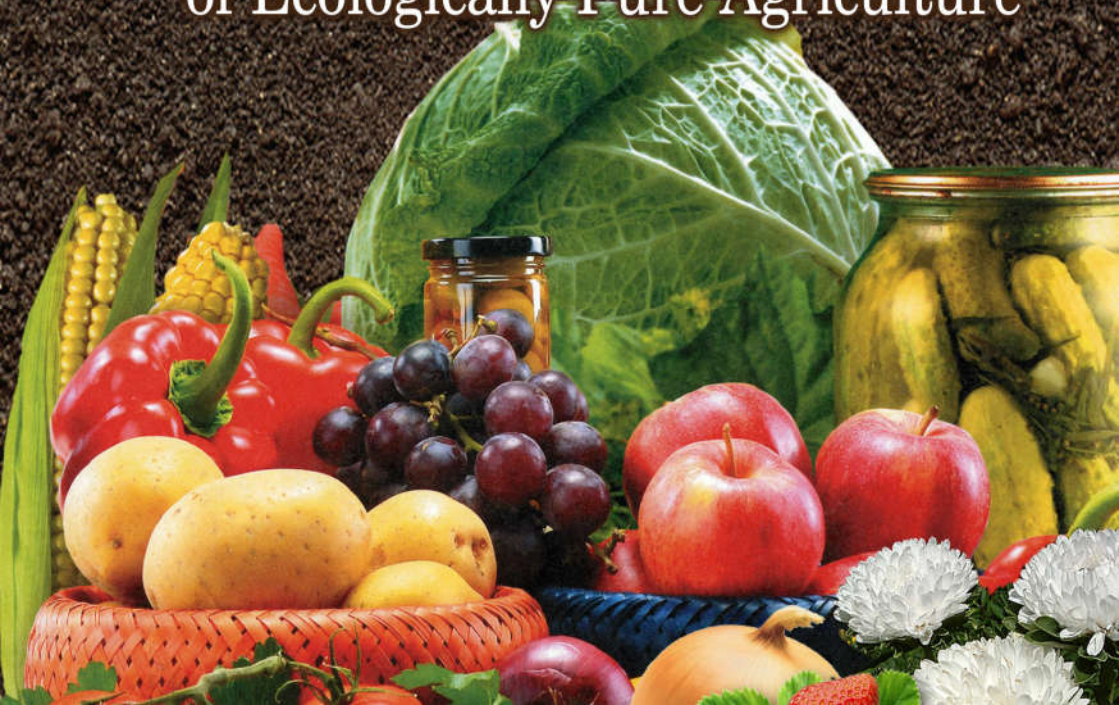


Revive your soil!

FLORA-S FITOP-FLORA-S

Fundamentals
of Ecologically Pure Agriculture





**Director of "BIO-BAN", LLC,
Academician of the European Academy of Natural Sciences, Hannover,
Academician of the Academy of Medical and Technical Sciences
of the Russian Federation, Moscow**

Mr. Nikolay Mikhailovich Boyarskiy

We care of you, your health, prosperity and welfare!

Awards of "BIO-BAN", LLC
for achievements in the development and production
of dry peat-humic fertilizers "FLORA-S" and "FITOP-FLORA-S"
"Russian Quality"

The program of the Russian Federation State Standard LAUREATE of "Hundred best goods of Russia" Program



Moscow, 2004-2015



Moscow, 2002



Moscow, 2001-2003



Mark of the Year, 2006



**Gold Medal
Altai 2000-2003**



**Gold Medal,
International
Altai Fair, Barnaul, 1996**



**Gold Sign "All-Russian
Mark" (III millennium)
"Quality Sign
of XXI Century"**



**INTERNATIONAL
ACADEMY
OF INDEPENDENT
EXPERTS,
Moscow, 2001**



**Small Gold
Medal,
"Siberia-Kazakhstan",
Novosibirsk,
2000**



**Big Gold Medal
"Siberia-Kazakhstan",
Pavlodar, 2004**



**Big Gold Medal
"Siberia-
Kazakhstan",
Bishkek, 2004**



**Gold Medal
"EXPO-SIBERIA",
Kemerovo, 2001**



**GOLD MEDAL
OF 5th INTERREGIONAL
MACROECONOMIC
EXHIBITION
"Chernozemye-2002",
VF "Veta", Voronezh**



**GOLD MEDAL
of Interregional
Exhibition-fair,
Moscow, 2006**



**GOLD MEDAL of
"SUMMER SEASON-2001"
Exhibition-fair,
Ekaterinburg**

**The winner of the international contest
"Best goods and services of Siberia-GEMMA"**



**GOLD MEDAL
Siberia-2004**



**GOLD MEDAL
Siberia-2005**



**GOLD MEDAL
Siberia-2010**



**GOLD MEDAL
Siberia-2011**



**GOLD MEDAL
Siberia-2012**



**GOLD MEDAL
Siberia-2013**



**GOLD MEDAL
Siberia-2014**



**Khabarovsk,
2006-2007**



**Gold Medal, "Autumn Gifts"
Exhibition-Fair**



**Gold Medal,
All-Russian Exhibition of
Centre "Golden Autumn"**



**Gold Medal
"ECO 2005"
Competition**



**"European Quality"
Competition,
Saint-Petersburg, 2008**



**Gold Medal,
Saint-Petersburg, 2012**



**Gold Medal of International Exhibition-Fair
"Agros-2012",
Saint-Petersburg, 2012**



**Gold Medal
"BIOINDUSTRY-2013"
Saint-Petersburg, 2013**



**On base of Expert Commission's conclusion
of The Russian Union of Industrialists and Entrepreneurs (RSPP)
in the field of Health industry
under the Administration of the President of the Russian Federation**

**"BIO-BAN" Company
has been awarded with a title**

**"Leader of high technologies
in the field of health and environment care"
July 2012**

CONTENTS

ABOUT COMPANY	7
INTRODUCTION	8
1. FERTILIZERS OF XXI CENTURY	12
“FLORA-S” AND “FITOP-FLORA-S”	12
1.1 Composition	13
1.2 Characteristics	14
1.3 The Difference of “FLORA-S” and “FITOP-FLORA-S” Preparations	17
From the Other Fertilizers	17
1.4 Refusal From Manure, Compost and Sapropel.....	20
1.5 Refusal From the Mineral Fertilizers.....	21
1.6 The Norms of the Consumption of “FLORA-S” and “FITOP-FLORA-S” Preparations	23
2. RECOMMENDATIONS FOR APPLICATION OF “FLORA-S” AND “FITOP- FLORA-S” PREPARATIONS	24
2.1 Preparation of the Fertilizers to the Application.....	24
2.2 Preparation of the Soil for the Seedlings’ Raising.....	25
2.3 Application of the Fertilizers for the Seeds Steeping	26
2.4 Safety Requirements.....	27
2.5 Preparation of the Soil for Seedling Planting in the Ground	27
3. RULES OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS APPLICATION ON SEPARATE CULTURES	28
3.1 Recommendation for Application of “FLORA-S” and “FITOP-FLORA-S” in Cultivation of Wheat per 1 ha.	28
3.2 Recommendation for Application of “FLORA-S” and “FITOP-FLORA-S” Preparations in Cultivation of Rice	30
3.3 Recommendations for Application of “FLORA-S” and “FITOP-FLORA-S” for Cultivation of Sugar Cane	32
3.4 Recommendations for Application of “FLORA-S” and “FITOP-FLORA-S” for Cultivation of Vegetable Cultures	34
3.5 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application for Bushes and Trees Cultivation.....	35
3.6 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application for Olive Plantations Cultivation	36
3.7 Fertilizing of Date-palms with “FLORA-S” and “FITOP-FLORA-S” Preparations	38
3.8 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application when Grapes Growing	40
3.9 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application When Amaranth Cultivation.....	44
3.10 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application for Landscape Gardening.....	46
“FLORA-S” represents a unique highly concentrated mixture of humic acids (not humates). On its basis “FITOP-FLORA-S” has been developed, which contains a	

natural strains of the bacterium <i>Bacillus subtilis</i> (strain VKPM B-7048) which inhibits the pathogenic microflora in the soil and on plants.	47
3.11 Application of “Flora-S” and “FITOP-FLORA-S” Preparations for the Cultivation of Roses	48
4. APPLICATION OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS FOR THE CULTIVATION OF HOUSE PLANTS	49
5. APPLICATION OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS AFTER COLLECTING OF THE CROP	51
6. APPLICATION OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS IN THE HOTOHOUSE	51
7. THE APPLICATION OF “FITOP-FLORA-S” PREPARATION FOR THE PROCESSING OF CELLARS , STOREHOUSES AND PRODUCTION LAID FOR LONG-TERM STORAGE	53
8. EXAMINATIONS CONDUCTED ON THE TERRITORY OF ALTAI REGION AND OTHER REGIONS OF THE RUSSIAN FEDERATION SHOWED HIGH PERFORMANCE OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS	54
9. ABOUT COLLABORATION	56

ABOUT COMPANY

Company “BIO-BAN” (Big Innovative Field – Biology, Agrotechnology and Science) was founded in 1995 for the development and production of ecologically pure dry peat-humic fertilizers. In the same year for the first time in the Russian Federation our company created and patented the fertilizers, the basis of which were humic acids. Since 1998 the release of “FLORA-S” and “FITOP-FLORA-S” preparations on industrial basis has been started.

The production of fertilizers is realized with the assistance of the Altai region administration and Biysk administration. At present the organization production level makes possible to carry out the release of the products taking into consideration any demands of the consumer. Company “BIO-BAN” is constantly engaged in the development of the newest technologies of the humic acids’ application.

There is a control of the production quality in the company which is exercised according to the standards of the normative acts of the RF. The preparations “FLORA-S” and “FITOP-FLORA-S” have gained the acceptance and approval among the agricultural manufacturers, farmers and gardeners-amateurs. Peat-humic fertilizers have no analogs in Russia and abroad and meet all the requirements of the Europe Quality Organization (EQO). They are applied for all the crop and plant types in all the natural-climatic zones.

The preparations are included to the State register of the Russian Federation; the company has its trade mark. The preparations became the laureates and the owners of the mark of the program “Russian Quality”, four times laureates of the program “100 Best Goods of Russia”, the laureates of the competition “National Ecological award”. For the development and production of ecologically safe, effective and comfortable in application dry peat-humic fertilizers company “BIO-BAN” is awarded to 29 golden medals and different diplomas. In September 2006 the preparations “FLORA-S” and “FITOP-FLORA-S” passed the voluntary certification “Mark of the year” and received the conformance certificate. In 2009 they were included to the “Russian Book of Records and Achievements” and were directed to the “Guinness Book of Records”. In 2010 company “BIO-BAN” received the international certificate ISO 14001:2004 in Germany for manufacture and sale of ecologically pure production which confirms that the production corresponds to the highest at the moment world standards. In 2012 the preparations came through ecological certification and received the certificate of conformity “EuroAsEco”. And on the basis of resolution of expert commission RSPP on health industry under the Administration of the President of the Russian Federation our company was awarded to the title of the Winner of the all-Russian competition “Leader of high technologies in the sphere of health and environment protection-2012”. Besides in 2012 the indices of higher ecological compatibility of our fertilizers were proved by the Methodological Center of certification MC CCK RF by the resolution of ROCC RU: CCK.044.1271, expiration date till July 2014.

We introduce this booklet to everyone who is connected with agriculture, newest technologies in the field of agriculture which is very important at the modern stage of human evolution because it is necessary to treat the soil like your own organism and it will be grateful in abundant and healthy crop.

The principle of our company sounds as follows:

”We care about You, Your health, prosperity and welfare!!!”

Director of “BIO-BAN” company
Academician of Medical Technical Academy of sciences of the RF
Nikolay Boyarskiy

Multitasking Functionality of "FLORA-S" and "FITOP-FLORA-S" Preparations

This guide is fully devoted to ecologically pure farming, preparations handling while working with plants on the ground and in greenhouses, processing of cellars, storages and harvest gathered. For over 20 years, "BIO-BAN" company is actively researching the effect of "FLORA-S" and "FITOP-FLORA-S" preparations produced by the company to the various cultures, including atypical for Russia, conducting its work in various parts of the world. Sometimes the results turn to be really stunning for the people who work with the preparations. For example, a crop growth on organic soybeans in Latin America was 43%. Olives yield has been increased by 28% and oil output has been increased by 17%.

If we calculate the cost-effectiveness, it is clear that extra yield of oil obtained from 1 hectare increased by 34%, when refuse from mineral fertilizers and the move to environmentally friendly preparations "FLORA-S" and "FITOP-FLORA-S", and the quality of the product was far higher.

The preparations showed themselves excellently on sugarcane, where they also increased both the yield and sugar yield per unit area. "FITOP-FLORA-S" preparation has been recognized as biofungicide and received "CERES" certificate of quality, because it shows excellent efficiency in the suppression of the majority of bacterial and fungal diseases both as in prophylactic and in therapeutic purposes. When products are treated by means of "FITOP-FLORA-S" the amount of aflatoxins is reduced from 1200 PPX to 6-280 ppx. All these figures are documental confirmed with reports of various scientific and research institutions (India, Mongolia, Paraguay, Italy, Latvia, Serbia, etc.).

But "FLORA-S" and "FITOP-FLORA-S" preparations solve a much wider range of issues. The preparations work not only in plant growing, but also in animal husbandry, fish farming, and beekeeping. The effect of the preparations on fish and bees has been researched. Namely FGBOUVO "Russian State Agrarian University - Moscow Agricultural Academy named after Timiryazev", Department of Aquaculture and Beekeeping made tests on fish; and Department of Beekeeping and Fish Breeding performed tests on bees. The results showed the following positive effect on the growth and development of the bees:

1. Feeding of bee colonies with sugar syrup containing "FITOP-FLORA-S" preparation stimulates the activity of the pharyngeal glands of **worker bees during which a milk content increases in the cells of three days' larvae by 1.48 times.**
2. Stimulating feeding with "FITOP-FLORA-C" preparation act positively on the flight activity of bees increasing it by 1.08 times in comparison with the control value.
3. When feeding of bee colonies with sugar syrup containing "FITOP-FLORA-S" preparation, protein and fat accumulation occur more intensively, and emerging young bees correspond to the breed standard by weight and by the main exterior features.
4. The use of "FITOP-FLORA-S" preparation as a part of stimulating feeding exerts an inhibitory effect on causative agent of bees' ascospheiosis and ensure preventive measures

against it, have a positive impact on the accumulation of families' forces and worker bees' honey crop load.

The following results were obtained regarding fish:

1. Increasing the oxygen concentration by 4-5% in the water of experimental ponds, which is caused by more intensive work of phytoplankton.
2. Better development of bacteria and available phytoplankton led to a higher concentration of zooplankton.
3. For 50 days of young carp cultivation the individual mass reached 25% and 36% higher than the control specimen.

The more experiments and tests are carried out with the preparations, the newer functions of the preparations are opened. A huge number of individual farmers and consumers of our products is carried out experiments on their own in animal husbandry, and poultry farming, and even in the treatment of diseases and cosmetic purposes. Like a person accumulates the invaluable experience of generations, and our products have incorporated all the age-old knowledge of the laws of nature.

Of course, the main area of these preparations application is crops, but the preparations work well also in other spheres. "BIO-BAN" company has created the preparations, the action range of which is wide, therefore each of you has an opportunity to find the application of the preparations in the area where you want. Thus we confirm the saying: "Man is the maker and the creator" and discover new facets of the world surrounding. And all is in your hands!

INTRODUCTION

Soil is a multiphase medium where flow physical and chemical processes. The basis of any soil fertility is humus which contains the humic acids.

