

THE RUSSIAN ACADEMY OF AGRICULTURAL SCIENCES
State Scientific Institution
The All-Russian Agrochemistry Research Institute
named after D.N. Pryanishnikov (SSI ARARI)

Approve:

Head of SSI ARARI

/signature/ Sychev V.G.

“4” December 2008

The All-Russian Agrochemistry Research Institute named after D.N. Pryanishnikov
official seal affixed.

EXPERT'S REPORT

in relation to the materials submitted by OOO «Plant»
concerning the establishment of biological effectiveness of the agrochemical
“Fertilizer based on humic aids
with microelements «Bioplant Flora»

Moscow 2008

1.Name of agrochemical (Trade Name).

Fertilizer based on humic acids with microelements «Bioplant flora».

2. Applicant (name, legal address, telephone, fax).

OOO «Plant», 142100, Moscow region, city of Podolsk, 57 Fevral'skaya Str., phone (496) 920-05-16, phone/fax (4967) 58-02-51, E-mail: rmh@list.ru

3. Manufacturer (name, legal address, telephone, fax).

OOO «Plant», 142100, Moscow Region, city of Podolsk, 57 Fevral'skaya Str., phone (496) 920-05-16, phone/fax (4967) 58-02-51, E-mail: rmh@list.ru

4. The purpose of biological examination (state registration, re-registration, application expansion).

State registration.

In "The State Catalogue of Pesticides and Agrochemicals approved to be used at the territory of the Russian Federation" the agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»*, made by OOO «Plant» is not registered.

5.The documentation submitted for the agrochemical.

- Information about the agrochemical;
- TU 9899-009-75292641-2008;
- Technological regulation of the manufacture of the *Fertilizer based on humic acids with microelements «Bioplant flora»*;
- Instructions on using;
- Package label;
- Agrochemical safety passport;
- Test certificate № 35u as of 09 October 2008. (Testing Laboratory Centre, Independent Institute of Assessment and Certification, Certificate of accreditation for Technical Competence and Independence №ROSS RU.0001.513042);
- Test certificate № 17 as of 10 April 2008. (Testing Centre of Food, Food Staples, Forage, Soils, Ground, Agrochemicals and Water SCAS «Moskovsky», Certificate of Accreditation №ROSS RU. 0001.21PT50);
- Test certificate № 56 as of 01 October 2007. (Testing Laboratory Centre, Independent Institute of Assessment and Certification, Certificate of Accreditation for Technical Competence and Independence №ROSS RU.0001.513042);
- Expert's report SFES RCT&HRB (State Federal Enterprise for Science "The Research Centre for Toxicology and Hygienic Regulation of Biopreparations") by the results of toxicological-hygienic assessment of agrochemical as of 03 December 2008.

6. Agrochemical Description.

Fertilizer based on humic acids, made by way of water dissolution of compost on the basis of cattle manure and by way of enrichment of the solution received with microelements.

Raw materials for agrochemical production:

- compost, according to TU 9899-007-75292641-2005;
- manganese sulphate, according to GOST 435-77, according to TU 6-09-07-1724-91, according to TU 6-18-60-87 or according to TU 6-09-1724-91)
- magnesium sulphate, according to TU 2141-073-00206457-2006
- zinc sulphate 7-water, according to GOST 8723-75;
- cobalt sulphate, according to GOST 4462-78;

- ammonium molybdate, according to TU 48-29-1-73
- ferrous sulphate, according to GOST 498-77
- water of centralized household water supply.

7. Content of nutrients (quality indicators).

Mass fraction of organic substance (to dry substance) - 55-89%, the amount of humic and fulvic acids – not less than 2.0 g/l, total nitrogen content (N) – not less than 150 g/l, total phosphorus (P_2O_5) – not less than 20 g/l, total potassium (K_2O) – not less than 200 g/l, magnesium (Mg_2O) – not less than 100 mg/l, mass fraction of microelements: copper (Cu) - not less than 0,1 g/l, zinc (Zn) - not less than 100 mg/l, cobalt (Co) - not less than 15 mg/l, manganese (Mn) - not less than 100 mg/l %, molybdenum (Mo) - not less than 100 mg/l, iron (Fe) - not less than 10 mg/l, boron (B) - not less than 4 mg/l, acidity (pH) – 7.0-8.9.

