

Humistar S

Recommendations for use

The preparation is intended for pre-sowing seed treatment, as well as for root (watering) and foliar (spraying) treatment of plants. Spraying plants with a diluted water preparation prevents various plant diseases. The most effective use of this preparation is in closed ground conditions when growing vegetable and green crops. The incidence of plant root rot, ascochitosis and powdery mildew is sharply reduced.

The use of the drug in agricultural practice is safe and harmless for both humans and animals, as well as soil microfauna and microflora and has a positive effect on the processes of growth, metabolism and photosynthesis, which contributes to an increase in the yield of a wide variety of crops. When working with the drug, the usual safety rules are observed.

Note:

1. Before using the preparation, the contents must be shaken.
2. The solution of the preparation should be used immediately after its preparation.
3. When applying the preparation together with pesticides and/or mineral fertilizers, an aqueous solution of the preparation is first prepared, then the remaining ingredients are added to it.
4. When the sun is scorching, strong wind spraying can not be done.

The preparation is compatible with all fungicides, insecticides and herbicides with the exception of copper sulfate, which allows it to be applied together with them without disrupting technological processes.

To increase the germination of seeds of agricultural crops, it is recommended to carry out pre-sowing soaking of seeds in a diluted preparation. This is especially important when germinating small seeds with low germination energy. Pre-sowing treatment of seeds with the preparation enhances and synchronizes earlier seed picking and germination, which helps to reduce the seeding rate and increase the quality and quantity of the crop.

The seeds are soaked until they swell completely in a solution of the preparation at room temperature. The solution is prepared by mixing the preparation with water 1:20. The seeds are placed in a solution in a bag or gauze. It can be soaked by pouring the seeds on a tarpaulin or polyethylene. At the same time, it is necessary to pour them well and mix them, then reliably hide them from evaporation.

Duration of seed soaking:

- peas and beans - 6 hours;
- tomatoes – 8 hours;
- radish, lettuce, lettuce chicory, beet - 12 hours;
- carrots, peppers, cucumbers, melons, onions, dill - 24 hours.

The consumption of the preparation is 0.5-0.8 liters per 1 kg of seeds.

Tubers and bulbs are soaked 0.5 hours in a solution of 1:20 before planting.

Picking seedlings. It is recommended to use a solution of 1:50 - 1:100. The soil prepared for transplanting plants should be watered abundantly beforehand.

When planting in the ground, water the plants under the root of 100-200 ml with a solution of the preparation 1:50 - 1:100.

Foliar treatment. Prepare a solution of 1:200. The leaf surface of plants is sprayed with a fine spray gun.

Indoor plants. For root dressing, a solution of 1:100 is used. Water 2-3 times a month.

Garden and vegetable crops. For root dressing, a solution of 1:100 is used. Water 1 time a week.

Spring and autumn tillage of soil and perennial crops. It is recommended to use a solution of 1:50-1:100. The consumption of the diluted preparation is 10-20 liters per 10 sq.m.

Grape

Plant cultures	Processing periods	Doses and method of application	Recommended concentration of the solution
Grape	Cuttings	Soaking in solution for 1.5-24 hours	1:20-1:40
	Transplanting seedlings	Watering, 10 l/ha	1: 100
	Sap flow phase	Spraying at the beginning of the phase, 5 l /ha	1: 150-1:200
		Drip irrigation after 12-15 days, 10 l/ha (*)	1: 100
	The growth phase of shoots and inflorescences	Spraying, 5 l/ha	1: 150-1:200
		Spraying at the very end of the phase (but not earlier than after 12-15 days), 5 l/ha (*)	1: 150-1:200
	Flowering phase	Drip irrigation, 10 l/ha (*)	1: 100
	Berry growth phase	Spraying at the beginning of the phase, 5 l /ha	1: 150-1:200
		After 14-18 days, spraying 5 l/ha or watering, 10 l/ha (*)	1: 150-1:200 (spraying)

			1: 100 (watering)
		After 14-18 days spraying 5 l/ha	1: 150-1:200
	The ripening phase of berries	Spraying at the beginning of the phase, 5 l/ha	1: 150-1:200
		After 14-18 days, spraying 5 liters or watering, 10 liters /ha (*)	1: 150-1:200 (spraying) 1: 100 (watering)
	Leaf fall phase	Spraying immediately after harvesting, 5 l/ha (*)	1: 150-1:200

(*) - processing is carried out at the discretion of the agronomist.