Simply speaking the soil is a living organism where flow different processes of vital activity. If this organism is exhausted (as a result of human activity) and doesn't get nutrition it dies sooner or later. Nowadays as a result of irrational human activity hundred thousand hectares of agricultural land are excluded from circulation. In many regions extensive agriculture still predominates, when the increase of croppage occurs at the expense of area broadening of the cropland and not at the expense of increase of the soil fertility.

It is worth thinking: "What the future may hold for us if we continue treating such richness of our planet as soil in such a barbarian way!". May be it's time to say yourself: "Stop!" and think about tomorrow?!

The restoration and increase of the soil fertility is one of the main problems of people.

The application of traditional restoration methods of the humus horizon (mineral fertilizers, manure, etc.) and chemical means of plant protection lead to deplorable result:

1. Oversaturation of the soil with the metal ions of different groups, and as a result excessive acidity or soil alkalinity, which oppressively influences the vegetable organism as a whole. Deoxidization of the soil requires conduction of different kinds of soil reclamation works and as a result extra investments.

2. Active development of the pathogenic microflora in the soil affects the plants and fruits.

3. Accumulation of heavy metals and radionuclides in the soil (with the long-term period of half-decay). Together with the fruits these substances get into the human organism causing difficult diseases (many of them with fatal outcome).

4. Soil pollution with the products of chemical means of plant protection, etc.

In the modern world it is impossible to imagine agriculture without application of mineral fertilizers, pesticides, crop rotation and other methods of classical agricultural science. But application of different pesticides can cause reciprocal reaction. Nature creates more stable populations. For effective fight with pests and diseases you have to use higher concentrations of poisons, interchange the application of different pesticides, and create new aggressive and stable preparations. In response to this nature again creates more stable species of pests and diseases. And year in year out there goes the spiral growth of man and nature opposition, their fight, the result of which is the disturbance of the human immune system, growth of oncological diseases and birth-rate of children-invalids, infertility, etc.

Using the aggressive environment for vegetable and animal world, we influence not only the pests and plant diseases but also the plants themselves. It is no secret that even after applying of the fertilizers plants stop developing for some time (depending on the type of fertilizers and their concentration from several hours to several days and only using extremely high doses there occurs the cessation of

development up to death). What can we say about the application of pesticides, penetrative functions of which are ten times even hundred times higher. At the moment of the pesticide contact with the plant and its penetration inside the cell the plant gets a strong chemical stroke. Getting on the plant the preparation penetrates inside the cell and reacts with the cell juice changing its chemical composition artificially. There begins an unregulated process capable to cause genetic mutation in the cells, that means spontaneously create genetically modified production which is very dangerous for people and animals. And the longer is the protective effect of the chemical preparation the more aggressively it affects the plant and as a result the higher is the possibility of changes appearance in the plant cells at the level of DNA. A genetically modified plant when eating it can cause such irreversible mutative processes in the human or animal organism.

People fight with nature instead of understanding its laws and completely interact with it in order not to disturb the natural agrobiocenose and only help it. You can help a plant as well as a man not at the moment when he is already at death's door because of the application of the potent agents but at the initial stage of his development, give him a block of protection with the perfect immune system and during the whole life constantly support the immune system at a high level providing the optimal nutrition during the vegetative period. As in the natural conditions, where a human never interfered, nature regulates itself the processes of the vital activity of the vegetable and animal organisms. The aim of a man is not to disturb it and help it.

Meanwhile the notion about the soil fertility is developing now from the position of rational nature management. Nowadays there is a question about the application of ecologically safe technologies in all the fields of industry, especially in agriculture.

On November 8, 2001 the Government has adopted a resolution “About restoration of fertile layer of soil at the expense of organic fertilizers...”. Nowadays this resolution doesn't work because local authorities, administration and Government do not want to think of health and welfare of their citizens. And we don't speak about ecological safety of a separate region but about normal vital activity of the whole humanity!!!

Ecologically safe technologies will help to stop the scale pollution of the soil cover and restore its most important property – fertility!

Advantages of “Flora-S” and “Fitop-Flora-S” preparations over Mineral Fertilizers and Means of Plants Protection

	Mineral fertilizers	Chemical means of plants protection	“FLORA-S” “FITOP-FLORA-S”
Seed rejection	-	-	+
Increase of seed sprouting energy	-	-	+

Soil preparation	-	-	+
Increase of plants taken roots	-	-	+
Improvement of soil structure and buffer properties	-	-	+
Disease destruction in soil	-	-	+
Disease control on plants	-	10-12 days	The whole season
Accumulation of nutritive substances in soil (gr. NPK)	-	-	+
Neutralization of chemical plants protection means	-	-	+
Shortening of harvest ripening terms	-	-	+
Increase of fruits mass of any kind of crops	-	-	+
Increase of keeping and flavoring quality	-	-	+
Obtaining of ecologically safe products	-	-	+
Safe treatment of storehouses and production which is put there for long-term storage.	-	-	+

1. FERTILIZERS OF XXI CENTURY “FLORA-S” AND “FITOP-FLORA-S”

From times immemorial mankind shows a great interest in the problem of improving the soil fertility and its restoration after natural cataclysms and irrational activity of the man.

At the dawn of the civilization in Egypt in the valley of the Nile people have already used humic acids (sludge contained humic acids with the concentration of 2 g/l). At that time people have already used the fertile layer of the river valley for improving the nutrient properties of the soil. Later the scientists proved that the humic acids took part in the formation of the soil and the preparations with the content of the humic acids 2 g/l have been produced.

Nowadays there are fertilizers with the higher concentration of the humic acids, the amount of which defines the effect of the humic preparations on the processes running in the soil and plants. At present the leader in quality and efficiency are ecologically pure dry peat-humic fertilizers “FLORA-S” and “FITOP-FLORA-S”

produced on basis of the humic acids and the achievements of microbiology which help to carry out a complex approach to the problem of improving the soil fertility, crop capacity and the effect of the agricultural production.

1.1 Composition

“Flora-S” preparation is a highly concentrated mixture of biologically active substances extracted from environmentally friendly raw materials of natural origin, balanced on macro- and microelements with a high content of pure humic acids (not less than 10 g/l). “FLORA-S” is a fundamental preparation. On its basis “FITOP-FLORA-S” preparation has been developed, which is a complex of humic acids and the natural strain of bacteria *Bacillus subtilis*. The bacteria create conditions for the development and amount increase in the soil of nitrogen-fixing, phosphate, silicate, and other microorganisms, and also increases the growth of bacteria *Bacillus subtilis*. The strain range refers to probiotics. XXI century is a century of probiotics, not antibiotics, because the last cause deep and irreversible mutation processes in a living organism. This strain accumulates bacterial mass to suppress putrefactive, pathogenic microorganisms in the soil and the plants in open and shielded soil, and also indoors (warehouses, cellars, greenhouses), etc.

The basis of the dry peat-humic fertilizers “FLORA-S” and “FITOP-FLORA-S” is humic acids. The basic component of the preparations is peat.

“FLORA-S” preparation is a highly concentrated mixture of biologically active substances isolated from the ecologically pure raw material of natural origin balanced according to macro- and micro-elements with the high concentration of the humic acids (not less than 12 g/l). “FLORA-S” preparation is a fundamental preparation. “FITOP-FLORA-S” is made on its basis. It serves as a basis not only for the plant growing but also for the other branches of agriculture.

The preparation “FITOP-FLORA-S” contains a registered monobacterium strain (*Bacillus subtilis*), which is effectively fighting with the rotten, pathogenic microflora and works out more than 70 peptide antibiotics-bacitracins and also increases the amount of Azotobacteria, Fosfobacteria and *Bacillus subtilis*. The strain refers to the number of probiotics – XXI century – the century of probiotics, not antibiotics because the latter arouse in the living organism deep and irreversible mutative processes. This strain works out a bacterial mass for fighting with the rotten, pathogenic microflora in the soil and on the plants of the open and protected soil, closed areas (storages). Nowadays many companies are trying to produce fertilizers with lots of bacteria and therewith the bacteria are contrary to each other. You should be careful with these preparations. When the pathogenic microflora is destroyed the bacteria start to kill each other because there is the law of nature according to which the strongest survive. This can lead to the bacteria mutation and as a result to the biological war. Unlike such preparations “FITOP-FLORA-S” contains a monobacterium (one strain) which protects the plants and the soil increasing the stability to different diseases: phytophthora rot, gray rot, mildew, downy mildew, phomosis, blackleg, rhizoctoniose, etc.

The preparations have a stable composition; they are specific biological preparations because the strain that is used in “FITOP-FLORA-S” is a natural strain.

It cannot die as in preparation there is such a number and content of the humic acids which is a natural preservative of this strain. It stays in a preserved condition because there is no pathogenic, rotten microflora in the preparations.

1.2 Characteristics

The polyfunctionality of the humic acids, which are a part of “FLORA-S” and “FITOP-FLORA-S” preparations (absorptive, catalytic, accumulative, protective-transport and others) and of the monobacterium activity, has made the production of the united biochemical and microbiological process in the soil and on the plants possible. That helps to:

1. Effectively influence the system “soil-water”

- restore the structure of the soil thanks to the complexing ability of the humic acids forming the mineral “bridges” with potassium and magnesium which improve the structure of the soil;

- increase the soil fertility, decrease the negative balance of the humus: thanks to the accumulative and transport function of the humic acids in the soil occurs the storage of the main organic and mineral nutrition elements, essential for the normal development of the soil microflora. Thus the humic acids and the monobacterium entering into the composition of the preparations stimulate the development of the useful soil microorganisms which in their turn accelerate the cleaning and restoration of the soil and help to accumulate the humus;

- considerably improve the water-physical and physiochemical properties of the soil; in aggregate with the application of the land reclamation methods solves the problem of wetland including the conditions of a hot humid climate;

- accelerate the water metabolism. Penetrating into the water the humic acids entering into the composition of the preparations change the water structure in such a way that its molecules become more organically settled similar to the fragments of the ice structure. As a result, the water achieves the well known properties of the “melt water” which improves the plant’s nutrition;

- The presence of high concentration of humic acids in the soil favours the increase of the degree of aeration (water cycle) and volume content of water in the soil, which improves the moisture capacity of the soil and consequently helps the plant to resist drought and increases crop capacity of agricultural crops in regions poor in water.

- Regular application of the preparations increases the buffer capacity of the soil, that means the capacity of the soil to keep the natural pH level even during the redundant entrance of the bitter and alkaline agents, as a result it decreases the acidulation, amount of alkaline and salinization, which limits agriculture;

- effectively clean polluted basins from aggressive chemical substances and connections converting them into the inert form, accelerate the process of the breakdown of the organic residue, improve the water structure thereby helping to

restore water biocenose. The unique capacity of the humic acids to intensify the metabolic processes in the organism make our preparations useful in the fish industry;

- convert heavy metals, harmful and radioactive elements including toxic industrial waste and chemicals dangerous for the environment, into the inert unavailable for the plants form, thereby increasing the ecological properties of the soil (thanks to the tread function of the humic acids);

- return the soils excluded from agriculture by means of increasing their agricultural value;

- except the general instructions for using these preparations, there are special methods of agrotechnology:

- The method of ceasing the sand movement by producing the humic horizon (the humic acids convert the interoozy compounds situated in the sand from a biologically passive form into the active one. As the humic acids perform like the catalysts for these interoozy compounds). The process of forming the fertile level of the soil takes 12-24 months and in the conditions of dry farming – 24-36 months.

- The technology of reclaiming of the oily grounds which is very important at the biological step. The acclamation of these preparations helps to restore the fertile layer after the oil spill in short time (less than a year), increase the germination of the seeds on the oily grounds, shorten the terms of the shoots and increase the air-dry plant mass more than 10 times.

- There was developed the method, which helped to restore the fertile layer of the soil after flood, fire and the descent of mud streams during 8-12 months by accelerating the biochemical and microbiological processes in the soil.

2. Improve the quality of the seed material. Penetrating into the plant and functioning on the cell level inside of it humic acids compiling “FLORA-S” and “FITOP-FLORA-S” preparations increase the energy of the seed sprouting by 4,5-18%, the seed germination by 3-5%, favours the increase of the root system of the plant 1,7-2,5 times, the acceleration of the transplanted plants, the formation of the root system of the cutting, the increase of the mass of any crop fetus, the acceleration of the adaptive process of the plant to the concrete soil-climatic conditions, which provides to increase the sort and pedigree composition of the plants.

3. The root and foliar extranutrition of the plants with “FLORA-S” and “FITOP-FLORA-S” preparations provides the optimal growth and development of the plant in any phase of vegetation, which leads to the increase of the crop capacity by 20-40%, the decrease of the terms of the crop ripening, to the absence of the rotten diseases on the plants and soil. These preparations favour the nutrition improvement of the plants. The humic acids that comply “FLORA-S” and “FITOP-FLORA-S”

preparations form the complex compounds with phosphorus, potassium, nitrogen and microelements which are easily assimilated by the plants. Humic acids play an important role in the transportation of the microelements because they are natural complexing compounds. The humic acids favour the formation of chlorophyll, vitamin C, sugar, amino acids, ferments, proteins and other important components. “FLORA-S” and “FITOP-FLORA-S” preparations regulate the plant metabolism, preventing the accumulation of the nitrates, selectively improve the permeability of the cell membranes for the potassium ions which increases not only the quantity but also the quality of the crop.

4. The processing of the plants with “FLORA-S” preparation after the chemical means decreases the oppressive effect on the plants which also positively affects the development of the plant, the increase of the quality and the quantity of the crop. It should be mentioned that in the issue of the single processing of the soil with “FLORA-S” preparation decreases 2-3 times the content of the radionuclides in the agricultural production when it is grown on the soil infected with the radioisotopes cesium-137 and potassium-40, decreases the content of the nitrates 10-30 times.

5. When using the tank mixture with herbicides and insecticides reduce the amount of applied pesticides by 30-40%.

6. The processing of the storages and the collected crop with “FITOP-FLORA-S” preparation before its laying for a long-term storage provides the safety of the crop by 85-95%. This property is connected with the presence of the monobacterium *Bacillus subtilis* in this preparation, the environment of this monobacterium is all the pathogenic and rotten micro-flora.

7. The whole scope of the above mentioned functions of “FLORA-S” and “FITOP-FLORA-S” preparations helps to solve the problem of the restoration and functioning of the hothouse sector including the exclusion of the necessity to change and heat the ground in the hothouse, to achieve the increase of the crop capacity by 20-40%, decrease the consumption of the mineral fertilizers by 80-85%, exclude the use of manure and other organic and organic-mineral fertilizers, which will lead to the ecologically pure production with high favor qualities and nutritious value.

8. “FLORA-S” and “FITOP-FLORA-S” preparations can be used both by professional florists and amateurs. The fertilizers suit for the cultivation of indoor blooming, decorative-deciduous, grown in hanging pots and ramble plants, succulents, hothouse flowers, the creation of flower gardens, the landscape gardening of the farmland, the creation of football and playgrounds (the preparations can be used for the cultivation of the turf, they accelerate its interaction with the uterine layer, shorten the terms of the establishment of the turf, favour the increase of the root system).

Before using our preparations look carefully through the instructions and follow them, only in this case you can get abundant and healthy crop.

1.3 The Difference of “FLORA-S” and “FITOP-FLORA-S” Preparations From the Other Fertilizers

DIFFERENCE I. For production of fertilizers “FLORA-S” and “FITOP-FLORA-S” peat is used. Usually humic preparations are obtained from three main sources - brown coal, peat and sapropel. The most cheap and popular method of production is the brown coal. It is shredded and for the transfer into the biologically active state alkali is added. Brown coal is a natural absorbent of heavy metals. Under the influence of time factor heavy metals interact with humic acids. In case of the ingestion of the humic acids, obtained from brown coal, by the soil oversaturated with mineral fertilizers, chemical means of plant protection, there occurs the transfer of heavy metals, radionuclides from the inert forms in the mobile, available for assimilation by plants forms. This occurs due to the protective-transport and regulatory function of the humic acids. For the same reason, the humic acids transfer the chemical elements, accumulated in the soil as a result of many years of the application of mineral fertilizers, from the preserved, not metabolic form in the assimilative by the plants form, as a result of it there occurs their excessive absorption and oversaturation of a plant organism with the mineral forms of chemical elements.