8. Preparative form (external appearance).

Dark-brown liquid colloidal suspension.

9. Range of application, purpose of agrochemical.

It is applied as organo-mineral humic fertilizer with microelements for presowing (preplant) treatment of seeds (planting material), plant-root and foliar fertilization of agricultural, cane fruit and floral crops at all types of soils.

10. Recommended regulation of application.

Recommendations on transportation, application and storage of agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»* are elaborated by OOO «Plant» and suggest its using in agricultural production and personal farms (Application №1).

In farming industry the Fertilizer based on humic acids with microelements «Bioplant Flora» is recommended to be used in planting of:

- grain spring crops (wheat, rye, barley, oats, millet, sorghum, etc) - preplanting treatment of seeds on the basis of 0.5-1 l of the fertilizer per 1 t seeds and foliar fertilizing: at the phase of full shoots, taking into account that 1-2 l fertilizer per ha, at the phase of bushing out – beginning of stem elongation - 2-3 l/ha;

- grain winter crops (wheat, rye, barley, oats, millet, sorghum, triticale, etc) - preplanting treatment of seeds, taking into account 0.5-1 l fertilizer per 1 t seeds and foliar fertilizing: at the phase of bushing out (in spring) – taking into account 2-3 l fertilizer per ha;

- potatoes – treatment of tubers before planting taking into account 0.5 l fertilizer per 1 t and foliar fertilizing: at the phase of full shoots - taking into account 2-3 l fertilizer per ha, before the first earthing up - 1-2 l/ha, at the beginning of bud-formation period - 3-5 l/ha;

- technical crops and edible roots (sugar beet, table beet, fodder beet, carrot, parsley, celery, garden radish, black reddish, turnip) - foliar fertilizing: 1st - at the phase of full shoots (formation of cotyledonous leaves), taking into account 2-3 l fertilizer per ha, 2nd - 20-30 days later - 3-4 l/ha, 3rd - 60-70 days after the second treatment - 4-5 l/ha;

- vegetable crops planted by seedlings (tomato, pepper, aubergine, winter cherry, cucumber, vegetable marrow, scallop squash, watermelon, melon, pumpkin, etc) - seeds watering for 3 hours, taking into account 2 ml fertilizer per 1 kg seeds, cassettes immersing before pricking out - 7-8 l per 350-400 l water for 100000 cassettes and foliar fertilizing: 1st - 3-5 days later after pricking out taking into account 4-5 l fertilizer per ha, 2nd – at the phase of bud formation and 3rd - 15 days after the second treatment - 2-3 l/ha;

- vegetable crops planted by direct sowing (tomato, pepper, aubergine, ground-cherry, cucumber, vegetable marrow, scallop squash, watermelon, melon, pumpkin, etc) – seeds steeping for 3 hours, taking into account 2 ml fertilizer per 1 kg of seeds and foliar fertilizing: 1st – at the stage of development 3-4 leaves, taking into account 4-5 l fertilizer per ha, 2nd – at the phase of bud formation - 6-7 l/ha and 3rd - 15 days after the second treatment - 4-5 l/ha;

- all sorts of cabbage (white, red-headed, savoy, Brussels, cauliflower, broccoli, kohlrabi, Pe-tsai cabbage, Chinese, leaf) – seed steeping for 3 hours, taking into account 2.5 ml fertilizer per 1 kg seeds, cassettes immersing before pricking out - 7-8 l per 350-400 l water for 100000 cassettes and foliar fertilizing: 1st - after seedlings transplanting, taking into account 3-4 l fertilizer per ha, 2nd – at the phase of heading - 4-5 l/ha;

- all sorts of onion (bulb onion, leek, etc), garlic - seed steeping for 3 hours, taking into account 2.5 ml fertilizer per 1 kg seeds or treatment of planting material before planting - 2 l/t and foliar fertilizing: 1st - at the phase of full shoots, taking into account 4-5 l fertilizer per ha, 2nd - 15-20 days after the first treatment - 3-4 l/ha.