Treatment of seedlings before planting

Planting cuttings in the nursery.

The treatment of the planting material with an aqueous solution of the preparation is carried out before planting the cuttings in the nursery. The treatment can be combined with a dressing. The whole cuttings are soaked for **1.5 to 24 hours** in an aqueous solution of **1:20-1:40**.

This treatment is necessary to reduce the loss of cuttings when they are planted. It also contributes to levelling the strongest stress situation, when the cuttings are left without root nutrition of mother plant and without leaf apparatus that can provide respiration and synthesize nutrients for root and leaf growth. Under these conditions, the product stimulates root formation and accelerates the development of leaf buds.

Sap flow phase.

The first spring spraying of vines with an aqueous solution of the preparation is carried out at the beginning of sap flow phase at the rate of 5 l of the preparation per 1 ha. The aqueous solution of the preparation getting on the grapevine bark is absorbed into the bark and then transported with the sap on the whole plant. Deep physiological and biochemical rearrangement of the plant takes place during sap flow phase, therefore, balanced microelemental nutrition brought by the preparation enables to activate enzymatic processes to a large extent, providing normal, stress-free development of the plant. In addition, spores of beneficial soil microflora deposited on the bark of grapevines begin to develop rapidly and displace phytopathogenic microorganisms from their habitat. As a result of treatment with the preparation at the very beginning of annual vegetative activity, vines not only get full microelemental nutrition, but they also become protected from phytopathogens of various etiology. Grapevine treatment in sap flow phase allows you to preventively combat various stresses, which allows the plant to fully realize its genetic potential and maximize the peculiarities of the variety.

Thus, the first vine treatment contributes to the development of an abundant and healthy grape crop.

If the sap run lasts for more than **30 days**, at the discretion of the agronomist **12-15 days** after spraying, **the grapevines may be treated** with the preparation by drip irrigation. In this case the preparation is added to the tank mixture at the rate of 10 litres of the preparation per 1 ha. Such treatment will not only strengthen the immunity of plants, but will also contribute to a fuller disclosure of the genetic potential of the variety. It should also be noted that using it at the agronomist's discretion, the use of mineral fertilizers can be reduced by 30-50% without reducing the quality and yield.

Shoots and inflorescences growth phase

Vine foliar treatment with an aqueous solution of the preparation is carried out at this phase on buds blossoming and first leaves at the rate of 5 l of the preparation per 1 ha. The concentration of the aqueous solution should be such as is traditionally used in the given area.

This treatment of grapevine during this period allows, firstly, to support young shoots, organize fast and, most importantly, timely and balanced feeding of leaf cells with microelements, which immediately affects intensification of enzymatic activity. Secondly, to protect young shoots from stresses that can occur in April and May. And thirdly, the treatment allows you to settle on the young shoots and young leaves with spores of useful soil microflora, which will effectively protect plants from phytopathogens during the whole active period of vegetation.

If growth phase of inflorescences and shoots lasts more than **30 days**, at the discretion of an agronomist it is highly desirable **to repeat foliar treatment of grapevine** with water solution of the preparation at the rate of 5 liters of preparation per 1 ha at the very end of phase (but not earlier than 12-15 days after the first spraying). This is also important because in the next phase of vegetative development - the flowering phase - treatments are undesirable, and further plant development largely depends on the supply of nutrients during this period.

Flowering phase

Vine treatments with an aqueous solution of the preparation during the flowering phase, either by sprinkler irrigation or by spraying, are not normally applied. In case of an urgent need to intensify enzymatic processes or to strengthen stressed plants, treatment of vines at this period **by drip irrigation** is possible. The preparation is added to the tank mixture at the rate of 10 litres of the preparation per 1 ha.

This treatment can not only nourish the vine and relieve it from the effects of stress, which is good for the current year's crop, but also help the plant to form complete generative organs next year, affecting the formation of the next crop.

Berry growth phase

Immediately after the flowering phase, at the very beginning of the berry growth phase, along with the traditional methods of pesticide application against mildew spores, it is recommended to spray the vines with an aqueous solution of the preparation at the rate of 5 l of the preparation per 1 ha.

The second spraying with an aqueous solution of the preparation during berry growth phase is also recommended at the rate of **5 litres of the preparation per 1 ha** in 14-18 days after the previous spraying. The second spraying can be replaced by drip irrigation with an aqueous solution of the preparation. In this case, the preparation is added to the tank mixture at a rate of **10 l of the preparation per 1 ha**.