Transferred in the active state heavy metals, radionuclides, mineral substances cause harm to the soil biota, contribute to the death of the positive microflora, as a result of which the autochthonous, destroying the humus content microflora begins to develop actively.

All this leads to the decrease of crop capacity (in the course of long-term application, as in the first few years of application of potassium humate (and more often the potassium humate is obtained from coal) shows itself as the stimulator of plant growth, especially of their vegetative mass), the deterioration of the harvest quality, the development of diseases in plants and soil, the decrease of harvest preservation, transportability, the marketable state of products. The tests showed that during the processing of fruit trees with the humic acids, obtained from brown coal, they firmly bound with the aggressive substances of soil and getting into the fruit, transfer into hardly dissociating compounds, which are removed with difficulty or not at all removed from the plant. The accumulative function of the storage tissues of plants aggravates the situation. This seriously worsens the fruits quality, makes them unsuitable for food production and eating. The normal vital functions of the perennial parts of plants is disturbed, which, for example, leads to the decrease of their frost resistance.

During the application of such humates in the cultivation of fodder grasses, as a result of the above mentioned processes in the animals' organism there occurs the accumulation of heavy metals, toxic elements, aggressive background of which leads to the decrease of immunity, the disruption of the vital activity of the organism, the regeneration of cells as a result of mutation processes that increase the probability of irreversible changes on the cellular level of the animals' organism.

Accumulated in plants, fruits and meat-and-milk products heavy metals and other chemical aggressive substances, pathogenic microflora get into the human body, causing a variety of diseases, connected with the activity disturbance of the

organs and systems of organs, metabolic disorder, the development of tumors and other neoplasms disturbing the vital functions of the human organism and often leading to death. Their excretion from organism is complicated by the fact that heavy metals penetrated in the organism of humans and animals in the usual way (without the accompaniment of the humic acids) are excreted from the organism several times faster than the heavy metals penetrated in the animal organism together with the humic acids (obtained from brown coal). That shows the action of penetrating and protective-transport function of the humic acids.

There are already known cases of mass food intoxication of people, the cause of which was eating of agricultural products, grown on such fertilizers, which "pulled" from the soil into the fruits all the aggressive and dangerous for the living organism substances.

The practice of application of "FLORA-S" and "FITOP-FLORA-S" preparations (highly concentrated mixture of the humic acids extracted from peat) in Russia and abroad has shown the decrease of the ripening period and increase of vegetables, fruits and berries, cucurbitaceous crops productivity, improvement of the taste and nutritional value of crops, the quality of seed material, the increase of keeping capacity, transportability, the improvement of the marketable state of production.

"FLORA-S" and "FITOP-FLORA-S" preparations were registered and permitted for sale and application in the countries - members of the WTO. Products grown on these preparations are recommended for children, medical and recreational institutions.

The second source is sapropel - bottom oozy sediments of water bodies. In spite of the fact that it is recognized, that according to the effectiveness of the impact on soil and plants humic substances obtained from sapropel are more effective than from brown coal, but still it is worth considering that in sapropel there are much more various mineral components, often poisonous substances, because at the bottom of water bodies there accumulates everything that is washed away from roads, fields, falls with rain and snow, including pesticides, fertilizers, heavy metals, radioactive substances, etc. That's why the humic substances obtained from sapropel are no safer than those that are obtained from brown coal.

What do we have as a result of the application of the humic substances obtained from brown coal and sapropel?

* The soil is saturated with the particles of heavy metals, radionuclides and aggressive compounds in the active state.

* Plants, accumulating a lot of harmful substances (heavy metals, pesticides and agrochemicals, the excess of mineral fertilizers, which were previously applied in the soil) and absorbing the excess amount of microelements.

* Plant diseases and the decrease of crop capacity.

* Fruit with low flavouring and nutritious qualities, with reduced safety, especially amenable to the effect of pathogenic microflora.

* The diseases of animals fed on forage grasses grown with the application of such humates.

* The diseases of various degrees of severity among people who ate fruits grown with the application of the humic fertilizers, obtained from brown coal, and the meat-and-milk products obtained from the above mentioned animals (there are

already known cases of mass food intoxication of people, the cause of which was eating of the agricultural products grown on such fertilizers, which "pulled" from the soil into the fruits all the aggressive and dangerous for the living organism substances).

* The increase of the probability of occurrence of irreversible changes and mutation processes in all the living organisms that interact with processed by such humates soil (micro-organisms) or with growing in it plants (animals and humans), disturbance of their vital activity.

DIFFERENCE II. In the composition of "FLORA-S" and "FITOP-FLORA-S" preparations there are no derivatives of the red Californian worm and the earthworm because:

- the excrements of the omnivorous worms can contain dangerous for a human and the environment compounds; Californian worm is atypical for the natural zones of the Russian Federation; that's why the products of its vital activity can lead to the soil infection and cause the disease of the gastrointestinal tract among people and animals, cause the epidemic of unknown aetiology comparable in character, transience and impossibility of curability with the bird flu.

- the Earthworm destroys the soil and as a result such soil isn't suitable for all the plants and in all the natural-climatic zones;

- the red Californian worm causes the soil acidulation (when manure is processed);

- they have a low concentration of the humic acids that increases the cativity of the pathogenic microflora;

- the derivatives of the worms destroy the pathogenic microflora and can become the source of the extra infection of the soil (especially the compost types of worms). By the way the red Californian worm is an intermediate master for nematodes.

DIFFERENCE III. Birds and chicken dung are not used in the production of the preparations because they increase the amount of the rotten microflora in the soil, this microflora destroys the plants, fruit and can cause different diseases among animals and people (the bacteria with the high penetrative function).

DIFFERENCE IV. The absence of the modified lignohumate in the composition of "FLORA-S" and "FITOP-FLORA-S" preparations.

Lignohumate is a substance, which is obtained from pulp and paper waste and waste of spirit industry, which have undergone thermal and chemical processing with the help of different acids and bases.

Dry powder of lignohumate is received by means of evaporation at high temperatures. But the critical limit of the temperature, above which there occurs the irreversible breakdown of all the organic elements including the humic acids, is +45-+55°C. This decreases the effect of this preparation in agriculture by 35-95%.

Lignohumate is usually received from the waste of pulp-and-paper and alcohol industry which came through not only the thermal but also the chemical processing with the help of different acids and bases. Such a processed product has an aggressive medium with a long period of activity that also decreases the concentration and properties of the humic acids which are a part of the preparation. This makes the readymade product low-grade and light-effective from the point of view of the fertility restoration of the soil and the improvement of its structure. The investigations have shown that probiotics cannot live in the modifications of lignohumate. Probiotics are the microorganisms, which actively destroy the rotten, pathogenic microflora, therefore there is a definite aggressive medium in the preparation.

1.4 Refusal From Manure, Compost and Sapropel

Any soil can give birth only then when it has strength and health for it. Traditionally most people improve the soil in their gardens with manure, different compositions of compost, mineral fertilizers, peat and other human methods and don't want to pay their attention to the fact that all these "helpers" sour and pollute the soil, saturate it with the pathogenic microflora.

Why do we always forget that a plant lives on the mineral elements dissolved in water. No manure and compost can help in this case because compost doesn't have the nutritious elements of the plant and is a product of rotting and fermentation of a lifeless cellulose. Apart from billions of different dangerous microbes and weed seeds manure contains toxic for plants ammonia elements and also a lot of helminth's eggs. The science proved that the self-destruction of the helminth's eggs in the natural conditions lasts 7 years and the pathogenic microbes are not only indestructible but also start intensively propagating in the proper condition. The result of playing or even staying on such a green lawn both for people and animals can be deplorable. And people never associate the infection with the helminthes especially beef tapeworm with an ordinary rest in the garden. By the way both manure and compost in the issue of rotting prevent the access of oxygen to the plant roots causing its fading and wreck and also favour the development of the pathogenic micro-flora. And our entire future crop in the issue of such titanic labor withers on the vine.

Apart from everything above mentioned we shouldn't forget about the fact that manure is the source of affection of soil and further of plants, is the causative agent of such a disease as vascular wilt. This disease declares itself more clearly on 2 main crops such as cucumbers and asters. They turn out to be the most susceptible.

Other plants also suffer but they just decrease their crop capacity and vascular wilt causes complete destruction among these crops. How exactly does this disease declare itself? If to take asters they actively grow often till the moment of efflorescence but suddenly begin fading and fade completely.

Cucumbers at the beginning of development also grow fast but suddenly in the evening you notice that some cucumber vines faded. The day was hot and you decide that it was because of heat. In the morning the cucumber vine looks alive, the turgor in leaves is restored. But in the evening the same vines are faded. In several

days the plants die completely. If to make a cross cut then you see that the vessels are black or brown. Their embolism was caused by fusarium. It is very vigorous. There are no effective methods of chemical protection from this causative agent. It saves its vital activity in the soil for many years. The more manure we bring to the garden the more causative agents of this dangerous disease of plants we take to the soil, but unfortunately we do not connect these things. The spores of hernia of cabbage crops are also contained in manure. This harmful disease strikes not only cabbage plants but also turnip, garden radish, black radish, swede. The spores of hernia are very vigorous – they stay in the soil up to 5-6 years.

More than that manure can contain:

- hormones, antibiotics, mineral additives, with which animals are stuffed at every farm for the increase of productivity;
- causative agents of diseases, which can be transmitted from sick animals to people. It is known that bacillus E-coli saves its vital activity in manure and soil during several months.

So think whether you need it for you and your family?

Sapropel is oozy sediments of fresh basins. After airing they are used as organic fertilizers. For 1 hectare over 70 tons are applied! No one speaks about the harm of sapropel. Together with it we apply into the soil everything that is found in the sediments of the basins. That means everything that was washed away from the fields, freeways, stope buildings and other places. These are the residues of pesticides and mineral fertilizers, heavy metals and the residues of oil. Sapropel is a good sorbate, that's why all the baleful substances are connected and accumulated by it. But there comes the moment when it starts to give it to the nature. And here occurs the worst intoxication of the soil and everything that grows on it.

We can avoid all these situations if we start to use ecologically safe technologies using which have been tested and found wide application in the agriculture.

It is well known that there are huge resources of mineral elements in the soil which are necessary for the plant nourishment. Not less of them are fallen with the dew, frost and are received with the underground water. But the main part of these substances is not available for the plants. Thanks to their penetrating, connective and protective-transport functions the humic acids which are included in the composition of "FLORA-S" and "FITOP-FLORA-S" gradually convert these mineral compounds into an easily assimilated by the plants form, improving the nourishment of a vegetable organism, giving them the right to choose the necessary on this step of development nutritious element by themselves. This property of "FLORA-S" and "FITOP-FLORA-S" preparations excludes the necessity of using mineral fertilizers.

1.5 Refusal From the Mineral Fertilizers

Mineral fertilizers are one of the sources of additional nourishment of the plants. But from the point of view of increasing the soil fertility they are useless because they don't contain the organic part. That's why together with the mineral fertilizers people usually apply peat (organic additive) in amount of 500 m³ for 1 hectare (350

tons). The norm of applying of the mineral fertilizers for 1 hectare is on the average 600 kg.

Meanwhile in order to deoxidize the soil we apply slaked lime. The doses of lime (in tons CaCO_3 for 1 hectare) vary in the range of 1 ton on the clay sand and light loams to 8 tons on hard loams on the ground of the pH definition of the salt extract taking into consideration the texture of the soil. The investigations and the long-term practice proved that the effect of liming depends not only on the exact calculation of the lime dose and the type of the lime fertilizers but also the thickness of its grade and the uniformity of the distribution on the area. This demands purchasing special equipment and as a result enormous material costs.

The overfeeding of the plants is also dangerous. In the issue of the nitrogen excess the plants receive intense growth of the leaves, weak setting of the fruit and the delay of the terms of their ripening, the decrease of the steadiness to diseases. For example, if you overfed cabbage with nitrogen and watered it good, the head of the cabbage forms for a long time, the density of the head lowers and dense heads quickly burst. Inside the beet root develop hollows because of the additional nitrogen. Onion doesn't ripen for a long time and develops a thick collar which decreases its quality and the keeping capacity. The leaves and epicormic branches of tomatoes grow fast, the bloom is weak and flabby, the ripening of the fruit is delayed, and the fruit become watery. Both cucumbers and tomatoes have stronger growth of leaves, creeping stems, tendrils, barren flowers.

Probably many people remember the fruit and cucurbitaceous crops that were brought in the time of the USSR from Central Asia. And what do we have now? Tasteless, watery, perishable goods. And the reason is the excessive application of the nitrogen-bearing fertilizers and the other chemical means.

It should be mentioned that the positive effect of the mineral fertilizers and lime on the plants will be decreased every year. That means that it will be necessary to apply their additional amount again and as a result polluting the soil. The abuse of mineral fertilizers and the complete absence of attention to the organic part of the soil lead to the ecological catastrophe, the decrease of the crop capacity, the degradation of the ecological pureness of the agricultural production. In order to avoid such consequences the restricted applying of the mineral fertilizers is necessary. It should be remembered that a plant assimilates 17-22% of the mineral fertilizers applied, the rest of them 78-83% stay in the soil and lead to the development of the pathogenic microflora. Bitter soil is a favorable habitat of the wireworm and such weeds as orach and black gnats.

During the foliar extranutrition of plants the preparation stays on the leaves and tillers that can cause skin irritation, chemical burns, ulcer, etc if a man contacts with the plants. Animals in this case receive food poisoning because they lick off from the hair the residues of the preparation that was on the plant. If you apply "FLORA-S" preparation after such extranutrition in 5-10 days and in 14 days "FITOP-FLORA-S" with such composition of humic acids, which deoxidize the soil and as a result lead to the escape from the weeds (orach, black gnats) and wireworm. By the way the digestibility of the mineral elements by the plants will be 65-80% that will help to decrease the amount of applying by 70-80%. Secondly, it will help to prevent the soil acidulation, destroy the pathogenic microflora, save the biochemical and

microbiological soil structure, and prevent the accumulation of biologically harmful substances in the soil, fruit and green mass of the plants.

And most important thing is that, considering more closely the principle of plant's nutrition, you can see that it is not MINERAL, as claims most of agrochemists contrary to common sense and laws of development of nature, but carbon-hydrogen-nitrogen. The main sources of vital activity plants receive from the atmosphere, including nitrogen. It is available for plants due to the bacteria that live in the soil, provided that they are not destroyed by the systematic introduction of mineral fertilizers and pesticides. The other elements of nutrition are consumed in microdoses, and if the system of agriculture is correct they are always enough in the soil. Therefore, we eliminate the necessity for applying mineral fertilizers in the soil.

Remember that plants, like people, are alive and are composed of 93% of the organic part and of only 7% of the mineral component, and the main part they absorb by leaves, not the roots. Processing of soil by mineral fertilizing destroys the soil micro-organisms, which provide the soil life, soil fertility, natural biocenosis, thanks to which continues the life on the Earth.

Do not destroy your assistants, who together with humic acids are capable of making any soil viable.

1.6 The Norms of the Consumption of “FLORA-S” and “FITOP-FLORA-S” Preparations

One package of “FLORA-S” (30 g) is calculated for the foliar fertilizing for 500-600 m², root fertilizing for 80-110 m² (it depends on the type of the soil, its condition, the type of the crop).

One package of “FITOP-FLORA-S” (10 g) is enough for the foliar fertilizing for 160-260 m², root fertilizing for 30-60 m² (it depends on the type of the soil, its condition, the type of the crop).

