs
12.	<i>A. pantherina</i> (DC.) Krombh.		+	the fruiting body of the fungus contains choline, which normalizes metabolism
13.	<i>A. phalloides</i> (Fr.) Link		+	in homeopathy, ultra-small doses of alcoholic infusion are used for the following diseases: cholera, chorea, diphtheria, gastritis, visual disturbances, lesions of the muscles of the eyeball
14.	<i>A. rubescens</i> Pers.	+		carpophores contain betaine, which promotes metabolism, breaks down homocysteine, which leads to vascular damage
15.	<i>A. virosa</i> Bertill.		+	–
16.	<i>Armillaria mellea</i> (Vahl) P. Kumm.	+		possesses antibacterial, antitumor activity, also used as an antispasmodic, sedative and laxative drug
17.	<i>Bovista nigrescens</i> Pers.	+		–
18.	<i>B. plumbea</i> Pers.	+		–
19.	<i>Calocybe gambosa</i> (Fr.) Singer	+		it is used to improve the functioning of the gastrointestinal tract, eliminate indigestion, improve fluid circulation in the body, reduce «blood fever», as a diaphoretic and as an expectorant
20.	<i>Calvatia craniiformis</i> (Schwein.) Fr. ex De Toni	+		it has antitumor activity; it is also used as a drug that coagulates blood well
21.	<i>C. utriformis</i> (Bull.) Jaap	+		–
22.	<i>Chlorophyllum rhacodes</i> (Vittad.) Vellinga	+		–
23.	<i>Clitocybe geotropa</i> (Bull. ex DC.) Quéf.	+		has antibacterial action

No	Species	Edible	Poisonous	Medicinal property and use
24.	<i>C. gibba</i> (Pers.) P. Kumm.	+		–
25.	<i>C. odora</i> (Bull.) P. Kumm.	+		–
26.	<i>C. suaveolens</i> (Schumach.) P. Kumm.		+	–
27.	<i>Clitopilus prunulus</i> (Scop.) P. Kumm.	+		the extract from carpophores of these fungi has anticoagulant activity
28.	<i>Collybia butyraceae</i> (Bull.) P. Kumm.	+		–
29.	<i>C. dryophila</i> (Bull.) P. Kumm.	+		the fruiting bodies of the fungi produce β -glucans, which have anti-inflammatory activity
30.	<i>C. fusipes</i> (Bull.) Quél.	+		–
31.	<i>Coprinellus disseminatus</i> (Pers.) J.E. Lange	+		used to obtain biopreparations with antioxidant action
32.	<i>C. micaceus</i> (Bull.) Vilgalys, Hopple & Jacq. Johnson	+		normalizes liver and kidney function, is an antiviral drug, also used in the treatment of alcoholism
33.	<i>Coprinopsis atramentaria</i> (Bull.) Redhead, Vilgalys & Moncalvo	+		inside it is used to improve digestion and reduce phlegm, externally – for malignant dermatitis, ulcers and also as an antitumor agent. An anti-alcohol agent Antabuse is prepared from the mushroom, which is used to treat alcoholism
34.	<i>C. nivea</i> (Pers.) Redhead, Vilgalys & Moncalvo		+	–
35.	<i>C. picacea</i> (Bull.) Redhead, Vilgalys & Moncalvo		+	–
36.	<i>Coprinus comatus</i> (O.F. Müll.) Pers.	+		has antitumor activity, normalizes digestion, heals hemorrhoids
37.	<i>Cortinarius armillatus</i> (Fr.) Fr.	+		–
38.	<i>C. bulliardii</i> (Pers.) Fr.		+	–
39.	<i>C. caerulescens</i> (Schaeff.) Fr.	+		–
40.	<i>C. collinitus</i> (Sowerby) Gray	+		–
41.	<i>C. fulmineus</i> Fr.		+	–
42.	<i>C. infractus</i> (Pers.) Fr.		+	–
43.	<i>C. sanguineus</i> (Wulfen) Gray		+	–
44.	<i>Entoloma clypeatum</i> (L.) P.Kumm.	+		–
45.	<i>E. sericeum</i> Quél.		+	–
46.	<i>E. sinuatum</i> (Bull. ex Pers.) P. Kumm.		+	–
47.	<i>E. verum</i> S. Lundell		+	–
48.	<i>Fistulina hepatica</i> (Schaeff.) With.	+		contains vitamin C, is an antitumor agent
49.	<i>Flammulina velutipes</i> (Curtis) Singer	+		it is a good immunomodulator, has antitumor, antifungal, antiviral activity
50.	<i>Galerina marginata</i> (Batsch) Kühner		+	–
51.	<i>G. sideroides</i> (Bull.) Kühner		+	–
52.	<i>G. unicolor</i> (Vahl) Singer		+	–
53.	<i>Hebeloma crustuliniforme</i> (Bull.) Quél.		+	–
54.	<i>H. radicosum</i> (Bull.) Ricken	+		–
55.	<i>H. sacchariolens</i> Quél.		+	–