If 14 to 18 days after the second treatment, the vines have not yet reached the next developmental stage and berry growth continues, another spraying with an aqueous solution of the preparation at a rate of 5 l of the preparation per 1 ha is recommended.

Two or even better, three times spraying with the preparation or two sprays and one drip irrigation with the preparation will allow, firstly, to provide plants with microelemental nutrition and biologically active substances, which are essential for normal berry development, Secondly, on the surface of the growing berries are seeded spores of microorganisms that are not symbiotic to phytopathogens and prevent the development of bacterial infections, and thirdly, to support photosynthetic processes intensified by the impact of liquid vermicompost. This treatment not only increases the current year's yield but also improves the conditions for next year's crop formation.

Berry ripening phase

Fertilization of vines at the beginning of this phase or measures for protection against pests and diseases is recommended to be combined with treatment of plants with an aqueous solution of the preparation at the rate of **5 l of the preparation per 1 ha**. If the duration of berry ripening phase is more than 40 days, it is recommended to apply the spraying twice with intervals of **14-18 days**.

A second spraying during the berry ripening phase can be replaced by drip irrigation at the agronomist's discretion. In this case, the preparation is added to the tank mixture at the rate of **10 litres of the preparation per 1 ha**.

Double treatment with the preparation (double spraying or spraying and watering) contributes to stimulation of sugar accumulation and, as a consequence, to reduction of berry ripening period. Other conditions being equal, the grapes on the treated plants ripen 18-30 days earlier than on the control (untreated plants).

Leaf fall phase

Spraying of vines during this development phase with an aqueous solution of the preparation at the rate of **5 litres of the preparation per 1 ha** is possible by decision of the lead agronomist if the plants are weak and need a top-up to better prepare them for winter. Spraying with the preparation is carried out at the very beginning of the leaf-covering phase, immediately after the harvest. This treatment promotes the accumulation of reserves and protective substances, which are essential for the normal overwintering of the plants. In some cases, it is possible, at the grower's discretion, to forego the application of retardants and wait for the natural leaf fall, as this gives additional time to channel nutrients and assimilants from the leaves into shoot maturation and accumulation in the plant.

Pumpkin

(watermelon, melon, pumpkin, cucumber, courgette, patisson) grown in the outdoor soil.

Plant cultures	Processing periods	Doses and method of application	Recommended concentration of the solution
Outdoor pumpkin crops, (watermelon, melon, pumpkin, cucumber, courgette, patisson)	Seeds unfertilised (by dressing, soaking, bubbling)	2 l per 1 t seed (pumpkin, watermelon, courgette, patisson), 3 l per 1 t seed (cucumber, melon)	1:10-1:50
	1-3 true leaves phase	Spraying - 5 l/ha	1:200
	Beginning of the budding phase	Spraying - 5 l/ha	1:200
	Optional - every 12-15 days	Watering - 10 l/ha	1:100

When planting seed drenching, pre-sowing treatment with the product is not recommended.

When planting seed undrenching their treatment is carried out together with soaking - dressing or barbotage at the rate of

- pumpkin, water melon, courgette 2 liters of the drug per 1 ton of seeds;
- cucumber and melon 3 liters of the drug per 1 ton of seeds.

Any seed dressing can be used for seed treatment. Dressing is usually carried out with an aqueous solution with a concentration of 1:10 to 1:50.

This treatment promotes rapid swelling and germination of the seeds. After this treatment, biochemical and physiological processes take place in the seeds, and complex chemical compounds (starches, proteins, fats, etc.) are transformed by enzymes into forms available

for embryo nutrition. Agronomically beneficial microflora, not symbiotic to phytopathogens, settles on the surface of the seeds. Treatment of seeds with an aqueous solution of the preparation also contributes to the increase of root system weight, length and lodging.

First spraying

Apply in the phase of the first to third true leaves at a rate of 5 litres of the preparation per 1 ha of plant. In this phase, the generative organs are established at the cellular level, so this treatment increases the number of inflorescences and, consequently, the number of fruits. The first spraying also increases the number of leaves and leaf area, intensifies photosynthesis, forms a strong root system, which allows plants to safely endure drought.

Second spraying

It is carried out at the beginning of the budding phase at the rate of 5 litres of the preparation per 1 ha of plants. This treatment helps to intensify photosynthesis and accumulation of nutrients in plants, which leads to increased yields.