During the whole cycle of the application of the preparations (from spring to autumn) for one hundred square meters you will need on the average 3 packages of “FLORA-S” and 3 packages of “FITOP-FLORA-S”, which is more efficient and safer than the application of manure. The amount of applied fertilizers can be increased if the soil is characterized with the low crop capacity and is affected by the pathogenic microflora (if the diseases are actively developing in the soil and on the plants).

10 g of “FITOP-FLORA-S” preparation is calculated for 150 m² for the processing of hothouses, storages and collected crop (during the period of keeping). The processing is conducted by dispersion.

In order to process a hothouse which is 30 m² you will need 2 packages of “FLORA-S” preparation and 6 packages of “FITOP-FLORA-S” preparation (it depends on the soil condition and the plants in the hothouse).

You may find in the instructions the detailed procedure of preparing and application of “FLORA-S” and “FITOP-FLORA-S” preparations. The liquid solution of the preparations is applied on the soil or plants in the following way:

- in the garden – with the help of the hand sprayer according to the instruction;
- in the industrial application – with the help of the standard sprayers used in agriculture in proportion of 1kg for 2-3 hectares – for the soil preparation and root fertilizing, 1kg for 7-10 hectares – for the foliar fertilizing and processing after the application of the chemical means of the plant protection.

All the above mentioned is a little bit of where you can use our preparations. Their declared properties are proved by the Russian and foreign experts.

“FLORA-S” and “FITOP-FLORA-S” preparations became the Laureates and owners of the Sign of the Program “Russian Quality”, three times Laureates of the Program “100 Best Goods of Russia”, the Laureates of the competition “National Ecological Award”. They are awarded with 29 golden medals and numerous diplomas at the Russian and international exhibitions for the production of the ecologically pure fertilizers “FLORA-S” and “FITOP-FLORA-S”.

2. RECOMMENDATIONS FOR APPLICATION OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS

“FLORA-S” preparation is issued on basis of TS 0392-003-40830869-03, “FITOP-FLORA-S” on basis of TS 0392-004-40830869-03. The preparations are protected by patent of the Russian Federation № 2075466, included to the State register of the RF (registration № of “FLORA-S” is 1150-08-210-297-0-0-0-1, registration № of “FITOP-FLORA-S” is 1179-08-210-299-0-0-0-1).

2.1 Preparation of the Fertilizers to the Application

The liquid concentrate (LC) of the fertilizer “FLORA-S” is prepared by means of dilution of 30 g in 330-350 ml of boiled water or 1.5 glass of water. The LC is ready for the application in 24 hours, during this time the powder should be stirred 4-6 times. The powder should be stirred at the temperature 40-42⁰C.

The liquid concentrate (LC) of the fertilizer “FITOP-FLORA-S” is prepared by means of dilution of 10 g in 110-120 ml or 0.5 glass of boiled water. The LC is ready for the application in 48-72 hours, during this time the powder should be stirred 4-6 times. The powder should be stirred at the temperature 40-42⁰C.

1. *The process solution (PS) for the root fertilizing* is prepared by means of dilution of 100 ml (0.5 glass) of the liquid solution in 10 liters of unstrained water (for seedlings and house plants 1 table spoon of the LC for 1 liter of boiled water). 10 liters of prepared PS are applied by means of light moistening for 30-35 m² of the processed area.

2. *The PS for the foliar fertilizing* is prepared by means of dilution of 100 ml (0.5 glass) of the LC in 25-30 liters of not chlorinated water (for the seedlings and house plant 1 tea spoon of the LC for 1 liter of boiled water). The PS is applied by means of spraying according to the instruction.

3. *The PS of "FLORA-S" for the soil preparation on the farmland* is prepared by means of dilution of 350 ml (1.5 glass) of the LC of "FLORA-S" in 100 ml of unstrained water and is applied on 100 square meters.

4. *The PS of "FITOP-FLORA-S" for the soil preparation on the farmland* is prepared by means of dilution of 120 ml (0.5 glass) of the LC of "FITOP-FLORA-S" in 100 ml of unstrained water and is applied on 100 square meters. If there are serious diseases such as vascular wilt, clubroot, etc. the concentration of the PS "FITOP-FLORA-S" should be increased 3-5 times, that means for 100 m² you apply not 120 ml of the LC but 350-500 ml.

2.2 Preparation of the Soil for the Seedlings' Raising

Variant 1. If you have prepared the soil since autumn, you should process it with the PS of "FLORA-S" and "FITOP-FLORA-S" in a month before sowing in order to increase the nutritious and protective properties of the soil.

You should follow these recommendations:

1. The prepared soil should be thawed with the temperature not less than +5°C and scattered on the definite area for more even processing.

2. Apply into the soil the PS of "FLORA-S" – 30 ml (3 table spoons) for 500 ml of not chlorinated water in proportion of 500 ml of the PS per 10 liter of the ground by means of light moistening.

3. In 14 days you should apply into the soil the PS of "FITOP-FLORA-S" – 30 ml (3 table spoons) for 500 ml of not chlorinated water in proportion of 500 ml of the PS per 10 liters of the soil by means of light moistening.

4. In 14 days after the processing with "FITOP-FLORA-S" you can sow the seeds preliminarily steeped in the PS of "FLORA-S" or "FITOP-FLORA-S" into this soil. (see paragraph 2.3)

Variant 2. The soil for the seedlings can be prepared beforehand on your farmland. Allot the area 2 m² on your farmland in spring. When the positive average daily temperatures set in and the ground warms up to +5°C:

1. You should loosen the ground with the help of a pitchfork or dig it over not deeply.

2. Apply in the soil the PS of "FLORA-S" by means of light moistening – 100 ml of the LC for 10 liters of not chlorinated water in proportion of 10 liters of the PS for 2 m² (dependent on the condition and the type of the soil).

3. In 14 days apply in the soil the PS of "FITOP-FLORA-S" by means of the same method – 100 ml of the LC for 10 liters of not chlorinated water in proportion of 10 liters of the PS for 2 m² (dependent on the condition and the type of the soil)..

4. Then the processed with the preparations area is periodically weeded and loosened.

5. The second processing should be held in the middle of July spacing 10-14 days between the applying of the PS of "FLORA-S" and "FITOP-FLORA-S". After

each applying you should loosen this area. This processing of the soil is more effective before watering or rain.

At the end of August – beginning of September you can take the soil for the seedling from this area.

Such soil will have good nutritious properties, physiochemical and microbiological composition optimal for plant growing and development.

Note. For the earthworms not to get into the prepared soil it should be sifted through the hair sieve (in the pots if there are no other nutrition the earthworms start to eat the root system of the plants).

The prepared soil can be sprinkled with the PS of “FITOP-FLORA-S” 14 days before sowing the seeds for prevention of diseases – 10 ml of the LC (1 tablespoon) for 500 ml of not chlorinated water in proportion of 500 ml of the PS for 10 liters of the ground.

! You should know and remember that:

1. You shouldn't steam the soil or spill it with boiling water because the nutritious substances and the soil capillary are destroyed, the positive bacteria are first to die and the pathogenic microflora will be developing.

2. You shouldn't water the soil with the solution of manganese because we destroy the humic acids and more positive bacteria die.

3. You shouldn't take the soil for the seedling from the hothouses because it contains a lot of pathogenic (rotten) microflora and also wintering stages of pests such as arachnoid tick, greenfly, etc.

2.3 Application of the Fertilizers for the Seeds Steeping

1. Prepare the solution for wetting – 10 ml (1 table spoon) of the liquid concentrate for 0.5 l of not chlorinated water.

Note. If the seeds are processed by the chemical means of protection (it concerns all the seeds bought in the shop), they are wetted for one half of time in the process solution of “FLORA-S” and for the second half of time in the solution of “FITOP-FLORA-S”. If they are not processed (grown in your garden) – in the process solution of “FITOP-FLORA-S”.

2. The temperature of the process solution should be about +20⁰C (do not place it on the heating devices).

3. Keep the wetting time of the seeds:

- tomatoes – 24-72 hours;

- cabbage, garden radish, turnip, summer radish – 2 hours;

- aubergines – 24-48 hours;

- pepper, vegetable marrow, carrot, garlic, onion, beet, cucumbers, cucurbitaceous – 24 hours;

- potatoes – 1.5 hour (before planting make a hollow in the soil, lay a film, spill the potatoes, spray it with the process solution of “FITOP-FLORA-S”, cover it with the film and leave for the mentioned time).

Note. Before wetting a big batch of seeds it is necessary to test the fertilizer on a trace of the seeds. If the seeds are affected by diseases or there are a lot of

chemically aggressive substances in them, the germination will be low or even absent because the preparation destroys the pathogenic microflora, which disturbs the seed structure and in the healthy seeds strengthen their immune system and as a result the immune system of the future plants. Depending on the sort of the seeds the wetting time can be reduced, in industrial manufacture the seeds are only sprinkled (process solution with the concentration 100 ml of the LC for 5-9 l of not chlorinated water). When using the fertilizers in private gardens you can increase the wetting time of the seeds till their sprouting.

2.4 Safety Requirements

The preparations “FLORA-S” and “FITOP-FLORA-S” have the group of danger – IV (low-hazard product). When applying them it is necessary to follow the safety precautions:

- keep in the places not available for children;
- if the preparations get on the skin or mucous membranes wash them with water and soap;
- if the preparations get in your eyes - wash them with water.

Expiration date and storage conditions

Expiration date of the preparations “FLORA-S” and “FITOP-FLORA-S” in dry condition – 5 years at the temperature from -50°C to $+50^{\circ}\text{C}$. In dissolved condition – 5 years at the temperature from $+5^{\circ}\text{C}$ to $+40^{\circ}\text{C}$. Keep in a dry, protected from straight sun rays place.

2.5 Preparation of the Soil for Seedling Planting in the Ground

28 days before planting it is necessary to apply in the soil “FLORA-S” preparation in proportion of $100\text{ m}^2 - 100\text{ l}$ of the process solution by means of light moistening. The process solution is prepared in the following way: 30 g of dry powder are diluted in 330-350 ml of boiled water or 1.5 glass of boiled water and in 24 hours of drawing the received liquid concentrate is diluted in 100 l of not chlorinated water.

14 days before planting apply “FITOP-FLORA-S” preparation in proportion of $100\text{ m}^2 - 100\text{ l}$ of the process solution. The order of preparation of the PS:

- first of all, we prepare the LC by means of diluting of 20 g of the fertilizer “FITOP-FLORA-S” in 250 ml of boiled water. The LC is ready in 48-72 hours, during this time the powder should be mixed (stirred) 4-6 times. The powder should be diluted at the temperature of water $40-42^{\circ}\text{C}$.
- the prepared LC should be diluted in 100 liters of not chlorinated water.

Note. In case of adverse weather conditions, the schedule of processing before planting can be changed. We should prepare the “tank mixture”:

- mix 300 ml of the LC of “FLORA-S”, 200 ml of the LC of “FITOP-FLORA-S” and 100 liters of not chlorinated water. This amount is enough

for the processing of 100 m². After applying of such mixture the sowing and planting of any crops can be conducted in 3-5 days.

3. RULES OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS APPLICATION ON SEPARATE CULTURES

(These rules are standard. For each soil climatic zone, the calculation is individual. Application rates may vary).

3.1 Recommendation for Application of “FLORA-S” and “FITOP-FLORA-S” in Cultivation of Wheat per 1 ha.

By integrated application of ecologically pure Dry Peat- Humic Fertilizers (DPHF) “Flora-S” and “Fitop-Flora-S” we get favorable conditions for:

1. Obtaining of high quality grain regardless of weather conditions of cultivation.
2. Reducing of the period of plant’s vegetation.
3. Increasing of crop capacity up to 20-40%.
4. Reducing of affection by fungous diseases some years by 100%.
5. Refusing of application of mineral fertilizers and chemical means of protection for diseases, neutralization of impact of chemical protection and herbicides, and as a consequence there is ecologically pure production.
6. Opportunity of realization of ecologically pure grain at higher prices on the grain market.
7. Restoration of soil microflora and therefore natural soil fertility.
8. Opportunity to get complete structural air-penetrating and moisture-permeable soil.
9. Creation of agrocoenosis in the fields.
10. Reducing of toxic impact of external factors, such as air mass transportation of harmful substances (heavy metals, acid precipitations etc.)

Preparation of the fertilizers for the application

Before the application, liquid concentrated solution should be made. The liquid concentrate of the fertilizers is prepared by means of dilution of powder and warm boiled non-chlorinated water at the ratio of 1:11 (1 kg of dry substance per 11 liters of water). The Liquid Concentrate of preparation “Flora-S” is ready for application in 24 hours and the Liquid Concentrate of preparation of “Fitop-Flora-S” is ready in 48-72 hours, during this time the solution should be stirred 4-6 times. The powder is diluted with water by temperature 37-42°C.

Direct Application

1. One month before the transplanting the seedlings it is necessary to treat soil with the Process Solution (PS) of “FLORA-S” at the rate of 2 kg of the preparation (22 liters of liquid concentrate) for 3 hectares.

2. In 2 weeks apply in the soil the PS of “Fitop-Flora-S” with the concentration of 1:100 at the rate of 1 kg of DPHF (11 liters of liquid concentrate) per 3 ha.

In case there is impossibility to observe the terms (i. e. beginning of the processing of the soil 28 days before the sowing) then simultaneous application of the preparations in a tank mixture is possible.

Preparation of the tank mixture for soil treatment:

The tank mixture is prepared at the rate of 700 g of dry substance of “Flora-S” (8 liters of the Liquid Concentrate) and 230 g of dry substance of “Fitop-Flora-S” (3 liters of the Liquid Concentrate) for 300 liters of the Process Solution. The Liquid Concentrate is filtered through metal or plastic sieve. It is strongly prohibited to filter the Liquid Concentrate through cheese-cloth and other means.

Apply the tank mixture at the rate of 300 l of the Process Solution per 1 ha.

1. Seed treatment.

The Process Solution of “Flora - S” for cereal seeds processed by the chemical means of protection is prepared at the rate of:

20 g of dry substance - 220 ml of the Liquid Concentrate - 20 l of the Process Solution per 1 ton of seeds.

The Process Solution of “Fitop-Flora-S” for treatment of seeds of cereals, not processed by chemical means of protection, is prepared at the rate of 20 g of dry substance - 220 ml of the Liquid Concentrate - 20 l of the Process Solution per 1 ton of seeds.

Note: First it should be checked on small quantity of seeds and then apply for big quantities.

2. Foliar fertilizing.

The first foliar fertilizing is with “Flora-S” in a phase of stooling (or before it) to stimulate growing process at the rate of 150 g of dry substance per 1 ha (1650 ml of the Liquid Concentrate - 300 l of the Process Solution)

The Second Foliar fertilizing is conducted with “Fitop-Flora-S” in the phase of ear carry-over at the rate of 150 g of dry substance per 1 ha (1650 ml of the Liquid Concentrate - 300 l of the Process Solution)

The third foliar fertilizing is conducted in the phase of milk-wax ripeness at the rate of 150 g of dry substances per 1 ha (1650 ml of the Liquid Concentrate per 300 l of water)

Note: Fertilizings can coincide with chemical treatments of protection against beetles. Then apply DPHF “Flora-S” in 5-7 days after chemical treatment of the plants. During the period of vegetation, it is desirable to conduct not less than 3 treatments by the preparations “Flora-S” and “Fitop-Flora-S” alternating the preparations.

If there are first signs of diseases conduct fertilizings with the preparation “Fitop-Flora-S”.