No	Species	Edible	Poisonous	Medicinal property and use
56.	<i>H. sinapizans</i> (Paulet) Gillet		+	–
57.	<i>H. sinuosum</i> (Fr.) Quél.		+	–
58.	<i>Hohenbuehelia petaloides</i> (Bull.) Schulzer	+		–
59.	<i>Hygrocybe conica</i> (Schaeff.) P. Kumm.		+	–
60.	<i>Hygrophorus agathosmus</i> (Fr.) Fr.	+		–
61.	<i>H. eburneus</i> (Bull.) Fr.	+		–
62.	<i>H. latitabundus</i> Britzelm.	+		–
63.	<i>H. olivaceoalbus</i> (Fr.) Fr.	+		–
64.	<i>Hypholoma capnoides</i> (Fr.) P. Kumm.	+		–
65.	<i>H. fasciculare</i> (Huds.) P. Kumm.		+	has antiviral, antibacterial, antifungal activity
66.	<i>H. sublateritium</i> (Fr.) Quél.		+	used as an emetic
67.	<i>Inocybe amethystina</i> Kuyper		+	–
68.	<i>I. cervicolor</i> (Pers.) Quél.		+	–
69.	<i>I. erubescens</i> A. Blytt		+	–
70.	<i>I. fuscidula</i> Velen.		+	–
71.	<i>I. geophylla</i> (Sowerby) P. Kumm.		+	–
72.	<i>I. geophylla</i> var. <i>lilacina</i> (Peck) Gillet		+	–
73.	<i>I. grammata</i> Quél.		+	–
74.	<i>I. maculata</i> Boud.		+	–
75.	<i>I. posterula</i> (Britzelm.) Sacc.		+	–
76.	<i>I. rimosa</i> (Bull.) P. Kumm.		+	it is used in the treatment of eczema
77.	<i>I. splendens</i> R. Heim		+	–
78.	<i>I. terrigena</i> (Fr.) Kuyper	+		–
79.	<i>I. vaticosa</i> (Fr.) P. Karst.		+	–
80.	<i>Kuehneromyces mutabilis</i> (Schaeff.) Singer & A.H. Sm.	+		has antiviral activity
81.	<i>Laccaria bicolor</i> (Maire) P. D. Orton	+		–
82.	<i>L. laccata</i> (Scop.) Cooke	+		has antibacterial & anti-inflammatory effects
83.	<i>Lepiota castanea</i> Quél.		+	–
84.	<i>L. clypeolaria</i> (Bull.) P. Kumm.	+		–
85.	<i>L. cristata</i> (Bolton) P. Kumm.		+	–
86.	<i>Lepista nebularis</i> (Batsch) Harmaja	+		has antibacterial, antifungal activity
87.	<i>L. nuda</i> (Bull.) Cooke	+		it is used to lower blood sugar levels, maintain the nervous system, has antibacterial, antitumor properties
88.	<i>L. personata</i> (Fr.) Cooke	+		has antioxidant activity
89.	<i>L. sordida</i> (Schumach.) Singer	+		–
90.	<i>Leucoagaricus leucothites</i> (Vittad.)	+		–
91.	<i>Leucopaxillus alboalutaceus</i> (F.H. Møller) F.H. Møller	+		–
92.	<i>L. giganteus</i> (Sowerby) Singer	+		has antituberculosis effect
93.	<i>Lycoperdon echinatum</i> Pers.	+		–
94.	<i>L. perlatum</i> Pers.	+		stops bleeding, the spore mass is used as a powder for scratches, wounds and burns