Subsequent treatments

Subsequent treatments are carried out facultative with an interval of 12-15 days. When spraying the plants 5 litres of the preparation per 1 ha of plants are used, when watering 10 litres respectively. These treatments contribute to the accumulation of vitamins and biologically active substances in fruits, as well as give the products a marketable appearance.

The preparation is recommended to be used also preventively to relieve stress load on plants due to drought and other unfavourable phenomena, as well as simultaneously with the application of chemical plant protection agents and mineral fertilizers. In this case, 10 liters of the drug per 1 ha of plants are used, the treatment is carried out not more often than once every 10-12 days.

The product is compatible with any pesticides and mineral fertilizers **except for copper sulfate**.

Restoration (resuscitation) activities with the use of the drug are carried out under the control of the crop protection agronomist.

At the discretion of agronomist-agrochemist, depending on the condition of plants and climatic conditions in case of using the drug it is possible to reduce the use of mineral fertilizers by 30-50% of the usual rate of application.

For the spraying of vegetative plants the preparation's water solution concentration from 1:200 is used, for irrigation - from 1:100, depending on the used agrotechnics. Specific doses and dates of application, the number of treatments within the above

parameters are determined by the local agronomist, based on the agrophonetics, the crop of the precursor, climatic conditions and phenological observations of individual plants.

Winter crops (wheat, rye, barley, triticale)

Plant cultures	Processing periods	Doses and method of application	Recommended concentration of the solution
Winter cereals (wheat, rye, barley, triticale)	Seeds (when etching)	3 liters per 1 ton of seeds	1:10-1:20
	Foliar treatment in the tillering phase (3-5 leaves)	Spraying 5 l/ha	1:200
	Foliar treatment at the beginning of the tube exit phase	Spraying 5 l/ha	1:200

Pre-sowing seed treatment

It is carried out at the rate of 3 liters of the drug per 1 ton of seeds. Seed treatment can be carried out in conjunction with any protectants. The solution is prepared based on the amount of water used when etching 1 ton of seeds. Usually, etching is carried out with an aqueous solution with a concentration of 1:10-1:20. Such treatment promotes rapid swelling and germination of seeds, which is largely due to the receipt of microelement nutrition by plants introduced together with microhumates. In seeds, after treatment with the preparation, biochemical and physiological processes occur faster. Under the influence of enzymes, complex chemical compounds (starch, proteins, fats, etc.) turn into simple soluble compounds and become available for feeding the embryo. The treatment of seed material is also directed against infection (helminthosporiosis, fusarium, etc.). Agronomically useful microflora, not symbiotic to phytopathogens, settles on the surface of seeds. Also, the treatment of seeds with an aqueous solution of the preparation contributes to an increase in the number of tillering nodes, an increase in the mass, length and mocciness of the root system.

The first spraying

It is carried out in spring by seedlings during the beginning of tillering at the rate of 5 liters of the preparation per 1 ha. The treatment is combined with the first spring treatment with herbicides. This treatment contributes to the increase of the leaf plate, the intensification of photosynthesis and an increase grain formation in spikes. This treatment also makes it possible to significantly reduce or eliminate the effects of stress (including due to drought), which allows young plants to fully show their genetic potential

The second spraying

It is carried out optionally (if necessary) in the spring at the beginning of the exit phase into the tube at the rate of 5 liters of the preparation per 1 ha. The treatment is combined with herbicide treatment. Such processing contributes to the accumulation of nutrients that affect yield, increases the protein and gluten content in the grain, contributes to an increase in grain weight. The preparation is recommended to be used, including preventatively, to relieve stress on plants due to drought, other adverse events, as well as simultaneously with the introduction of chemical plant protection products, mineral fertilizers. With additional treatments, 2 liters of the drug per 1 hectare are used. Treatments are carried out no more than once every 10-12 days.

Restorative (resuscitation) measures with the use are carried out under the supervision of an agronomist for plant protection. At the discretion of the agronomist, depending on the condition of the plants and climatic conditions, in the case of using the drug, it is possible to reduce the use of mineral fertilizers by 30-50% of the usual application rate. For spraying vegetative plants, the concentration of an aqueous solution of the preparation is used from 1:400 to 1:500, depending on the agricultural equipment used. The specific doses and timing of application, the number of treatments within the above parameters are determined by a local agronomist-agrochemist, based on the agrophone, the culture of the predecessor, climatic conditions and phenological observations of individual plants.