Variant 1

Sphere of consumption of the preparations	Consumption of “FLORA-S” preparation per 1 ha	Consumption of “FITOP-FLORA-S” preparation per 1 ha
Soil treatment	0.66 kg	0.330 kg
Seed treatment	0.02 kg	0.02 kg
1 st foliar fertilizing	0.15 kg	
2 nd foliar fertilizing		0.15 kg
3 rd foliar fertilizing	0.15 kg	
Reserve 20%	0.2 kg	0.08 kg
TOTAL per 1 ha:	1.18 kg	0.58 kg

Variant 2 (with preparing of tank mixture)

Sphere of consumption of the preparations	Consumption of “FLORA-S” preparation per 1 ha	Consumption of “FITOP-FLORA-S” preparation per 1 ha
Soil treatment	0.7 kg	0.23 kg
Seed treatment	0.02 kg	0.02 kg
1st foliar fertilizing	0.15 kg	
2nd foliar fertilizing		0.15 kg
3rd foliar fertilizing	0.15 kg	
Reserve 20%	0.24 kg	0.08 kg
TOTAL per 1 ha:	1.26 kg	0.48 kg

Total sum according to the first variant is 460,3 Euro per 1 hectare:

(1.18 X 250 Euro = 295 Euro + 0.58 kg X 285 Euro = 165.3 Euro).

Total according to the second variant 451.8 Euro for 1 hectare:

(1.26 kg X 250 Euro= 315 Euro + 0.48 kg + 285 Euro = 136.8 Euro)

3.2 Recommendation for Application of “FLORA-S” and “FITOP-FLORA-S” Preparations in Cultivation of Rice

The use of “FLORA-S” and “FITOP-FLORA-S” provides:

1. Improving the structure and nutrient properties of the soil;
2. Deoxidation and desalinization of the soil;
3. Increase protein and carbohydrates content in the grain;

4. Increase crop productivity by 20 - 27%;
5. Increase germination by 3.5% and seed germination energy by 4.5-18%;
6. Increase of root system 1.7-2.5 times;
7. Reducing harvest ripening by 10 -15 days;
8. Enriching the soil with useful microflora, improve the nutritional and geotechnical properties of the soil;
9. Implementation of heavy metals transfer from the biologically active form into an inert form;
10. Preventing plants from affection of various diseases;
11. Increase the number of Azotobacteria, Fosfobacteria and Bacillus subtilis, which play an important role in the ecological condition of the soil.

Fertilizers preparation for the application.

1) The liquid concentrate of “FLORA-S” and “FITOP-FLORA-S” preparations is prepared by diluting 1 part of the dry powder in 11 parts of non-chlorinated water (1 kg of dry powder results 11 liters of mother solution). The liquid concentrate of “FLORA-S” preparation is ready for use after 24 hours, “FITOP-FLORA-S” is ready in 48-72 hours. During this time the powder should be stirred 4-6 times in view of its high dispersibility. The powder should be diluted at 40°C temperature.

Fertilizers are applied in liquid form using the aggregates, intended for mineral fertilizers, herbicides and pesticides.

The order of “FLORA-S” and “FITOP-FLORA-S” preparation application:

1. Prepare the soil before planting seeds: a month before apply a working solution of “FLORA-S” in the soil at the rate of 0.75 kg of dry preparation per 1 ha (750 g of dry powder results 8 l of mother solution and 100 liters of working solution).

2. After two weeks apply a working solution of “FITOP-FLORA-S” in the soil at the rate of 0.75 kg of dry preparation per 1 ha (750 g of dry powder results 8 l of mother solution and 100 liters of working solution).

3. In case of industrial production, it is necessary to spray seeds solution with a working solution with a concentration of 100 g of dry powder - 10 liters of working solution per 1 ton of seeds.

If the seeds are processed by chemical means of protection, they are sprayed with a working solution of “FLORA-S” and working solution of “FITOP-FLORA-S”. If not processed by chemical means of protection, then apply a working solution of “FITOP-FLORA-S”.

This measure increases germination (by 3-5%) and germination energy (by 4.5-18.5% compared to control batch), promotes increasing of root system 1.7-2.5 times, and stimulates the growth of plants.

4. The first foliar fertilizing is performed with a working solution of “FLORA-S” preparation, when 2-3 leaves appear, at the rate of 150 g of dry powder - 1.5 l of mother solution - 30 liters of working solution per 1 ha.

5. The second foliar fertilizing is performed with a working solution of “FITOP-FLORA-S” during the tillering stage at the rate of 300 g of dry powder - 3 liters of mother solution - 30 liters of working solution per 1 ha.

6. The third foliar fertilizing is performed with a working solution of “FLORA-S” during the earing stage at the rate of 150 g of dry powder - 1.5 l mother solution - 30 liters of working solution per 1 ha.

7. Fourth foliar fertilizing is carried out by slight spraying with a working solution of “FITOP-FLORA-S” during the flowering stage at the rate of 150 g of dry powder - 1.5 l mother solution - 30 liters of working solution per 1 ha.

8. Fifth foliar fertilizing is carried out in 18-20 days with working solution of “FLORA-S” in the early stage of wax ripeness at the rate of 150 g of dry powder - 1.5 l mother solution - 30 liters of working solution per 1 ha.

9. Treatment of the soil after harvest is performed with a working solution of “FLORA-S” at the rate of 1 kg per 1 ha (1 kg - 1 l mother solution - 100 liters of working solution).

Note: It is reasonable to perform foliar fertilizing in the evening after sunset.

	“FLORA-S”	“FITOP-FLORA-S”
Soil preparation	0.75 kg	
1st root fertilizing		0.75 kg
Seeds treatment	0.1 kg	0.1 kg
Foliar fertilizing	0.15 kg	
2nd foliar fertilizing		0.3 kg
3rd foliar fertilizing	0.15 kg	
4th foliar fertilizing		0.15 kg
5th foliar fertilizing	0.15 kg	
Soil treatment after harvest	1 kg	
20% reserve	0.46 kg	0.26 kg
Total per 1 ha	2.76 kg	1.56 kg

Note: This procedure is intended for soils with an average depletion, acidification and affection of diseases. In the case of severe infestation of soil, the concentration of “FLORA-S” and “FITOP-FLORA-S” must be increased.

3.3 Recommendations for Application of “FLORA-S” and “FITOP-FLORA-S” for Cultivation of Sugar Cane

What is the effect of “FLORA-S” and “FITOP-FLORA-S” preparations application on the sugar cane plantations?

1. Application of mineral fertilizers and chemical means of protection from disease is eliminated, and as a consequence - the possibility of ecologically pure sugar production. Prices for eco-friendly sugar in the world market are 3 times higher than the price of sugar produced by conventional technologies.

2. Increasing the percentage of survival due to the creation of a single chemical and microbiological process.

3. Increasing the number of high-grade shoots during tillering.
4. Increasing the yield by 20-40%.
5. Due to the growing process of photosynthesis an increased accumulation of sugars occurs (increase of 2-3%).
6. Humic acids make soil neutral without additional liming.
7. Eliminates the need for crop rotation.
8. Prolonging the service life of plantations by 2 times.

Fertilizers preparation for use

Before use, a concentrated solution is prepared as an aqueous emulsion. To make it dry powder fertilizer is mixed with non-chlorinated warm water in ratio 1:11 (1 kg dry substance per 11 liters of water). The liquid concentrate of "FLORA-S" preparation is ready to use within 24 hours, and "FITOP-FLORA-S" preparation - within 48-72 hours, during which time it must be stirred (shaken) 4-6 times. The powder is diluted with water at temperatures 37-42°C.

- 1) A working solution for soil fertilizing is prepared by dilution of 100 ml of liquid concentrate in 10 liters of water.
- 2) Working solution for foliar application is prepared by dilution of 100 ml of liquid concentrate in 25 l of water.

Direct application

1. Apply a working solution of "FLORA-S" in the soil with a concentration of 1:100 (100 ml of liquid concentrate per 10 liters of water) at the rate of 1 kg of dry preparation per 3 hectares.
2. After 3-5 days apply a working solution of "FITOP-FLORA-S" with a concentration of 1:100 at the rate of 1 kg of dry preparation per 3 hectares. (If pathogen fusarium wilt or root rot pathogens present in the soil, it is necessary to increase the dose up to 3-5 kg per 1 ha, depending on the degree of affection).
3. 2-3 days before planting it is necessary to pour the seedlings with a solution of "FLORA-S" with concentration of 100 ml of liquid concentrate per 10 l of water, at the rate of 10 ml per each plant.
4. At the same time carry out the plantation treatment with "FLORA-S" preparation at the rate of 1:100, 1 kg per 3 hectares.
5. On the day of planting soak seedlings in the solution of "FITOP-FLORA-S" for 2-3 hours at the rate of 100 ml of liquid concentrate per 10 liters of water.
6. It is advisable to treat the plants in the day of planting immediately with "FLORA-S" preparation which will reduce the load on the roots and increase the survival rate and new roots life period at the rate of 100 ml of liquid concentrate per 25 liters of water, 1 kg of dry preparation per 10 hectares.
7. Do not fertilize during two weeks after planting. After 2 weeks apply a working solution of "FLORA-S" with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water), at the rate of 1 kg of dry preparation per 3 ha by means of continuous spray.
8. After 2 weeks apply a working solution of "FITOP-FLORA-S" with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water) at the rate of 1 kg of dry preparation per 3 hectares by means of the continuous spray.

9. Next, 2 times a month before rows closing, perform foliar fertilizing with concentration of 1: 250 (100 gr. of liquid concentrate per 25 l of water) at the rate of 1 kg of dry substance per 6-7 hectares, alternating the preparations.
10. Once in 2 months apply "Flora-S" preparation at the rate of 1:100 (100 ml of liquid concentrate per 10 l of water), at the rate of 1 kg of dry substance per 3 hectares by the continuous spray or irrigation on irrigated land.
11. For 60-50 days before harvesting the last foliar application is carried out with "Flora-S" preparation at the rate of 2:250 (200 ml of liquid concentrate per 25 l of water), at the rate of 1 kg of dry substance per 3 hectares.
12. Perform post-harvest treatment with a working solution of "FITOP-FLORA-S" with a concentration of 1:100, the rate of 1 kg per 3 hectares.
13. If insecticide treatments were carried out, then after 1-2 days after the treatment apply "Flora-S" preparation with a concentration of 3:100 (300 ml of liquid concentrate per 10 liters of water), at the rate of 1 kg per 1 ha.

As a result 2,14 kg of "FLORA-S" and 1.7 kg of "FITOP-FLORA-S" are necessary for sugarcane for its vegetation year per 1 ha..

3.4 Recommendations for Application of "FLORA-S" and "FITOP-FLORA-S" for Cultivation of Vegetable Cultures

1. Apply in the soil the process solution of "FLORA-S" with the concentration 1:100 (100 ml of the liquid concentrate on 10 liters of water) in proportion of 1 kg of the preparation for 3 hectares.
2. After 3-5 days apply in the soil the process solution of "FITOP-FLORA-S" with the concentration 1:100 in proportion of 1 kg of the preparation on 3 hectares (if there is the causative agent of or hernia the dose should be increased to 5 kg per 1 hectare, depending on the degree of affection).
3. Processing of the seeds and seedlings with the process solution of "FLORA-S" with the concentration 1-2 tablespoons of liquid concentrate on 200 ml of water.
4. When the sprouts appear conduct the fertilizing with "Flora-S" with the concentration 1:100 in proportion of 1 kg to 3 hectares.
5. After 3-5 days conduct foliar fertilizing with the solution of "FITOP-FLORA-S" with the concentration 1:250 (100 ml of the liquid concentrate on 25 liters of water) in proportion of 1 kg per 10 hectares.
6. Foliar fertilizing after the beginning of flowering with the process solution of the preparation with the concentration 1:250 in proportion of 1 kg per 10 hectares. If there is no disease, then apply "FLORA-S"; if there is a disease – "FITOP-FLORA-S".
7. In the period of formation and ripening of the fruit conduct 2 (two) foliar fertilizing with the interval of 3-5 days. If there is no disease, then 1st fertilizing is carried out with "FLORA-S", 2nd - "FITOP-FLORA-S"; if there is a disease - both foliar fertilizing with "FITOP-FLORA-S". The concentration of PS 1:250 in proportion of 1 kg per 10 hectares.

8. Post-harvest processing of the soil with solution of "FITOP-FLORA-s" with the concentration 1:100 in proportion of 1 kg to 3 hectares.

9. If you used insecticide, then after 1-2 days conduct the fertilizing with "Flora-S" with the concentration 3:100 (300 ml of the liquid concentrate on 10 liters of water) in proportion of 1 kg per 1 hectare.

For fulfillment of this recommendations the punctuality and strict following of the instruction is required! We are ready to give any consultation on any questions and at any time.

3.5 Recommendations for "FLORA-S" and "FITOP-FLORA-S" Preparations Application for Bushes and Trees Cultivation

1. Prepare the soil for planting. One month before planting process the soil with working solution of "FLORA-S" with concentration of 1:100 (100 ml of liquid concentrate per 10 l of water) at the rate of 1 kg of the preparation per 3 hectares.

2. After 2 weeks process the soil with working solution of "FITOP-FLORA-S" with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water) at the rate of 1 kg of the preparation per 3 hectares.

3. Before planting the seedlings should be soaked in a solution of "FITOP-FLORA-S" at the rate of 100 ml of liquid concentrate per 10-15 l of water, or in case of preparing the clay mash use a working solution of the preparation "FITOP-FLORA-S" instead of water.

4. Apply 2 liters of the working solution of the preparation "FLORA-S" in each planting hole.

5. Do not feed during two weeks after planting, after 2 weeks, apply in the soil a working solution of "FLORA-S" with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water), the rate of 1 kg of the preparation per 3 ha.

6. After 2 weeks, apply in the soil a working solution of "FITOP-FLORA-S" with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water) at the rate of 1 kg of the preparation per 3 ha.

7. Further, once a month perform foliar fertilizing with a concentration of 1:250 (100 gr. of liquid concentrate per 25 l of water), at the rate of 1 kg of the preparations per 7 ha, alternating the preparations.

8. At the beginning of September apply in the soil "FITOP-FLORA-S" preparation with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water) at the rate of 1 kg of the drug per 3 ha.

9. In the spring of the following year the fertilizers are not applied into the soil, and, since mid-May, perform foliar fertilizing 1-2 times a month, alternating the preparations. Concentration of a working solution is 1:250.

Further application is carried out annually in the following way:

1. Early in the spring, as soon as there is an opportunity to get into the garden, the spray of the working solution of "Flora-S" preparation is carried out with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water) at the rate of 1 kg of the preparation per 3 hectares, in order that when the snow melts humic acid

could penetrate into the underlying layers of the soil with meltwater and begin work to restore the fertility of the soil from deeper layers.

2. With the onset of stable positive temperatures perform non-root treatment, fully spraying tree trunks, by means of “FITOP-FLORA-S” preparation with concentration of 1:250 (100 ml of liquid concentrate per 25 l of water) at the rate of 1 kg of the preparation per 5-7 hectares for protection against various pathogens wintering diseases.

3. At the time of formation of ovaries perform root fertilizing with a solution of “FLORA-S” preparation at the rate 2-3 liters per 1 bush.

4. In order to prevent various diseases once a month perform foliar treatment by means of “FITOP-FLORA-S” with a concentration of 100 ml of liquid concentrate per 25 l of water, at the rate of 1 kg of the preparation per 5-7 hectares.

5. In case of the first signs of diseases origin, perform the treatment with a working solution of “FITOP-FLORA-S” with a concentration of 200 ml of liquid concentrate per 10 l of water, the rate of 1 kg of the drug per 2-3 hectares.

6. The treatment is repeated at the same dosage next day.

7. After 3 days perform foliar treatment with normal concentration (100 ml per 25 l water at the rate of 1 kg per 7 ha).

8. At the beginning of September perform non-root treatment by means of “FITOP-FLORA-S” preparation with a concentration of 1:100 (100 ml of liquid concentrate per 10 l of water) at the rate of 1 kg per 3 hectares.