- herbaceous crops (parsley, dill, leaf lettuce, watercress, cabbage lettuce, basil, coriander, celery, saffron, tarragon, etc) – seed steeping for 6 hours taking into account 2 ml fertilizer per 1 kg seeds and foliar fertilizing: 1st - at the phase of full shoots, taking into account 3-4 l fertilizer per ha, 2nd - 12-14 days later - 4-5 l/ha;

- wild strawberries – foliar fertilizing: 1st – in spring at the beginning of spring vegetation, taking into account 6-8 l fertilizer per ha, 2nd – at blooming period - 8-10 l/ha, 3rd - after cropping - 3-4 l/ha;

- fruit trees (apple-tree, pear tree, quince tree, apricot tree, bird-cherry tree, cherry-tree, etc) – foliar fertilizing: 1st - before leafing stage, taking into account 4 - 5 l fertilizer per ha, 2nd – at the period of bud formation – initial blossom - 5-6 l/ha, 3rd - 10 days after blossom finishing - 8-10 l/ha;

- baccate bushes (raspberry, blackberry bush, sea-buckthorn, currants, gooseberry bush, honeysuckle, etc) - foliar fertilizing: 1st – in the period of leafing, taking into account 2-3 l fertilizer per ha, 2nd – in the period of bud formation until initial blossom - 3-4 l/ha, 3rd - 10 days after the finishing of blossom - 4-5 l/ha;

- vine - foliar fertilizing: 1st – in the period of flow of sap, taking into account 4-5 l fertilizer per ha, 2nd – at the phase of shoot and blossom cluster growing - 2-3 l/ha, 3rd – at the phase of berry growing - 3,5-5,5 l/ha;

- ornamental trees and bushes (deciduous) – steeping of root system of seedlings before planting for 2-3 hours, taking into account 0.1 l fertilizer per 10 l water and foliar fertilizing: 1st - in spring during leafing, subsequent 2-3 times of additional fertilizing with the interval of 21-28 days, taking into account 8 - 10 ml fertilizer per 20 l water;

- ornamental trees and bushes (coniferous) – root watering during planting (replanting), taking into account 0.1 l fertilizer per 10-15 l water and additional fertilizing: 1st – in spring at the beginning of vegetation (foliar), taking into account 50-70 ml fertilizer per 10 l water, subsequent 2-3 times of fertilizing (root) with the interval of 15-20 days, taking into account 8-10 ml fertilizer per 10-15 l water;

- lawn grass - foliar fertilizing: 1st – in spring at the beginning of grass aftergrowing, taking into account 5-7 l fertilizer per ha, subsequent 5-6 times of additional fertilizing - after haying - 3-5 l/ha;

- floricultural crops – seed steeping for 6-12 hours, taking into account 2 ml fertilizer per 1

kg seeds and foliar fertilizing: 1st – in spring at the beginning of vegetation renewal (for perennials) or at the phase of full shoots (for annual plants), taking into account 5-7 l fertilizer per ha, subsequent 3-6 times of additional fertilizing with the interval of 12-15 days - 3-5 l/ha.

Rate of application of spray material for preplant treatment of seeds, foliar and root fertilizing of different agricultural and ornamental crops in agricultural production — are generally accepted.

At personal farms the Fertilizer based on humic acids with microelements «Bioplant flora» is recommended for use during growing of fruit, vegetable and floral-ornamental crops. It is recommended to steep the seeds of vegetable and ornamental crops before sowing in the spray material of fertilizer during 6-12 hours, root system of seedlings of fruit and floral-ornamental crops before transplanting during 2-3 hours, taking into account 100-200 ml fertilizer per 10 l water.

Additional fertilizing of vegetable, floral-ornamental annual crops is recommended to be conducted after the emergence of full hoots or transplanting, then 3-4 times with the interval of 10-15 days; perennial floral-ornamental crops - 1-2 times before initial blossom and 1-2 times after blossom; fruit trees and bushes - before leafing, in the period of bud formation – initial blossom and 10 days after blossom finishing; ornamental trees and bushes (deciduous) – in spring during leafing, subsequent 2-3 times of additional fertilizing with the interval of 21-28 days; ornamental trees and bushes (coniferous) – in spring at the beginning of vegetation and 2-3 times with the interval of 15-20 days; lawn grass: the 1st time – in spring at the beginning of plant formation aftergrowing, subsequent 5-6 times of additional fertilizing after haying; potted floral-ornamental crops – in the period of their active growth from March to September - once every 10-15 days, from October through to February – once 1-1.5 months, taking into account 10-50 ml of fertilizer per 10 l water.