Maize

Plant cultures	Processing periods	Doses and method of application	Recommended concentration of the solution
Maize	Seeds (when etching)	3 liters per 1 ton of seeds	1:10-1:20
	Phase 2-3 of real leaves	Spraying 5 l/ha	1:200
	The beginning of the exit phase into the tube (8-9 real leaves)	Spraying 5 l/ha	1:200
	End of the tube exit phase, before the panicle ejection phase (recommended)	Spraying 5 l/ha	1:200

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Pre-sowing seed treatment

Before planting, the seed material is processed together with etching at the rate of 3 liters of preparation per 1 ton of seeds. Usually etching is carried out with an aqueous solution with a concentration from 1:10 to 1:20. Such treatment is necessary for better seed germination, plant development, protein accumulation and increased resistance to diseases and pests.

The first spraying

The first spraying is carried out on seedlings in the phase 2-3 of this leaf at the rate of 5 l/ha. This treatment can be combined with pesticide treatment. Such treatment contributes to the formation of healthy, strong plants, an increase in the number of leaves and the area of the leaf plate, the intensification of photosynthesis, the formation of a powerful root system.

The second spraying

The second spraying is carried out at the beginning of the exit phase into the tube at the rate of 5 l/ha. This treatment can be combined with pesticide treatment and foliar treatment. This treatment contributes to an increase in the area of the leaf plate, the intensification of photosynthesis. During the same period, generative organs are formed at the cellular level, the number of segments and the length of the corncob are formed. Processing plants in this phase allows you to minimize the negative impact of stress, which in turn allows you to form corncob with an increased number of grains at the cellular level.

The third spraying

The third spraying is carried out optionally, at the discretion of the agronomist, at the end of the exit phase into the tube and before the phase of throwing out the panicles at the rate of 2 l/ha. This treatment allows you to increase the mass of grains in the cob and helps plants to deal with stressful situations.

The drug is recommended to be used, including preventatively, to relieve stress on plants due to drought, other adverse events, as well as simultaneously with the introduction of chemical plant protection products, mineral fertilizers. At the discretion of the agronomist, depending on the condition of the plants and climatic conditions, in the case of using the preparation, it is possible to reduce the use of mineral fertilizers by 30-50% of the usual application rate.

With additional treatments, 2-3 liters of the preparation per hectare are used. Treatments are carried out no more than once every 10-12 days. Restorative (resuscitation) measures with the use are carried out under the supervision of an agronomist for plant protection.

Sunflower

Plant cultures	Processing periods	Doses and method of application	Recommended concentration of the solution
Sunflower	Seeds (when etching)	3 liters per 1 ton of seeds	1:10-1:20
	Phase 2-4 pairs of real leaves	Spraying 5 l/ha	1:200
	From the beginning of budding to flowering	Spraying 5 l/ha	1:200

Pre-sowing seed treatment

Before planting, the seed material is processed together with etching at the rate of 3 liters of the preparation per 1 ton of seeds. Usually etching is carried out with an aqueous solution with a concentration from 1:10 to 1:20. Such treatment is necessary for better seed germination, plant development, accumulation of oil content and resistance to diseases and pests. The treatment can be carried out in conjunction with protectants.

The first spraying

The first spraying of the preparation is applied in the phase of the second-fourth pair of real leaves, at the time of completion of the formation of the rudiments of all stem leaves, flower beds, baskets of flower tubercles, at the rate of 5 l/ha. This treatment contributes to the formation of a large number of seeds - generative organs of sunflower.

The second spraying

The second spraying of the preparation is carried out from budding to flowering, at the time of the growth of the flower basket, the formation of pollen and germ sac, at the rate of 5 l/ha. Such spraying contributes to an increase in the mass and oiliness of the seeds. The preparation is recommended to be used, including preventatively, to relieve stress on plants due to drought, other adverse events, as well as simultaneously with the introduction of chemical plant protection products, mineral fertilizers.

At the discretion of the agronomist, depending on the condition of the plants and climatic conditions, in the case of using the preparation, it is possible to reduce the use of mineral fertilizers by 30-40% of the usual application rate. With additional treatments, 2-3 liters of the preparation per hectare are used. Treatments are carried out no more than once every 15 days.