3.6 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application for Olive Plantations Cultivation

The use of “FLORA-S” and “FITOP-FLORA-S” preparations on the plantations of olive helps to neutralize toxins in the soil and falling on the plants outside, to increase fruit yield in quantitative and qualitative terms, to increase the oil content, as well as its quality, to protect plants from possible infection, enhance stress tolerance of plants both in summer and in winter, to get an environmentally friendly product that meets the highest international standards.

Fertilizers preparation for use

Before use, the concentrated solution is prepared as an aqueous emulsion. To make it a dry powder fertilizer is mixed with non-chlorinated warm water at the rate of 1:11 (1 kg dry substance per 11 liters of water). The liquid concentrate of “FLORA-S” preparation is ready to use within 24 hours, and “FITOP-FLORA-S” in 48-72 hours, during which time it must be stirred (shaken) 4-6 times. The powder is diluted with water at temperatures 37-42°C.

Direct application

1. With the advent of warm weather apply a working solution of “FLORA-S” into the soil at the rate of 0.6 kg of dry substance (6.6 liters of liquid concentrate) to 10 000 m².

2. After 7-10 days apply to the soil “FITOP FLORA-S” preparation at the rate of 0.6 kg of dry substance (6.6 liters of liquid concentrate) to 10 000 m². At the same time perform foliar treatment (spraying) with “FITOP-FLORA-S” of the whole plot and plants, wooden structures, which may be in the area and foreign trees and shrubs that can also be a carrier of the infection and allow the secondary infection by fungal diseases, if any.
3. Since the beginning of the first wave of growth of shoots perform root fertilizing with a solution of “FLORA-S” preparation at the rate of 0.3 kg of dry substance (3.3 liters of liquid concentrate) per 10 000 m².
4. 1-2 weeks before flowering perform foliar fertilizing with “FITOP-FLORA-S” preparation at the rate of 1 kg per 5 hectares (2.2 liters of liquid concentrate per 10 000 m²).
5. 2-3 weeks after flowering perform foliar fertilizing with “FITOP-FLORA-S” preparation at the rate of 1 kg per 5 hectares (2.2 liters of liquid concentrate per 10 000 m²).
6. At the time of fruit ripening perform root fertilizing with “Flora-S” preparation at the rate of 0.3 kg of dry substance (3.3 liters of liquid concentrate) per 10 000 m².
7. In order to prevent the possibility of rot on the fruit, in 2 weeks after root fertilizing with “FLORA-S” preparation, perform foliar fertilizing with “FITOP-FLORA-S” preparation at the rate of 1 kg per 5 hectares (2.2 liters of liquid concentrate per 10 000 m²).
8. After harvesting, apply a working solution of “FLORA-S” preparation in the soil at the rate of 0.6 kg of dry substance per 1 hectare (6.6 liters of liquid concentrate per 10 000 m²).

If a plant and soil diseases appear, it is necessary to move to treatment with “FITOP-FLORA-S” preparation by increasing the concentration by 3-5 times.

At the outbreak of disease, the treatment is carried out as follows:

Day 1 - treatment with “FITOP-FLORA-S” with concentration 5-7 times higher than normal, that is, if the root problem, then perform watering with the preparation at the rate of 10 liters of liquid concentrate per 10 000 m²: if there are problems with bacterial or fungal diseases, fruit rots, then perform spraying at the rate of 5.5-8 liters of liquid concentrate per 10 000 m².

Day 2 - treatment with “FITOP-FLORA-S” preparation with concentration 5-7 times higher than the norm using the previous scheme.

3-4-day - treatment is not performed

5-6-day - treatment of plants with usual dosage, i.e. if root problems – 5.5 liters of liquid concentrate per 10000 m²; for foliar treatments - 2.2 liters of liquid concentrate per 10 000 m².

Economic calculation is 10, 000 m².

Economic calculation per 10 000 m²

Period of application	Application rates of “FLORA-S”, kg/10000 m ²	Application rates of “FLORA-S”, kg/10000 m ²
Spring soil treatment	0.6	0.9
1st fertilizing	0.3	
2nd fertilizing		0.2
3rd fertilizing		0.2
2-3 weeks after flowering		0.2
Fruits ripening	0.3	
Soil treatment after harvest	0.6	
10% reserve (accounting soil and climatic conditions)	0.2	0.15
TOTAL	2.0 kg	1,65 kg

3.7 Fertilizing of Date-palms with “FLORA-S” and “FITOP-FLORA-S” Preparations

Fertilizer application

Liquid concentrate of the “FLORA-S” and “FITOP-FLORA-S” fertilizer is prepared by diluting of 1 part of dry powder in 11 parts of non-chlorinated water (1 kg in 11 liters of water). Liquid concentrate is ready for application in 24 hours, for this period of time the powder should be stirred 4-6 times because of high dispersion. Dilute the powder at temperature 40°C.

Fertilizer is applied in a liquid form by device, used for the application of mineral fertilizers, herbicides, pesticides; for this the prepared concentrate should be strained through a plastic or metal sieve, to avoid falling of solid particles into the mechanism.

The procedure of “FLORA-S” and “FITOP-FLORA-S” preparations application

Soil preparation: In the middle of March perform root fertilizing by a working solution of “FLORA-S” preparation with a concentration of 10 g of dry powder - 110 ml of liquid concentrate - 120-150 l of water under 1 tree.

In 10-14 days (end of March) perform root additional fertilizing by a working solution of “FITOP-FLORA-S” with the concentration of 10 g of dry powder - 120

ml of liquid concentrate - 120-150 l of water under a tree. Spring application of fertilizers will provide the full regeneration of roots and growth of the root system, the adsorption of aggressive substances.

Procedure of additional root fertilizing

1) At the beginning of April perform additional root fertilizing of trees by a working solution of "FLORA-S" with the concentration of 10 g of dry powder - 110 ml of liquid concentrate - 100-150 l of water per a tree.

2) In 10-14 days (end of April) perform additional root fertilizing of trees by a working solution of "FITOP-FLORA-S" with the concentration of 10 g of dry powder - 120 ml of liquid concentrate - 100-150 l of water per a tree.

3) In 10-14 days (middle of May) perform additional root fertilizing of trees by a working solution of "FLORA-S" with the concentration of 10 g of dry powder - 110 ml of liquid concentrate - 100-150 l of water per a tree.

4) In 10-14 days (end of May) perform additional root fertilizing of trees by a working solution of "FITOP-FLORA-S" with the concentration of 10 g of dry powder - 120 ml of liquid concentrate - 100-150 l of water per a tree.

5) In 10-14 days (middle of June) perform additional root fertilizing of trees by a working solution of "FLORA-S" with the concentration of 10 g of dry powder - 110 ml of liquid concentrate - 100-150 l of water per a tree.

6) In 10-14 days (end of June) perform additional root fertilizing by a working solution of "FITOP-FLORA-S" with the concentration of 10 g of dry powder - 120 ml of concentrate - 100- 150 l of water per a tree.

7) In 10-14 days (in the beginning of July) perform root fertilizing of trees by a working solution of "FLORA-S" with the concentration of 10 g of dry substance - 110 ml of liquid concentrate - 100-150 l of water per a tree.

8) In 10-14 days (end of July) perform additional root fertilizing of trees by a working solution of "FITOP-FLORA-S" with the concentration of 10 g of dry powder - 120 ml of liquid concentrate - 100-150 l of water per a tree.

9) In 10-14 days (middle of August) perform additional root fertilizing of trees by a working solution of "FLORA-S" with the concentration of 10 g of dry powder - 110 ml of liquid concentrate - 100-150 l of water per a tree.

10) In 10-14 days (end of August) perform additional root fertilizing of trees by a working solution of "FITOP-FLORA-S" with the concentration of 10 g of dry powder - 120 ml of liquid concentrate - 100-150 l of water per a tree.

11) In 10-14 days (in the middle of September) perform additional root fertilizing of trees by a working solution of "FLORA-S" with the concentration of 10 g of dry powder - 110 ml of liquid concentrate - 100-150 l of water per a tree.

12) In 10-14 days (end of September) perform additional root fertilizing of trees by a working solution of "FITOP-FLORA-S" with the concentration of 10 g of dry powder - 120 ml of liquid concentrate - 100-150 l of water per a tree.

In the beginning of October perform strengthened root fertilizing by "FLORA-S" preparation with a concentration of 20 g of dry powder - 220 ml of liquid concentrate - 100-150 l of water per a tree.

In 10-14 days (end of October) perform root fertilizing by "FITOP-FLORA-S" preparation with a concentration of 30 g of dry powder - 300 ml of liquid

concentrate - 150-300 l of water per a tree.

Then during the entire cooler season (November, December, January, February, beginning of March) perform additional root fertilizing once a month by “FLORA-S” and “FITOP-FLORA-S” by turns. The concentration: 5 g of dry powder - 55 ml of liquid concentrate - 100-150 l of water per a tree.

Note: If applied chemical means of protection of plants, then at the end of the main period of activity of chemical means in order to prevent the inhibitory effect of chemical means on plants you should perform additional root fertilizing by the PS of “FLORA-S” with the concentration of 10 g of dry powder - 100 ml concentrate - 150-300 l of process solution per a tree.

Total for a year for the processing of 1 tree (+ 20% reserve) you need “FLORA-S” - 100 g of dry substance, “FITOP-FLORA-S” - 110 g of dry substance.

Note: This method is intended for the soil with an average depletion, affection by diseases and acidulation. In case of strong affection of soil the concentration of “FLORA-S” and “FITOP-FLORA-S” should be increased.

On 1 hectare you can place 100-120 plants and therefore on 1 hectare you will need for adult bearing plantations 10 kg of “FLORA-S” preparation and 11 kg of “FITOP-FLORA-S” preparation.

That means you will need “FLORA-S” to the sum of 2500 Euro and “FITOP-FLORA-S” to the sum of 3135 Euro. Total sum is 5635 Euro for 1 hectare (10 000 square meters) when cultivating date-palms in infertile sandy soils.

In this case application of mineral fertilizers and chemical means of plant protection from diseases is excluded, and also the increase of stress immunity of plants and resistance to weevils occur. The increase of crop capacity in comparison with control by 20-40% and more occurs.

For fertile soils the consumption of the preparation is not more than 30% from this amount. That means that for more fertile soils the costs for 1 hectare are not more than 1800 Euro per year. These technologies allow obtaining of ecologically pure production.

3.8 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application when Grapes Growing

Fertilizers preparation for use

Before use a concentrated solution is prepared as an aqueous emulsion. To make it a dry powder fertilizer is mixed with non-chlorinated warm water in ratio 1:11 (1 kg dry substance per 11 liters of water). Liquid concentrate of "FLORA-S" preparation is ready to use after 24 hours, "FITOP-FLORA-S" preparation – after

48-72 hours, during which time it should be stirred (shaked up) for 4-6 times. Dilute the powder with water temperatures around 37-42°C.

Direct application

1. In the spring after the snow or with meltwater apply a working solution of “FLORA-S” into the soil at the rate of 0.5 kg of dry substance (5.5 liters of liquid concentrate) per 1 ha.

2. After 10-14 days apply “FITOP-FLORA-S” preparation in the soil at the rate of 0.5 kg of dry substance (5.5 liters of liquid concentrate) per 1 ha.

3. 10-14 days before flowering perform a foliar fertilizing by means of “FLORA-S” at the rate of 1 kg for 5 hectares (2.2 liters of liquid concentrate per 1 ha).

4. 3-4 weeks after flowering perform a foliar fertilizing by means of “FITOP-FLORA-S” at the rate of 1 kg per 5 hectares (2.2 liters of liquid concentrate per 1 ha).

5. At the time of bunches ripening perform a root fertilizing by means of “Flora-S” preparation at the rate of 0.5 kg of dry substance (5.5 liters of liquid concentrate) per 1 ha.

6. In order to prevent fungal diseases foliar preventive drug treatments are held throughout the season by “FITOP-FLORA-S” in dry weather 1 time in 14 days; 1 time every 3-5 days in case of a rainy wet weather at the rate of 1 kg of the preparation per 5 ha (2.2 liters of liquid concentrate per 1 ha).

7. In the autumn after the harvest apply a working solution of “FLORA-S” in the soil at the rate of 0.6 kg of dry substance per 1 hectare (6.6 liters of liquid concentrate per 1 ha).

If a plant or soil diseases appear, it is necessary to go to treatment by means of “FITOP-FLORA-S” preparation by increasing the concentration 3-5 times.

At the outbreak of disease, the treatment is carried out as follows:

Day 1 - treatment with “FITOP-FLORA-S” preparation with a concentration 3-5 times higher than normal, that is, if it is the root problem, so perform watering with the preparation at the rate of 10 liters of liquid concentrate per 1 ha; if there are problems with bacterial diseases, mildew, powdery mildew, rot, etc., perform the spraying with the 3-5 liters of liquid concentrate per 1 ha.

Day 2 - treatment with “FITOP-FLORA-S” preparation with a concentration 3-5 times higher than normal, , that is, if it is a the root problem, so perform watering with the preparation at the rate of 10 liters of liquid concentrate per 1 ha; if there are non-root diseases, so perform the spraying with the 3-5 liters of liquid concentrate per 1 ha.

Day 3-4 - treatment is not performed

Day 5-6 plant treatment with a conventional dosage, i.e. the root problems - 5.5 liters of liquid concentrate per 1 ha; for foliar treatments - 2.2 liters of liquid concentrate per 1 ha.

Economic Calculation

Variant 1

Source of preparation consumption	Application rates of "FLORA-S", kg/1 ha	Application rates of "FITOP-FLORA-S", kg/1 ha
Soil treatment	0.5	0.5
1st non-root treatment	0.2	
2nd non-root treatment		0.2
Root fertilizing	0.5	
Prophylactic treatments		8 X 0.2
After harvest treatment	0.6	
10% reserve	0.18	0.21
TOTAL	1.98	2.21

Variant 2 (if the weather is wet and rainy, or there are non-root diseases)

Source of preparation consumption	Application rates of "FLORA-S", kg/1 ha	Application rates of "FITOP-FLORA-S", kg/1 ha
Soil treatment	0.5	0.5
1st non-root treatment	0.2	
2nd non-root treatment		0.2
Root fertilizing	0,5	
Prophylactic treatments		8 X 0.2
1st treatment in case of infection		0.5
2nd treatment in case of infection		0.5
3rd treatment in case of infection		0.2
After harvest treatment	0.6	
10% reserve	0.18	0.33
TOTAL	1.98	3.53

Variant 3 (if the weather is wet and rainy, or there are root diseases)

Source of preparation consumption	Application rates of “FLORA-S”, kg/1 ha	Application rates of “FITOP-FLORA-S”, kg/1 ha
Soil treatment	0.5	0.5
1st non-root treatment	0.2	
2nd non-root treatment		0.2
Root fertilizing	0.5	
Prophylactic treatments		8 X 0.2
1st treatment in case of infection		1.0
2nd treatment in case of infection		1.0
3rd treatment in case of infection		0.5
After harvest treatment	0.6	
10% reserve	0.18	0.48
TOTAL	1.98	5.28

If the vineyard is laid only, since the fall it is necessary to prepare the soil for planting.

1. In the autumn before a planned landing in the soil apply a working solution of “FLORA-S” at the rate of 1 kg of dry substance per 1 hectare (11 liters of liquid concentrate per 1 ha).

2. In the spring after the establishment of a stable positive temperatures apply a working solution of “FITOP-FLORA-S” in the soil at the rate of 1 kg of dry substance per 1 hectare (11 liters of liquid concentrate per 1 ha).