Plant fertilizing is recommended to be conducted by spraying or watering plants with aqueous solution of fertilizer. Plants are sprayed in the morning and in the evening in dry windless weather, evenly moistening leaves. The most efficient is combination of spraying and watering, especially in early phases of plant growing.

Recommended rate of application of spraying material: in watering of vegetable, floral-ornamental crops, potatoes, wild strawberry and other crops make from 4-5 to 10 l/m²; in spraying - 1-1.5 l/10 m²; in watering of fruit and floral-ornamental trees and bushes from 10 to 20 l per one bush, depending on the size of the plant; for trees - from 10 to 30-50 l (the area of pan by crown projection – bedding of the most active zone of roots). During spraying (foliar fertilizing) – depending on the sort of crop vegetative mass: raspberry, currant and other bushes – 1.5-2 l/10 m² or bush; trees 2-3 l – for a young tree, 5-10 l – for a mature tree.

Additional fertilizing of potted plants is recommended to be conducted by watering till complete soaking of earthen clod. Depending on the size of plants, consumption of solution ranges from 100 to 200 ml per young plant (flowerpot capacity is 2-3 l) to 1-1.5 l for a mature plant (flowerpot capacity is 10 liters and over). It is necessary to water the plant with pure water the day before.

11. Application Technology.

Technological schemes of using the agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»* are elaborated by OOO «Plant» and presuppose using in agricultural production of typical technical means, meant for conducting agrochemical works. Plant-root fertilizing is recommended to be conducted through the systems of drip watering and

rainers, some fertilizing - using rod, fan-driven, knapsack sprayers. It is necessary to pour into the tank of sprayer or water distribution vehicle by 2/3 of the volume, to add the necessary amount of fertilizer, mixing device being switched on, add water to design volume, to mix the solution and conduct fertilizing.

In private farm holdings additional fertilizing is conducted using all sorts and systems of watering or spraying (traditional watering, drip watering, irrigation, etc) – watering cans, knapsack sprayers and other hand stock. The watering can (sprayer tank, etc) is filled with water by 2/3 of the volume, then the necessary amount of fertilizer is added, water is added until the design volume, the solution is mixed and fertilizing is conducted.

When using the agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»*, user's special preparation and special equipment is not required.

12. Phytotoxicity

If used in recommended amounts, phytotoxicity is not stated.

13. Effectiveness

The effectiveness of similar humic fertilizers was studied during testing in relation to agricultural and ornamental crops. Fertilizers based on humic acids possess rather high biological potency, in seeds treatment they raise the germinating ability and emergence rate, contribute to more intensive development of root system of the plants, accelerate growth and development of plants, raise their crop capacity.

14. Conclusion

For the expert's report on biological effectiveness of the agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»*, the materials of OOO «Plant» have been submitted.

The assessment of biological effectiveness of the agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»* as a humic fertilizer has been conducted. The manufacturer of the fertilizer has worked out well-grounded recommendations on dosing, time constraints and technology of using the agrochemical taking into account the crops planted. They provide for using typical technical means and typical personal protection equipment in the process of conducting agrochemical works. In using the agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»*, user's special training is not required.

It is expedient to use the agrochemical *Fertilizer based on humic acids with microelements «Bioplant flora»* manufactured by OOO «Plant» for state registration as a humic fertilizer for application in agricultural production and personal private holdings for the period of 10 years.

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2008

Application 1

To expert's report of SSI "The All-Russian Agrochemistry Research Institute named after D.N. Pryanishnikov" (SSI ARARI) on establishment of regulations of application of the agrochemical **Fertilizer based on humic acids with microelements «Bioplant Flora» (OOO «Plant»)**

Recommended regulations of application.