Restorative (resuscitation) measures with the use are carried out under the supervision of an agronomist for plant protection. For spraying vegetative plants, the concentration of an aqueous solution of the drug is used from 1:300 to 1:400, depending on the agricultural equipment used. The specific doses and timing of application, the number of treatments within the above parameters are determined by a local agronomist-agrochemist, based on the agrophone, the culture of the predecessor, climatic conditions and phenological observations of individual plants.

Cucumbers

To increase the germination of seeds, it is recommended to carry out pre-sowing soaking of cucumber seeds in a diluted preparation. This is especially important when germinating small seeds with low germination energy. The seeds are soaked until they swell completely in a solution of the preparation at room temperature. The solution is prepared by mixing the preparation with water in a ratio of 1:20. The seeds are placed in a solution in a bag or gauze. It can be soaked by pouring the seeds on a tarpaulin or polyethylene. At the same time, it is necessary to pour them well and mix them, then reliably hide them from evaporation. Soaking of seeds can be combined with their etching.

The duration of soaking cucumber seeds is 24 hours

When preparing soil mixtures for growing cucumbers, it is recommended to add vermicompost from 20% to 40% to the soil (1 part of vermicompost is mixed with 3-5 parts of the soil); or Humi Extra-10% (1 part of vermicompost is mixed with 9 parts of the soil).

Picking seedlings

It is recommended to use the solution by mixing the preparation with water in a ratio of 1:30-1:50. The soil prepared for transplanting plants should be watered abundantly beforehand.

When planting seedlings in the open ground, put 100-200 grams of vermicompost or 50-100 grams in each hole. Humi Extra, mix with the ground, water thoroughly and plant a seedling. Water the plants under the root with 100-200 ml of solution, mixing the drug with water in a ratio of 1:30-1:50.

After planting cucumber seedlings, the ground near the plant should be mulched with the addition of vermicompost with a layer of 1-2 cm or an extra layer of 1 cm.

Foliar treatment

A solution is prepared by mixing the preparation with water in a ratio of 1:200, the leaf surface of plants is sprayed.

It is recommended to double foliar top dressing with the preparation. Such treatments are carried out during the period of intensive plant growth and at the beginning of fruit formation. They can be combined with other technological operations: fertilizing with mineral fertilizers and treatment with pesticides. Foliar treatment is carried out at the beginning of budding and during fruiting with a solution, mixing the drug with water in a ratio of 1:200.

During the fruiting period, additional foliar treatment or root fertilizing can be carried out with the preparation. Fertilizing is carried out at intervals of 10-14 days. With root treatment, a solution is prepared by mixing the preparation with water in a ratio of 1:100.

Tomatoes

To increase the germination of seeds, it is recommended to carry out pre-sowing soaking of tomato seeds. This is especially important when germinating small seeds with low germination energy. The seeds are soaked until completely swollen at room temperature. The optimal temperature for germination of tomato seeds is 22-25° C. When soaking seeds, **the use of the preparation is not recommended.**

The seeds are placed in a solution in a bag or gauze. It can be soaked by pouring the seeds on a tarpaulin or polyethylene. At the same time, it is necessary to pour them well and mix them, then reliably hide them from evaporation. Soaking of seeds can be combined with their etching. The duration of soaking tomato seeds is **no more than 10 hours**. When preparing soil mixtures for growing tomatoes, it is recommended to add vermicompost from 20% to 40% to the soil (1 part of vermicompost is mixed with 2-4 parts of the soil).

Picking seedlings. It is recommended to use the solution by mixing the preparation with water in a ratio of 1:60 - 1:100. The soil prepared for transplanting plants should be watered abundantly beforehand.

When planting tomato seedlings, put 100-200 grams of vermicompost in each well, mix with the ground, carefully water and plant the seedling. Water the plants under the root with 100-200 ml of solution, mixing the preparation with water in a ratio of 1:60-1:100. After planting tomato seedlings in the ground near the plant, mulch with the addition of vermicompost with a layer of 1-2 cm .

During the fruiting period, additional foliar or root treatment can be carried out with the preparation.

Foliar treatment. Prepare the solution by mixing the preparation with water in a ratio of 1:300-1:400. The leaf surface of plants is sprayed.

Root treatment. Prepare the solution by mixing the preparation with water in a ratio of 1:150-1:200.