3. On the day of planting apply in each planting hole 5 liters of working solution at the rate of 100 ml of liquid concentrate per 10 liters of water (5 to 10 kg of dry substance, depending on the grapes seating scheme).

4. After planting the plants are sprayed with “FITOP-FLORA-S” preparation at the rate of 1 kg of dry substance per 1 hectare (1.1 liters of liquid concentrate per 1 ha)

5. During the summer perform foliar treatments with “Flora-S” preparation at the rate of 1 kg of dry substance per 1 hectare (1.1 liters of liquid concentrate per 1 ha), 1 time every 14-28 days.

6. In wet cool weather the treatments are held with “FITOP-FLORA-S” preparation in the same concentration as of “FLORA-S”, that is 1.1 liters of liquid concentrate per 1 ha.

Economic Calculation

Source of preparation consumption	Application rates of “FLORA-S”, kg/1 ha	Application rates of “FITOP-FLORA-S”, kg/1 ha
Autumn soil treatment	1.0	
Spring application before planting		1.0
Application at the time of planting	5.0	
Treatment after planting		1.0
Prophylactic treatments		8 X 0.1
10% reserve	0.6	0.28
TOTAL	6.6	3.08

3.9 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application When Amaranth Cultivation

The application of these fertilizers provides:

- Improving soil fertility, an increase in the percentage of humus;
- Increasing the yield by 20-30%;
- Improving the nutritional value of grass and seeds (increase in the content of protein, vitamins, amino acids, lysine, oil);
- An increase in the number of soil bacteria of Azotobacter, Fosfobacter species.

Application Technology

Preparation of fertilizers for use.

Before use, prepare a concentrated solution as an aqueous emulsion. To prepare it a dry powder fertilizer is mixed with non-chlorinated warm water in ratio 1:11 (1 kg of dry substance per 11 liters of water). The liquid concentrate of “FLORA-S” preparation is ready for use after 24 hours, “FITOP-FLORA-S” preparation - in 48-72 hours, during which time it must be stirred (shaken) 4-6 times. Dilute the powder with water temperatures about 40°C.

Direct application.

1. In the spring before harrowing or cultivation apply a tank mix in the soil consisting of a working solution of “FLORA-S” at the rate of 0.66 kg of dry substance (6.6 liters of liquid concentrate) and “FITOP-FLORA-S” at the rate of 0.33 kg of dry substance (3.3 liters of liquid concentrate) per 1 ha. It is applied by spraying followed by embedding or before the rain.

2. Treat (spray) the seeds before sowing with a working solution of “FLORA-S” with a concentration of 330 ml of liquid concentrate (30 g of dry substance) per 10 liters of water per 1 ton of seeds if the seeds were treated with pesticides. If seeds have not been treated, then treat with a solution of “FITOP-FLORA-S” preparation in the same proportion as that of “FLORA-S”.

3. The first fertilizing is carried out with the appearance of 2-3 true leaves with a working solution of “FLORA-S” at the rate of 0.3 kg of dry substance (3.3 liters of liquid concentrate) per 1 ha. It is desirable to apply before rain or with a large volume of water for the solution not to leave on the soil surface, but penetrate to the depth of the system

4. After two weeks, apply fertilizing with a working solution of “FITOP-FLORA-S” at the rate of 0.2 kg of dry substance (2.2 liters of liquid concentrate) per 1 ha.

5. In the budding phase apply fertilizing with a working solution of “FLORA-S” at the rate of 0.2 kg of dry substance (2.2 liters of liquid concentrate) per 1 ha.

6. In the case of leaf-eating pests’ origin 3-5 days after processing from them, treat with “FLORA-S” at the rate of 0.3 kg of dry substance (3.3 liters of liquid concentrate) per 1 hectare in order to decompose the remaining toxins in the plant to safe constituents and get environmentally friendly products as a result.

Note: these fertilizers did not harm bees, as they organic, and “FITOP-FLORA-S” contains monobacterium strain that is used in veterinary medicine to feed the bees.

7. After the mass flowering perform fertilizing with a working solution of “FLORA-S” at the rate of 0.14 kg of dry substance (1.54 liters of liquid concentrate) per 1 ha.

8. After harvesting apply a tank mixture of working solution of “FITOP-FLORA-S” into the soil at the rate of 0.33 kg of dry substance (3.5 liters of liquid concentrate) and “FLORA-S” at the rate of 0.33 kg of dry substance (3.5 liters of liquid concentrate) per 1 ha.

Economic calculation per 10 000 sq. m.

Period of application	Application rates of “FLORA-S”, kg/10 000 m ²	Application rates of “FITOP-FLORA-S”, kg/10 000 m ²
Spring soil treatment	0.66	0.33
Seeds treatment	0.003	0.003
1st fertilizing	0.3	
2nd fertilizing		0.2
Fertilizing in budding phase	0.2	
Non-root fertilizing after treatment with chemicals	0.3	
Fertilizing after flowering	0.14	
Soil treatment after harvesting	0.33	0.33
10% reserve (accounting soil climatic conditions)	0.22	0.09
TOTAL	2.4 kg	1.0 kg

3.10 Recommendations for “FLORA-S” and “FITOP-FLORA-S” Preparations Application for Landscape Gardening

Cityscape always bears traces of anthropogenic load, and therefore, in contrast to the natural landscape, plants in cities are constantly in stressful conditions of existence. It is especially difficult to plants in a metropolis where enormous amount of exhaust gas, and in the cold season there is a constant use of chemical reagents that fall on the lawn, to the roots of trees and bushes; so that the plants loose their ornamentality, plantations durability, and sometimes a complete destruction of the plants occurs. Often this is the limiting factor in the expansion of the range of plants used in landscaping cities. We have to stop the choice on the most stress-resistant plants and fill flower beds with one-year flowers.

The use of mineral fertilizers in recreational areas gives a side effect, an adverse effect on human health, as after a rain or watering the air is filled with nitrogen vapor released from the solution of mineral fertilizers. This is especially harmful to the sports grounds, playing fields, stadiums with grass.

We suggest considering solutions to these and many other problems of urban landscaping in using environmentally friendly products “FLORA-S” and “FITOP-FLORA-S”, which allow making miracles both in the soil and with plants within the shortest time.

“FLORA-S” represents a unique highly concentrated mixture of humic acids (not humates). On its basis “FITOP-FLORA-S” has been developed, which contains a natural strains of the bacterium *Bacillus subtilis* (strain VKPM B-7048) which inhibits the pathogenic microflora in the soil and on plants.

Preparations are included in the State Register of the Russian Federation (№1150-08-210-297-0-0-1, № 1179-08-210-293-0-0-1), registered and approved for use in the Russian Federation and several foreign countries. Their ecological purity and safety is confirmed by the environmental certificate ROSS RU: SSK / 044/1158, as well as the international certificate ISO 14001: 2004 and 9001: 2008 EvroAzEko. In 2012 the title “Leader of High Technology in the Field of Health and the Environment” was received from the Administration of the President of the Russian Federation. For good results when tested “FLORA-S” and “FITOP-FLORA-S” preparations were awarded to a variety of Russian and foreign awards.

“FLORA-S” and “FITOP-FLORA-S” preparations found acceptance and approval of the producers of agricultural products, farmers and amateur gardeners. Peat-humic fertilizers have no analogues in Russia and abroad, they are protected by RF patent.

In 2012, several European countries have carried out experiments on the use of “FLORA-S” and “FITOP-FLORAS” preparations on the most important crops. Even though a terrible drought, the preparations have proven themselves as highly efficient, and environmentally friendly.

The application of “FLORA-S” and “FITOP-FLORA-S” preparations allows to:

- Increase the level of air purification;
- Neutralize harmful substances;
- Increase the survival rate of trees and shrubs when transplanting;
- Strengthen the leaves on the trees;
- Extend the period of vegetation, give the color fastness of trees, shrubs, lawn grass;
- Increase the plant immunity to disease; resistance to gas contamination of urban air and toxic substances to adverse weather events (drought, frost);
- To improve the aesthetic quality of the urban landscape;
- To improve and accelerate the process of roll-up lawn acclimation;
- Increase the sod on the lawn, and therefore increase resistance to trampling;
- Restore soil structure and improve soil fertility, reduce the negative balance of humus;
- Improve the water-physical and physical-chemical properties of the soil;
- Reduce acidification, carbonate content and soil salinity;
- Translate the heavy metals in the inert inaccessible for plants form, increasing thereby the environmental properties of the soil;
- Reduce the level of radiation;
- Quickly and effectively decompose toxic and other harmful and environmentally hazardous substances;
- Neutralize the effects of oil spills;
- Neutralize the inhibitory effect of chemicals on the plants;

- Increase the stress resistance of plants, including high temperatures, drought, exhaust gases, etc.
- Protect the plants from a complex of basic diseases (black leg, present, and downy mildew, phomosis, late blight, fusarium, scab, anthracnose, different kinds of rot, etc.);
- Reduce the sanitary-epidemiological situation in places of people and animals mass stay, especially in the coastal zone of urban water bodies;
- Stimulate spawning in natural and artificial reservoirs;
- Increase the viability of eggs fry and adult fish in reservoirs;
- Strengthen the shoreline of water bodies.

“FLORA-S” and “FITOP-FLORA-S” preparations are effectively used for the creation of football, and other playing fields. They accelerate the interaction of turf with the mother layer, turf acclimation rate, contribute to the increase of the root system. The preparations can be used for growing of roll-up lawn.

The company provides complete author’s support. Application methods in different conditions have been developed for each group of plants. Upon request we will send recommendations and model calculations. We also perform individual calculations in case of necessity. The preparations are applied with watering or spraying by means of standard sprayers or through watering device, and eliminate the other types of fertilizers and chemical means of protection from disease. The preparations are harmless to humans and the environment. They do not require personal protective equipment.

3.11 Application of “Flora-S” and “FITOP-FLORA-S” Preparations for the Cultivation of Roses

1. The soil preparation for planting. 1 month before planting the cuttings process the soil with a working solution of “FLORA-S” with a concentration 1:100 (100 g of the liquid concentrate per 10 l of not chlorinated water), 1 kg of the preparation per 3 ha.
2. In two weeks apply a working solution of “FITOP-FLORA-S” in the soil with the concentration 1:100 (100 g of the liquid concentrate per 10 l of not chlorinated water).
3. The planting is performed in 2 weeks by means of obligatory shading of the cuttings.
4. Two weeks after planting do not add the fertilizers. In two weeks apply a working solution of “FLORA-S” in the soil with a concentration 1:100 (100 g of the liquid concentrate per 10 l of not chlorinated water).
5. In two weeks apply a working solution of “FITOP-FLORA-S” in the soil with a concentration 1:100 (100 g of the liquid concentrate per 10 l of not chlorinated water).
6. Later 1 time a month perform the foliar fertilizing with a concentration 1:250 (100 g of the liquid concentration per 25 l of not chlorinated water), interchanging the preparations.

7. At the beginning of September apply “FITOP-FLORA-S” in the soil with a concentration 1:100 (100 g of the liquid concentrate per 10 l of not chlorinated water).

8. In spring next year, **don’t apply** the fertilizers in the soil, but from the middle of May, perform the foliar fertilizing 1-2 times a month, interchanging the preparations. The concentration of the process solution is 1:250 (100 g of the liquid concentrate per 25 l of not chlorinated water).

4. APPLICATION OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS FOR THE CULTIVATION OF HOUSE PLANTS

The cultivation of house plants refers to the pastime which demands definite efforts. Transplantation connected with the preparation of the necessary soil mixture, spraying and watering, ventilation, and shading is only a part of work with the house plants.

The right selection of the soil mixture for the house plants is a very important problem, because the texture of the soil affects the root development and consequently the whole plant. If to approach theoretically, every sort of plants needs a special soil, but it is not always possible in practice.

Nowadays many shops offer prepared soil mixtures for different groups of house plants and crops.

Purchase of the prepared mixture does not guarantee its high quality yet. In low-price mixtures there are seeds of weeds sometimes, it means that the soil did not go through the heat treatment; the risk of bringing in infection is rather high. In expensive mixtures microbial composition also leaves much to be desired.

Besides at wrong heat treatment of rich in organic compositions form growth-inhibiting substances. The heat treatment is conducted at the temperature of 100°C as a result of it there occurs the decay of humic acids but complete destruction of pathogenic microflora doesn’t occur. Sometimes you have to try soil mixtures of several producers for choosing a sufficient safe and balanced, available for your plants.

Experienced flower growers know; the soil mixture you prepare yourself is better than the prepared packaged soil.

The soil for plants must be structural, water-permeable and nutrient.

You may start the preparation of such a soil in your garden.

For this purpose, you need to allocate the area measuring two square meters. When positive daily average temperature sets and the ground warms up to +5°C degree centigrade:

- loosen the ground with a pitchfork or dig it over not deeply;

- apply the process solution of “FLORA-S” in the soil, using the method of light humidification, with the concentration 200 ml of a liquid concentrate for 10 l of not chlorinated water, 10 l of the process solution for 2 square meters (depends on the state and type of the soil);

- in two weeks apply the process solution of “FITOP-FLORA-S” in the soil, using the same method, with the concentration 200 ml of the liquid concentrate for 10 l of not chlorinated water, 10 l of the process solution for 2 square meters;

- later the area applied with the preparations is weeded and loosened periodically.

Note. Carry out such treatments all the summer, the interval between the applications of the process solution of “FLORA-S” and “FITOP-FLORA-S” is 14 days. It is necessary to interchange the preparations. It will be better to apply the fertilizers when light rain is going to begin (downpour can wash everything out).

At the end of August – the beginning of September you may gather the soil from this area for flowers.

Such a soil will have good nutritional properties, optimum physicochemical and microbiological composition for growth and development of the plants.

Note. In order the earthworms couldn't get in the prepared soil, it needs to be sifted through a hair sieve (in pots earthworms begin to eat the root system of the plant, when other food is absent).

The ideal variant – meadow soil or the soil taken under the birch (this soil is healthier). If you prepare such a soil, at least 1 month before replantation of the flowers in it, treat the soil with the process solution of “FLORA-S” with the concentration 100 ml of the liquid concentrate per 10 l of not chlorinated water, 100 ml of the process solution per 10 l of the soil. In two weeks treat the soil by the process solution of “FITOP-FLORA-S” with the same concentration. Not less than 14 days must pass before transplanting of the plants. This variant suits any prepared soil, which was not prepared with DPFH “FLORA-S” and “FITOP-FLORA-S”.

As every kind of plants needs a definite composition of the soil, you may add sand, sod soil, peat, loam, coniferous, wood soil, etc. in the soil prepared with “FLORA-S” and “FITOP-FLORA-S” preparations.

For example, in order to receive a cloddy structure (such a soil lets air and water to the plant roots), people apply sod soil, peat in light soils. And vice versa, you can add coarse-grained sand in heavy soils. A good aerator-fluffer for heavy soils is sawdust, especially rotten and redwood bark.

All the elements of the soil mixture must be dry. Mix them intimately. If there are clots in the mixture, sift it through a hair sieve with 0, 5 cm mesh size.

The limited volume of the soil in pots leads to the rapid exhaustion of the soil. Therefore, for the plants to grow normally and gladden your eye, it is necessary to apply “FLORA-S” and “FITOP-FLORA-S” during the period of its active vegetation.

Fertilizing must be started from the middle of February and ended in the second half of August.

Root fertilizing: from the beginning of the active period of vegetation, apply the process solution of “FLORA-S” in the soil, using the method of light humidification, with the concentration 1 table spoon of the LC for 1 liter of boiled water.

In two weeks apply the process solution of “FITOP-FLORA-S” in the soil, using the same method, with the concentration 1 table spoon of the LC for 1 liter of boiled water.

Later, make root fertilizing 1 time per 30-45 days, interchanging the

preparations.