No	Species	Edible	Poisonous	Medicinal property and use
95.	<i>L. pusillum</i> Batsch	+		has antibacterial activity, is a good blood clotting agent
96.	<i>L. pyriforme</i> Schaeff.	+		calvacin, found in the fruiting bodies of the fungi, has anti-inflammatory, antibacterial, antifungal, anticancer properties
97.	<i>Lyophyllum decastes</i> (Fr.) Singer	+		–
98.	<i>L. ulmarium</i> (Bull.) Kühner	+		–
99.	<i>Macrolepiota excoriata</i> (Schaeff.) Wasser	+		–
100.	<i>M. gracilentata</i> (Krombh.) Wasser	+		–
101.	<i>M. procera</i> (Scop.) Singer	+		used to promote health and normalize digestion
102.	<i>Marasmius alliaceus</i> (Jacq.) Fr.	+		used as an antifungal agent
103.	<i>M. dryophilus</i> (Bull.) P. Karst.	+		–
104.	<i>M. oreades</i> (Bolton) Fr.	+		has antibacterial properties, also used as a sedative
105.	<i>M. scorodoni</i> (Fr.) Fr.	+		has antibiotic activity
106.	<i>Melanoleuca grammopodia</i> (Bull.) Fayod	+		–
107.	<i>M. melaleuca</i> (Pers.) Murrill	+		–
108.	<i>Mycena pura</i> (Pers.) P.Kumm.		+	–
109.	<i>Oudemansiella longipes</i> (P. Kumm.) M.M. Moser	+		–
110.	<i>Ou. mucida</i> (Schrad.) Höhn.	+		the mycelium contains the antibiotic substance mucidin, which actively inhibits the growth of microscopic molds. In some countries, the drug «mucidermin» prepared from a mushroom is used to treat fungal diseases in humans
111.	<i>Ou. platyphylla</i> (Pers.) M.M.Moser	+		interferes with blood clotting
112.	<i>Ou. radicata</i> (Relhan) Singer	+		used to lower blood pressure
113.	<i>Panellus serotinus</i> (Pers.) Kühner	+		–
114.	<i>P. stipticus</i> (Bull.) P.Karst.			has astringent properties, is used externally as a hemostatic
115.	<i>Pholiota aurivella</i> (Batsch) P.Kumm.	+		–
116.	<i>Ph. curvipes</i> (P. Kumm.) Quéf.	+		–
117.	<i>Ph. destruens</i> (Brond.) Gillet	+		has an antifungal activity
118.	<i>Ph. gummosa</i> (Lasch) Singer	+		–
119.	<i>Ph. lenta</i> (Pers.) Singer	+		–
120.	<i>Ph. squarrosa</i> (Oeder) P.Kumm.	+		–
121.	<i>Pleurotus cornucopiae</i> (Paulet) Rolland	+		used as an immunomodulator
122.	<i>P. dryinus</i> (Pers.) P.Kumm.	+		it is used for tumors of the larynx and esophagus
123.	<i>P. eryngii</i> (DC.) Quéf.	+		it is an antioxidant
124.	<i>P. ostreatus</i> (Jacq.) P.Kumm.	+		it is used to relax muscles and relieve muscle contractures with lumbago, numbness of the limbs. The fungi have high antitumor and antiviral activity
125.	<i>Pluteus cervinus</i> (Schaeff.) P.Kumm.	+		interferes with blood clotting
126.	<i>P. leoninus</i> (Schaeff.) P.Kumm.	+		–
127.	<i>P. nanus</i> (Pers.) P.Kumm.	+		–