A. For agricultural production;

Name of Preparation	Crop	Dose of preparation application	Time, application peculiarities
1	2	3	4
Fertilizer based on humic acids with microelements «Bioplant flora»	Grain spring crops	0.5-1 l/t Solution rate - 1 0 l/t	Preplant treatment of seeds
		1-2 l/ha Solution rate - 300 l/t	Foliar fertilizing at the phase of full shoots
		2-3 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of bushing out – beginning of stem elongation
	Grain winter crops	0,5-1 l/t Solution rate - 1 0 l/t	Preplant treatment of seeds
		2-3 l/ha Solution rate - 300 l/ha	Foliar fertilizing in spring at the phase of bushing out
	Potatoes	0,5 l/t Solution rate - 20 l/t	Pre-planting treatment of tubers
		2-3 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of full shoots
		1-2 l/ha Solution rate - 300 l/ha	Foliar fertilizing before the first earthing up
		3-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the beginning of bud formation phase
	Technical crops and edible roots	2-3 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of full shoots (formation of cotyledonous leaves)
		3-4 l/ha Solution rate - 300 l/ha	Foliar fertilizing 20-30 days after the first fertilizing
		4-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing 60-70 days after the second fertilizing
	Vegetable crops (planted by seedlings)	2 ml/kg Solution rate - 1 l/kg	Seed steeping for 3 hours
		7-8 l per 350-400 l water per 100000 cassettes	Cassettes steeping before pricking out the seedling
		4-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing 3-5 days after pricking out
		2-3 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of bud formation and 15 days later
Vegetable crops (planted by	2 ml/kg Solution rate - 1 l/kg	Seed steeping for 3 hours	

	direct sowing)	4-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing in the period of 3-4 leaves development
		6-7 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of bud formation
		4-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing 15 days after the second fertilizing
Cabbage		2,5 ml/kg Solution rate - 1 l/kg	Seed steeping for 3 hours
		7-8 l per 350-400 l water per 100000 cassettes	Steeping cassettes before pricking out seedlings
		3-4 l/ha Solution rate - 300 l/ha	Foliar fertilizing after the seedling transplanting
		4-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of heading
Onion, Garlic		2,5 ml/kg Solution rate - 1 l/kg	Seed steeping for 3 hours
		2 l/t Solution rate - 20 l/t	Treatment of planting stock before planting
		4-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of full shoots
		3-4 l/ha Solution rate - 300 l/ha	Foliar fertilizing 20 days after the first fertilizing
Herbaceous Crops		2 ml/kg Solution rate - 1 l/kg	Seed steeping for 6 hours
		3-4 l/ha Solution rate - 300 l/ha	Foliar fertilizing at the phase of full shoots
		4-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing 12-14 days after the first fertilizing
Wild Strawberry		6-8 l/ha Solution rate - 300 l/ha	Foliar fertilizing in spring at the beginning of spring vegetation
		8-10 l/ha Solution rate - 300 l/ha	Foliar fertilizing in the blooming period
		3-4 l/ha Solution rate - 300 l/ha	Foliar fertilizing after harvesting
Fruit Trees		4-5 l/ha Solution rate - 800-1000 l/ha	Foliar fertilizing before leafing stage
		5-6 l/ha Solution rate - 800-1000 l/ha	Foliar fertilizing at the phase of bud formation – blooming period
		8- 10 l/ha Solution rate - 800-1000 l/ha	Foliar fertilizing 10 days after blossom finishing
Small fruit		2-3 l/ha Solution rate - 800-1000 l/ha	Foliar fertilizing in leafing period
		3-4 l/ha Solution rate - 800-1000 l/ha	Foliar fertilizing in the period of bud formation – beginning of blossom
		4-5 l/ha Solution rate - 800-1000 l/ha	Foliar fertilizing 10 days after blossom finishing
Grape		4-5 l/ha Solution rate - 800- 1000 l/ha	Foliar fertilizing in spring in the period of flow of sap
		2-3 l/ha Solution rate - 800- 1000 l/ha	Foliar fertilizing at the phase of shoots and blossom clusters growth
		3.5-5.5 l/ha Solution rate - 800- 1000 l/ha	Foliar fertilizing at the phase of berry growth