Plant cultures	Processing periods	Doses and method of application	Recommended concentration of the solution
Tomatoes	Unpelleting seeds (during pickling, soaking, bubbling)	3 liters per 1 ton of seeds Soak for 24 hours at a solution temperature of 24-25 °	1:10 или 1:100
	Seedlings: root treatment	The first root treatment in 10-12 days after picking	1:100
		The second - in another 10 days	1:100
	Cultivation: root treatment	The first foliar treatment is 10-15 days after planting in the ground	1:100
		The second - at the beginning of the flowering of the flower brush	1:100
		The third - 12-15 days after the second	1:100
		The fourth - 12 days after the third	1:100
	Foliar treatment*	It is recommended for plants lagging behind in growth, if necessary,	1:200

		spraying can be repeated	
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(*) - processing is carried out at the discretion of the agronomist.

Tobacco

When preparing soil mixtures for the germination of tobacco seeds, add vermicompost from 20% to 40% to the soil (1 part of the vermicompost is mixed with 3-5 parts of the soil).

Picking seedlings. Mix the preparation with water in a ratio of 1:30-1:50. The soil prepared for transplanting plants should be watered abundantly beforehand.

When planting seedlings in the open ground, put 100-200 grams of vermicompost in each hole, mix with the ground, carefully water and plant the seedling. Water the plants under the root with 100-200 ml of solution, mixing the preparation with water in a ratio of 1:30-1:50.

Foliar treatments. A solution is prepared by mixing the preparation with water in a ratio of 1:200, the leaf surface of plants is sprayed.

Three-fold foliar treatment with the preparation is recommended:

1 time –10 days after planting seedlings in the ground;

2 times - 15-20 days after the first treatment (plant height 20-30 cm);

3 times - approximately 30 days after the second treatment.

Foliar treatments of plants can be combined with other technological operations: fertilizing with mineral fertilizers and treatment with pesticides. The use of the preparation allows you to reduce the use of mineral fertilizers and pesticides by 30-50% without the risk of reducing the quality and volume of the crop or even abandon their use.

Fruit crops (apple, pear, peach, apricot, cherry, plum, cherry, cherry plum)

It is intended for pre-sowing processing of planting material and fertilizing during the growing season of fruit crops in order to accelerate the growth and development of plants, increase yields, improve product quality, protect plants under unfavorable growing conditions.

Recommended application regulations:

1. Timing and frequency of treatments:

Processing of plants by vegetation

Apple, pear, peach, apricot, cherry, plum, cherry, cherry plum.

Soaking in solution for 24 hours before planting.

4-fold treatment of trees with a working solution during the growing season:

1st 5-7 days after flowering;

2nd at the beginning of the physiological fall of the ovaries;

3rd 10-15 days after the second;

4th 10-15 days before the fruit harvest.

2. Preparation solutions:

- when soaking seedlings: 100-200 ml of the preparation per 10 liters of water;

- when spraying plants: 25-30 ml of the preparation per 10 liters of water;

- when watering plants: 50-70 ml of the preparation per 10 liters of water.

3. Consumption of the working solution during vegetation treatment:

- when spraying: 1-5 l/tree, depending on the size of the tree;

- when watering: 10 liters per 1-2 meters of plant height. (When used in automatic irrigation systems, the concentration of the working solution can be reduced by 2 times).

When treated with fungicides and insecticides, to reduce the "chemical stress" of plants, it is recommended to add the preparation to the tank mixture. The preparation is compatible with all fungicides, insecticides and herbicides with the exception of copper sulfate.

Strawberries and wild strawberries

Biostimulator Humistar S (hereinafter referred to as the preparation) is intended for processing planting material, as well as for fertilizing during the growth and development of strawberries. The preparation improves the survival rate when planting or transplanting plants, contributing to the rapid growth and development of both the root system and plants as a whole.

When soaking the roots of seedlings in the solution of the preparation, its rooting reaches 96%. Soaking the roots of seedlings should be carried out in an aqueous solution of the preparation : 0.5 liters of the preparation per 10 liters of water for 12 to 24 hours before planting.

Treatment with the preparation **during the growing season** provides plants with full nutrition and allows you to improve the quality of berries and get a yield increase of up to 25%.

Recommended processing times:

1st in the phase of the beginning of vegetation;

2nd before flowering;

3rd in the berry filling phase;

4th after harvest.

Autumn treatment with the preparaton dramatically increases the winter hardiness of plants, promotes the development of the root system, the accumulation of nutrients and increases the yield of the next year to 40 percent or more.