Phitospectr™

INNOVATINVE PRODUCT GUARANTEEING SUCCESS

GREEN PLANTS.UA

INNOVATION AGRICULTURE COMPANY

The idea of incorporating the company was based on a huge desire to make a personal contribution to the development of our agricultural country.

The opportunity to help modern agricultural producers cope with new challenges of climate change, increase tolerance to stress and improve immune system of plants, soil fertility, quality indicators of cultivated products, reveal the potential of plants, reduce costs per hectare, increase yields!

The company's activity is aimed at finding unique products of biological origin, which will assist in overcoming negative factors in cultivating crops, increasing yields and profits of Ukrainian agricultural companies.

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GROWING AGRICULTURAL CROPS IN MODERN CONDITIONS

Existence of economic problems in agricultural business, as well as rapid climate change (lack of snow cover, low rainfall, temperature changes in the early stages of organogenesis), soil degradation and erosion, reduced fertility, accumulation of pesticides in the soil, monoculture production, high cost of cultivated products, low yields – make agribusiness one of the most risky activities depending on many external factors.

To obtain the planned yield of agricultural products, agricultural producers implement in their technology:

- **Modern cultivars and hybrids of agricultural crops**
- **Progressive farming systems aimed at accumulating moisture reserves**
- **Use of modern plant protection products**
- **Advanced plant nutrition systems**
- **Innovative biological plant growth stimulators**

Organic plant growth stimulators – products of combined effect composed of the most important biologically active substances. They usually contain humic acids, amino acids, vitamins, peptides, enzymes, plant proteins, polysaccharides and a complete set of microelements. Effect of biologically active substances that are part of biostimulants is associated with increased resistance to biotic and abiotic stresses affecting the plant, stimulating the plant's immune system and developing soil microorganisms, improving soil fertility, increasing quantity and quality of yields.

Plant growth regulators are playing an increasingly prominent role in agriculture stimulating and boosting the immune system, ensuring the quality of yield, allowing the application of fertilizers and chemicals in smaller quantities, and so on. Growth regulators are more likely to be named growth stimulators because they affect plants when they need to accelerate or, conversely, slow down their germination or growth, delay flowering, reduce fruit fall during the preharvest season.

It is well known that plants have hormones that are responsible for seed germination, flowering and fruit ripening – these are phytohormones. In addition to the natural phytohormones present in each plant, a number of synthetic analogues of these substances have been created and actively introduced into the agricultural industry, which encourage fruits to ripen as soon as possible and to improve the quality of the crop.

TYPES OF PHYTOHORMONES AND THEIR IMPORTANCE

The plant industry divides phytohormones into six types. Three of them can be named growth stimulators:

- auxins
- cytokinins
- gibberellins

Other hormones are inhibitors designed to cause short-term inhibition of plant growth.

Each type of phytohormone affects plants in its own way.