	Ornamental trees and bushes (deciduous)	0.1 l per 10 l water	Steeping of the root system of seedlings before planting for 2-3 hours
		8-10 ml/20 l water Solution rate: 2 l/bush, 10 l/tree of 5-10 m high, 20 l/tree of 10-20 m high	Foliar fertilizing: 1 st – during leafing, subsequent 2-3 times of fertilizing being conducted with the interval of 21-28 days
	Ornamental trees and bushes (coniferous)	0.1 l / 10-15 l water	Root watering during planting (transplanting)
		8-10 ml/20 l water Solution rate: 2 l/bush, 10 l/tree of 5-10 m high, 20 l/tree of 10-20 m high	Foliar fertilizing in spring at the beginning of vegetation
		8-10 ml/10-15 l water	Plant-root fertilization 2-3 times with the interval of 15-20 days, taking into account [некорректная фраза – прим. переводчика]
	Lawn grass	5-7 l/ha Solution rate - 300-500 l/ha	Foliar fertilizing in spring at the beginning of grass stand regrowth
		3-5 l/ha Solution rate - 300 l/ha	Foliar fertilizing 5-6 times after haying
	Flower crops	2 ml/kg Solution rate - 1 l/kg	Seed steeping for 6-12 hours
		5-7 l/ha Solution rate - 300-600 l/ha	Foliar fertilizing in spring at the beginning of vegetation renewal (for perennials) or at the phase of full shoots (for annual plants)
		3-5 l/ha Solution rate - 300-600 l/ha	Foliar fertilizing 3-6 times with the interval of 12-15 days
	All crops	from 3-4 l to 7-8 l (for weak plants) per ha Solution rate – depending on watering system	Plant-root fertilization 2-3 times during the season

B. For personal private holdings:

Name of preparation	Crop	Dose of Preparation application	Time, peculiarities of application
1	2	3	4
Fertilizer based on humic acids with microelements «Bioplant flora»	Vegetable, Fruit and Flower-Ornamental Crops	100-200 ml/10 l water	Steeping of seeds for 6-12 hours, planting material, root system of seedlings of fruit and flower-ornamental crops for 2-3 hours
	Vegetable, Flower (Annual) Crops	10-50 ml/10 l water Plant-root fertilization — 3-10 l/m; Foliar fertilizing - 1.5-3 l/10 m ²	Fertilization after the emergence of full shoots or seedlings planting, then 3-4 times with the interval of 10- 15 days
	Flower crops (Perennial)		Fertilization 1-2 times before the beginning of blossom and 1-2 times after blossom

Fruit trees and bushes	10-50 ml/10 l water Solution rate - foliar fertilizing - bushes – 1.5-2 l/ 10 m ² or a bush; trees 2-3 l – per young tree, 5-10 l – per a mature tree; plant-root fertilization - from 10 to 20 l per bush, depending on the size of the plant; for trees - from 10 to 30-50 l	Fertilization before leafing, in the period of bud formation – beginning of blossom and 10 days after the blossom finishing
Ornamental Trees and Bushes (Deciduous)	10-50 ml/10 l water Solution rate - Foliar fertilizing - 2 l/bush, 10 l/tree of 5-10 m high, 20 l/tree of 10-20 m high; plant-root fertilization - from 10 to 20 l per bush, depending on the size of the plant; for trees - from 10 to 30-50 l	Fertilization in spring during leafing, subsequent 2-3 times of additional fertilization with the interval of 21-28 days
Ornamental Trees and Bushes (Coniferous)	10-50 ml/10 l water Solution rate - Foliar fertilizing - 2 l/bush, 10 l/tree of 5-10 m high, 20 l/tree of 10-20 m high; plant-root fertilization - from 10 to 20 l per bush, depending on the size of the plant; for trees - from 10 to 30-50 l	Fertilization in spring at the beginning of vegetation and 2-3 times with the interval of 15-20 days
Lawn Grass	10-50 ml/ 10 l water plant-root fertilization - 3-5 l/m ² ; Foliar fertilizing - 1.5-3 l/10 m ²	Fertilization in spring t the beginning of grass stand regrowth, subsequent 5-6 times after haying
Flower-ornamental Potted Plants	5 ml/2 l water Solution rate: Foliar fertilizing - until complete moistening of leaf area; plant-root fertilization – until complete moistening of the earth clod	Fertilization since March through to September - 1 time in 10-15 days, from October to February - 1 time in 1-1.5 months

Head of SSI ARARI

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Testing Growth Regulators of Plants and Agrochemicals /signature/ O. A. Shapoval

Leading Scientists of the Laboratory

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