Foliar fertilizing: sprinkle the plants with the process solution with the concentration 1 tea spoon of the liquid concentrate for 1 liter of water. Make foliar fertilizing 1 time per 15 days, interchanging the preparations.

Note. If it is cold and damp in the room, conduct rare root fertilizing with the process solution of “FITOP-FLORA-S” mainly (disease prevention).

The quantity of fertilizing is necessary to establish for every kind of plant individually, on basis of the features of the plant exactingness to the soil fertility, moisture quantity, etc.

If necessary, you may apply a trace of mineral fertilizers. And take into account that the humic acids in the composition of “FLORA-S” and “FITOP-FLORA-S” preparations transfer all mineral elements in the soil into the available for the plants form. Therefore, mineral elements consumption needs to be reduced 3-4 times using “FLORA-S” and “FITOP-FLORA-S” preparations, otherwise it is possible to oversaturate the vegetable organism by chemistry, and as a result – it dies or fades.

Note. For plants, which require high acidity of soil, such as hydrangea, gardenia and some other, it is necessary to reduce the amount of applying of “FLORA-S” preparation in the soil and leave only foliar fertilizing of these plants. When necessary on the contrary apply in the soil a light solution of hydrochloric acid.

5. APPLICATION OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS AFTER COLLECTING OF THE CROP

In autumn after collecting of the crop apply in the wet soil by means of moderate moistening the PS of “FLORA-S” – 200 ml of the liquid concentrate per 10 l of water in proportion of 10 l of a working solution per 20-24 m².

Loosen the soil with pitchfork or perform not deep digging in order to avoid the disturbance of the soil structure, biochemical and microbiological composition, etc.

6. APPLICATION OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS IN THE HOTHOUSE

The main problem of all the hothouse farms is the active development of the pathogenic rotten microflora.

Actively developing in the soil in the process of condensation it goes up on the hothouse constructions. When the hothouse moistens the stream of bacteria rushes down and affects the plants and soil.

Application of “FLORA-S” and “FITOP-FLORA-S” preparations allows solve the problem of the restoration and functioning of the hothouse farms and also exclude the necessity of substitution and thermal processing of the soil in the hothouse, achieve the increase of the crop capacity by 20-40%, decrease the consumption of the mineral fertilizers by 85-90%, exclude the application of manure and other organic and organic-mineral fertilizers, the consequence of which will be

the obtainment of the ecologically pure production with high flavor properties and nutrient value.

Prepare the liquid concentrate of “FITOP-FLORA-S” for internal surface of the hot house by means of dilution of 10 g of fertilizer in 110-120 ml or 0.5 glass of boiled water. The LC of “FITOP-FLORA-S” is ready for application in 48-72 hours, during this time the powder should be stirred 4-6 times. The powder should be diluted at the temperature of water 40-42C. Then this LC should be diluted in 3 liters of not chlorinated water for receiving of process solution. The received PS apply on 150 m² of the processed area of hothouse by means of spraying.

For the processing of internal surface of hothouse with the area of 30 m² you will need 6 packages of “FITOP-FLORA-S” 10 g each:

- 2 packages – for soil processing,
- 2 packages (max) – for internal processing of constructions,
- 2 packages – for foliar fertilizing of plants
- And 2 packages of “FLORA-S” 30 g each.

In 7-10 days repeat the processing. Special attention should be paid to the processing of junctions of constructions of hothouse, junctions of glasses and film.

The order of application of “FLORA-S” and “FITOP-FLORA-S” preparations in temporary and stationary hothouses:

1. Apply in the soil by means of light moistening the process solution of “FLORA-S” – 100 ml of the liquid concentrate for 10 l of not chlorinated water in proportion of 10 l for 24-33 m².

2. At the same time process the inside surface of the hothouse with the process solution of “FITOP-FLORA-S” by means of spraying because there is a big gathering of rotten pathogenic microflora in proportion of 3 l of the process solution for 150 m²; in 10-14 days repeat the processing of the construction with “FITOP-FLORA-S”.

3. In 7-10 days apply in the soil the PS of “FITOP-FLORA-S” – 100 ml of the liquid concentrate for 10 l of not chlorinated water in proportion of 10 l of the process solution for 25-50 m². Special attention should be paid to the processing of soil near walls, with the width of 55-75cm, where there is the accumulation of pathogenic microflora, which gets from the walls of hothouse.

4. Loosen the ground with a pitchfork or dig not too deep.

5. Plant the seedling in 7-10 days after applying “FITOP-FLORA-S” in the soil.

6. If the hothouse moistens it is necessary to dry it and apply this preparation according to the mentioned above method with the simultaneous conduct of foliar fertilizing of plants by the preparation “FITOP-FLORA-S”.

7. In two weeks after planting the seedling in the hothouse conduct root fertilizing with the PS “FLORA-S” – 100 ml of the liquid concentrate for 10 l of not chlorinated water in proportion of 10 l for 24-33 m² with the simultaneous foliar fertilizing with the PS of “FITOP-FLORA-S” – 100 ml of the liquid concentrate for 25 l of not chlorinated water.

8. Conduct fertilizing one time in 7-10 days interchanging the preparations in such a way that for one turn in the hothouse there will be 3 foliar fertilizing with “FLORA-S” and 4 foliar fertilizing with “FITOP-FLORA-S”.

Note. Foliar fertilizing should be conducted early in the morning or evening provided that till night the leaves of the processed plants will manage to dry. In cloudy weather you can conduct fertilizing at any time. You should long for the preparations to get to the lower surface of the leaf. When there are signs of diseases on the plants and in the soil you should move to the processing with “FITOP-FLORA-S”, meanwhile the concentration of the PS should be increased to 100 ml of the liquid concentrate (LC) for 10 l of not chlorinated water.

In case of delay of conducting measures for the soil preparation in the hothouse it is necessary:

1. To conduct root fertilizing of the plants with the PS of “FLORA-S” – 100 ml of the LC for 10 l of not chlorinated water in proportion of 5 l of the solution for 12-17 sq.m.

2. Simultaneously conduct the fertilizing of plants with the PS of “FITOP-FLORA-S” - 100 ml of the LC for 25 l of not chlorinated water in proportion of 10 l of the solution for 50-90 sq.m. Repeat 1 time in 10-14 days.

3. Simultaneously with the first fertilizing conduct the processing of the inside surface of the hothouse with the PS of “FITOP-FLORA-S” in proportion of 3 l of the PS for 150 m².

4. In 7-10 days repeat the root fertilizing with the PS of “FITOP-FLORA-S” - 100 ml of the LC for 10 l of not chlorinated water in proportion of 5 l of the PS for 13-20 sq.m.

We recommend not to use chlorinated water when working with our preparations because it leads to the breakdown of the humic acids and the destruction of bacterium spore.

7. THE APPLICATION OF “FITOP-FLORA-S” PREPARATION FOR THE PROCESSING OF CELLARS , STOREHOUSES AND PRODUCTION LAID FOR LONG-TERM STORAGE

Who of us, gardeners, in spring didn't face the problem, when you have to throw away from the storehouse or cellar products of last year's harvest, spoiled and unfit for consumption? And the reason is the same: the active development of the pathogenic, putrefactive microflora. The practice of application of “FITOP-FLORA-S” has proved that this problem can be solved successfully.

Before processing the cellar you need to open and dry it. Its inner surface, as well as equipment used for storage should be processed by the preparation “FITOP - FLORA-S”. 100 ml of the LC of “FITOP-FLORA-S” should be dissolved in 3 l of not chlorinated water. Apply 3 l of received PS on 150 m² by the method of spraying. Processing is carried out 2 times with an interval of 10-14 days. In 14 days after the 2nd processing the products can be laid for storage. Before that the products laid for storage is put in one layer and sprayed through the sprayer by the preparation “FITOP-FLORA-S” from the calculation of 3 l of the PS on 0,5-0,7 m³ of products.

Processing of the inner surface of the cellar, and storehouse (walls, ceiling, floor, etc.) and equipment, as well as products before laying for storage by the preparation

“FITOP-FLORA-S” allows you to destroy putrefactive microflora, and therefore, to create favorable conditions for long-term qualitative storage of Your harvest.

Therefore, our motto remains the same:

We care about You, Your health, prosperity and welfare.

8. EXAMINATIONS CONDUCTED ON THE TERRITORY OF ALTAI REGION AND OTHER REGIONS OF THE RUSSIAN FEDERATION SHOWED HIGH PERFORMANCE OF “FLORA-S” AND “FITOP-FLORA-S” PREPARATIONS

Laboratory examinations made in different countries confirmed all the characteristics of “FLORA-S” and “FITOP-FLORA-S” preparations.

“FLORA-S” and “FITOP-FLORA-S” preparations showed their universality when were applied in extreme situations (during the restoration of the fertile layer of the soil after fires, floods, descent of mud torrents within 8-12 months at the expense of acceleration of biochemical and microbiological processes in the soil. Average consumption of peat-humic fertilizers – 2-4 kg for 1 hectare. If to apply the same amount of the preparations for the second time the terms of restoration decrease to 3-6 months). In the regions of ecological disasters, they decrease sanitary-epidemiological tension. For this purpose, the preparations can be used for disinfection of your city, dumps, animal waste, holding of prophylactic measures in animal complexes.

1. The application of the fertilizers “FLORA-S” and “FITOP-FLORA-S” improves the soil and its structure. Good results can be achieved in the soils even with the low content of nutritive substances: sandy, sabulous, clay, sod-podzol, forest, etc. and also oily soils. In the state farm “Biya” (Biysk project-prospecting station of agrochemservice) as a result of the application of “FLORA-S” and “FITOP-FLORA-S” we could observe the increase of humus amount in the soil in comparison with spring by 17%.

2. The examinations of the application of “FLORA-S” and “FITOP-FLORA-S” preparations on oily grounds (Nizhnevartovsk) showed that the application of these preparations allows to restore the fertile layer of the soil after oil flood in short terms (less than a year), increase the seed germination in the oily soils, decrease the terms of sprouting and increase the air-dry mass of the plants more than 10 times.

3. There was developed a method of cessation of the sand movement by means of creating of the humus horizon (the humic acids convert the interoozy compounds situated in the sand from the biologically passive form into the active one, as the humic acids perform like the catalysts for these interoozy compounds). The process of forming the fertile level of the soil takes 12-24 months and in the conditions of dry farming – 24-36 months. As a result, the grass lawn and landscape design on the sandy soil is created (the time of creation of the steady grass lawn in 12-24 months from the moment of forming the humic horizon).

4. The new method of sugar beet cultivation from seeds (suitable for Siberia conditions). The sowing area is decreased, the crop capacity is increased 3 times, sugar content, steadiness to root rot, crop safety is provided by 85-90%, the necessity in root storehouses is decreased 3-4 times, transport charges for shipment

of stecklings is decreased N times. Crop and the seed quality received from stecklings is higher than from general roots.

5. The examinations carried out on the soils of Uzbekistan showed complete decomposition of pesticides, the decrease of the radiation background.

6. The application of “FLORA-S” and “FITOP-FLORA-S” for improvement of the ecological conditions in Kuznetsk Basin showed:

- the increase of productivity and survival rate of the plants in the course of biological reclamation of anthropogenic landscapes;
- the decrease of the radiation background, the destruction of the pathogenic microflora and transfer of heavy metals from the biologically active form into the inert one in agrolandscapes and the closed ground of the hothouse sector;
- the improvement of the ecological conditions in the region of the city dumps near the center of population;
- the restoration of the forest soil fertility and peat swamps after fires.

7. In conditions of the Extreme North the effect of the preparations “FLORA-S” and “FITOP-FLORA-S” leads to:

- the improvement of the soil structure and buffer soil properties;
- the increase of the root system by 25-30%;
- the increase of the immune system and prevention of plant diseases;
- the increase of the crop capacity by 25-30%;
- the increase of steadiness to adverse weather conditions;
- the increase of plant establishment.

When creating lawns, parks, planting trees, bushes in conditions of the Extreme North the degree of establishment is 100%, the average index of establishment in the region without processing with the preparations is 80%. The effect of the preparations on grass is like a growth stimulator for plants, and influenced the increase of the root system of the plants 1.8-2.8 times.

8. The increase of the crop capacity in field tests is the following: spring wheat – 15-25%, carrot – 25%, fodder beet – 25%, maize – 20-40%, early cabbage – 29-35%, table beet – 35%, cotton – 8-13%, tomatoes in the closed ground – to 40%, radish – 30%, soya – 20-27%.

9. We developed the technology of apiary processing (hives, places for housing bees in winter, storehouses) and adjoining territories. The application of fertilizers favors the increase of the bees’ immune system, keeping of sorts and empty honeycombs from rot and mould. The processing of storehouses and hives suppresses and prevents from the pathogenic rotten microflora and the processing of the adjoining territories allows the cultivation of the ecologically pure plants, from which you will collect ecologically pure product.

All the mentioned above and other methods and technologies have theoretical and practical confirmation of the Universities and other organizations specialized in these questions.

Before using the preparations “FLORA-S” and “FITOP-FLORA-S” carefully study the instruction for application and follow it, only in this case you will be able to receive abundant and healthy crop.

We offer cooperation on mutually beneficial terms for companies of the Russian Federation, the near and far abroad. There are special prices for the wholesalers and enterprises who work commercially. In perspective there is a creation of other high-performance preparations. We invite people for cooperation and we are ready to provide all the necessary materials.

9. ABOUT COLLABORATION

Currently, we provide such a kind of service as delivery of fertilizers through the postal network by payment forward. For this purpose, it is enough to send us a postcard showing the exact reverse address or order the preparations on the phone: 8 (3854) 32-93-21. Postal costs are paid by the buyer.

For the firms of the Russian Federation, Near and Far Abroad we offer to improve cooperation on mutually beneficial conditions. For wholesalers and the enterprises working in industrial scale, there is a flexible system of discounts. Company “BIO-BAN” provides full author's support on the issues of “FLORA-S” and “FITOP-FLORA-S” preparations. We plan to create other efficient ecologically pure preparations.

We hope that in our brochure you've found useful information for yourself and now you will be able to competently orientate yourself on the market of offered for you means.

Our contacts:

12 Pochtoviy Lane, Biysk, Altai region, 659300, Russia

Tel/fax: (+73854) 329321

e-mail: bio-ban@yandex.ru, bio-ban@bk.ru

bioban2@gmail.com

<http://www.bio-ban.com>



**A large and straight carrot
(Altai Territory)**



**A rich harvest in Siberia.
Watermelons are especially
pleased**



**Smooth and healthy
fruits of cherry tomatoes
(Altai Territory)**



**A great harvest of
corn and sugar beet
in drought conditions (Serbia)**



**Wheat: increase in yield
over 7.0 tons per hectare**



**Oats: germination
energy has been increased
by 10.9%, productive tillering
is 2 times higher.**



Garlic: the absence of diseases (Barnaul city)



Pepper and cauliflower: yield and fruit weight increase



Pumpkin, Omsk city



Smooth and healthy potato tubers



Black currant: the absence of disease, and yield increase (Irkutsk city)



Red currant: abundant fruiting, and uniform ripening (Irkutsk region)



Cabbage:
victory over slimy bacteriosis



Potato plants:
assistance in the fight against
Colorado potato beetle
(Novosibirsk city)



Greenhouse:
cucumbers and tomatoes
in one greenhouse



Tomatoes:
increasing the amount
and weight of fruits.
Absence of diseases (Biysk city)



Roses: abundant flowering
and the absence of
diseases in the country house,
Moscow area



Felt cherry:
large berries and abundant fruiting
(Irkutsk city)



***Lawn for five days
(Megion city)***



***Cedar:
fertile cedar in 5-6 years***



***Life revival on the dead ash dumps of a metallurgical plant.
At the beginning of autumn the plants gave a good seed crop.
Subsequently the area treated has retained its vitality,
forming a full-grown layer of fertile soil***