No	Species	Edible	Poisonous	Medicinal property and use
128.	<i>Psathyrella candolleana</i> (Fr.) Maire	+		–
129.	<i>P. hydrophila</i> (Bull.) Maire			has hypoglycemic activity
130.	<i>P. spadiceogrisea</i> (Schaeff.) Maire	+		–
131.	<i>Pseudoclitocybe expallens</i> (Pers.) M.M. Moser	+		–
132.	<i>Psilocybe coprophila</i> (Bull.) P. Kumm.		+	–
133.	<i>Ripartites tricholoma</i> (Alb. & Schwein.) P. Karst.	+		–
134.	<i>Rozites caperatus</i> (Pers.) P. Karst.	+		–
135.	<i>Schizophyllum commune</i> Fr.			it is used for decreased tone, general weakness of the body, for various gynecological diseases, breast cancer, used for leucorrhoea
136.	<i>Strobilurus stephanocystis</i> (Kühner & Romagn. ex Hora) Singer	+		has antibacterial effects
137.	<i>Stropharia aeruginosa</i> (Curtis) Quél.	+		–
138.	<i>Tricholoma album</i> (Schaeff.) P. Kumm.		+	–
139.	<i>T. flavovirens</i> (Pers.) S. Lundell	+		has antibacterial effects
140.	<i>T. pardinum</i> (Pers.) Quél.		+	–
141.	<i>T. pessundatum</i> (Fr.) Quél.		+	–
142.	<i>T. portentosum</i> (Fr.) Quél.	+		–
143.	<i>T. sulphureum</i> (Bull.) P. Kumm.		+	–
144.	<i>T. terreum</i> (Schaeff.) P. Kumm.	+		–
145.	<i>T. virgatum</i> (Fr.) P. Kumm.		+	–
146.	<i>Tricholomopsis rutilans</i> (Schaeff.) Singer	+		–
147.	<i>Volvariella bombycina</i> (Schaeff.) Singer	+		–
148.	<i>V. gloiocephala</i> (DC.) Broekhout & Enderle	+		–

According to Table, several species of agaricoid basidiomycetes (*Agaricus arvensis*, *Amanita citrina*, *A. phalloides*, *A. rubescens*, *Calocybe gambosa*), which are used for gastrointestinal diseases, and also promote metabolism and stimulate digestion, have been identified in the protected area. It should also be noted that, since macrofungi are considered difficult to digest food, in case of gastrointestinal diseases, they should be consumed in small quantities.

Most of the species found on the territory of the Shikahogh State Reserve have antibacterial, antiviral, antifungal properties, which are associated with chemicals such as terpenoids, purines, phenolic derivatives isolated from fruit bodies and fungal mycelium. These are species *Agaricus campestris*, *Agrocybe dura*, *Clitocybe geotropa*, *Flammulina velutipes*, *Hypholoma fasciculare*, *Kühneromyces mutabilis*, *Pholiota destruens*, *Lepista nebularis*, *Lepista nuda*, *Oudemansiella mucida*, *Laccaria laccata*, etc.

Thus, the above indicates great potential for the use of macromycetes, both edible and poisonous species in medicine and economy.

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ՀԱՅԱՍՏԱՆԻ ՇԻԿԱՎՈՂ ՊԵՏԱԿԱՆ ԱՐԳԵԼՈՑԻ
ԱԳԱՐԻԿՈՒԴ ԲԱԶԻԴԻՈՄԻԿԵՏՆԵՐԻ ՕԳՏԱԿԱՐ
ԵՎ ՎՆԱՍԱԿԱՐ ՀԱՏԿՈՒԹՅՈՒՆՆԵՐԸ

Շիկահողի պետական արգելոցի ագարիկոիդ բազիդիոմիցետների բիոտայի ուսումնասիրության արդյունքում հայտնաբերվել է սնկերի 148 տեսակ, որից 97 տեսակն ուտելի է, 48 տեսակը՝ թունավոր, իսկ 52-ն օժտված են բուժիչ հատկություններով: Մակրոմիցետները բժշկության և տնտեսության մեջ օգտագործվելու մեծ ներուժ ունեն:

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ПОЛЕЗНЫЕ И ВРЕДНЫЕ СВОЙСТВА АГАРИКОИДНЫХ
БАЗИДИОМИЦЕТОВ ШИКАОХСКОГО ЗАПОВЕДНИКА АРМЕНИИ

В результате изучения биоты агарикоидных базидиомицетов Шикахохского государственного заповедника обнаружено 148 видов грибов, из которых 97 видов являются съедобными, 48 видов – ядовитыми и 52 вида обладают лечебными свойствами. Макромицеты имеют большой потенциал для использования в медицине и народном хозяйстве.