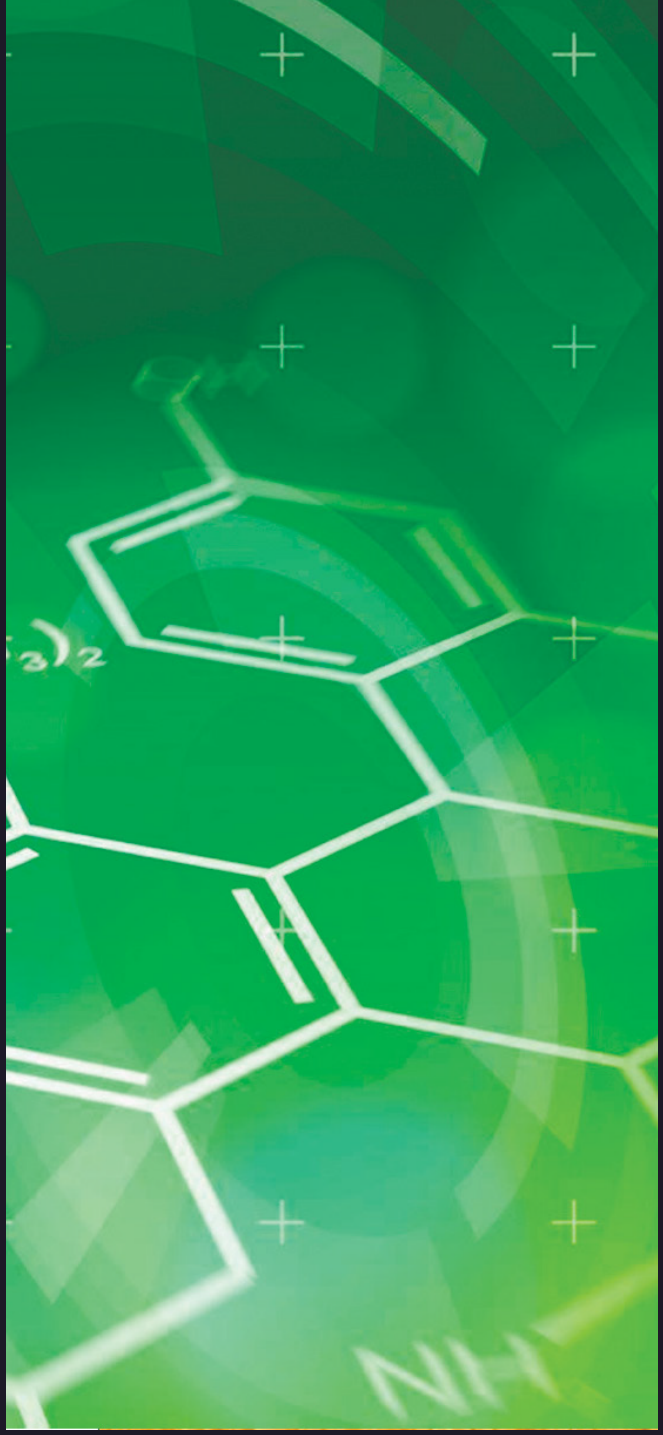
- Auxins help root development and distribute useful substances in plants, are responsible for shoots and fruits.
- Cytokinins affect sprout development and cell division.
- Gibberellins help plants to develop and adapt to a new environment, to survive in adverse conditions.

IMPORTANCE OF PLANT GROWTH STIMULATORS, NECESSITY OF THEIR APPLICATION

In the modern industrial crop production it is impossible to do without products that ensure optimal growth and development of crops. Plant growth stimulators are able to trigger and regulate various physiological programs of plants.

Once in the plant, growth stimulators are included in the metabolic process, they affect the activity of biochemical processes and make the plant more viable, and its resistance to adverse natural conditions increases. In addition, photosynthesis, yield and product quality increase.

Organic stimulators and regulators are products that contain biologically active substances (humic, fulvic acids, amino acids, vitamins, peptides, hormone precursors, enzymes, proteins, polysaccharides and other active compounds, as well as microelements). They promote cell division, laying of new buds, shoots and generative organs, which accelerates the growth and development of plants, thereby increasing the qualitative and quantitative indicators of yield.



MAIN APPLICATION OF BIOLOGICAL STIMULATORS

Seed treatment – uniform seedlings, plants grow faster, have a stronger root system, better resistance to diseases and pests, adapt more quickly to the effects of negative environmental factors.

Foliar treatment in the vegetation period is a natural way to increase resistance to stress, improve the immune system of plants, increase the quality of cultivated products and achieve an increase in yield by 20-40% and, accordingly, the profit per hectare.

Thanks to biological growth stimulators, agricultural enterprises today have a unique opportunity to maximize and realize the full natural potential of crops.

The company offers the agricultural market a unique, innovative, multifunctional Phitospectr product – a plant growth regulator having anti-stress, protective and stimulating effect, which improves the immune system of plants, protects against biotic and abiotic stresses that affect the plant, stimulates the development of soil microorganisms. Phitospectr also increases soil fertility, quality indicators of cultivated products, reveals the genetic potential of plants, which allows increasing the yield of agricultural crops and multiply the profit per hectare and the funds spent for the product.

Phitospectr producing country – Canada.

- INNOVATIVE
- SOPHISTICATED
- MULTIFUNCTIONAL
- HIGHLYCONCENTRATED
- COMPLEX
- BALANCED
- PLANT GROWTH REGULATOR
- ANTISTRESSANT
- WITH PROTECTIVE AND STIMULATING EFFECT
- OF BIOLOGICAL ORIG

Purpose of Phitospectr:

- Innovative solution to improve stress resistance and immune system of plants
- Protection against biotic and abiotic factors affecting plants
- Helps increase soil fertility and quality indicators of cultivated products
- Increases productivity and yield of plants by an average of 20% per crop

Phitospectr™

COMPOSITION

- Made from vegetable raw materials
- Contains Yucca Shidiger plant extract and seaweed humus
- Yucca Shidiger plant extract is obtained from shredded particles of the plant by cold pressing technology
- No chemical solvents are used in the production process

Contains a high concentration of steroid glycosides with a universal anti-stress effect mechanism

- Is a natural wetting agent – adjuvant
- Non-toxic to humans and the environment (hazard class IV)

Contains a complex of biologically active substances (more than 60):

- Carbohydrates **(including steroid glycosides)** – 27-30%
- Polyphenols with flavonoid structure, which have an antioxidant effect, they are natural "traps" of free radicals – a direct anti-stress effect

- **Macro- and microelements in chelated form:** potassium, nitrogen, sulfur, copper, magnesium, calcium, strontium, sodium, phosphorus, silicon, lead, chromium, manganese, boron, iron, nickel, barium, selenium, etc.

- Auxins
- Alginic acid
- Betaine, cytokinins, saturated and unsaturated carboxylic acids, mannitol, gibberellins, proteins, fats
- Vitamins: A, C, E, group B
- Basic organic acids: humic, fulvic, ulminic

The most important components containing the extract of Yucca Shidiger plant are steroid glycosides:

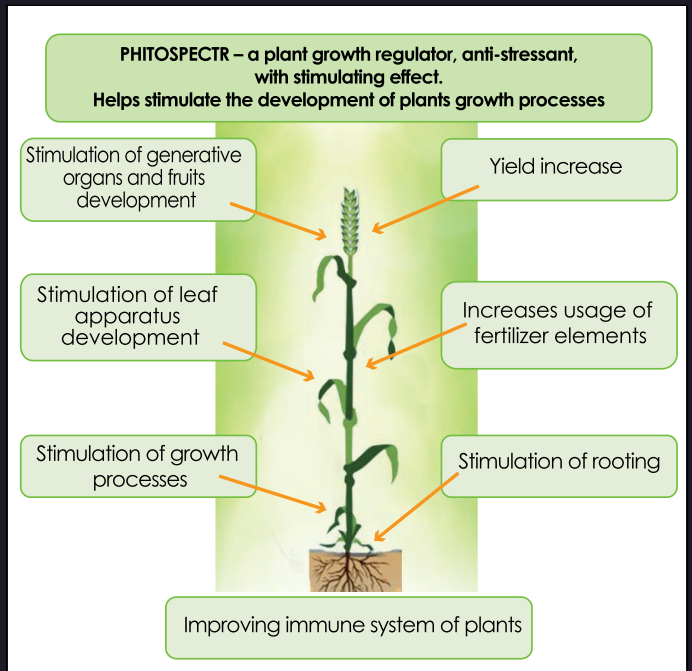
• Soft nonionic surfactants with reactive groups (traps) of reactive oxygen species and free radicals
• Play a crucial role in the adaptation of plants to environmental conditions, in overcoming stressors of biotic and abiotic origin
• Being built into the cell membrane:
- change its permeability
- promote transmembrane delivery of nutrients
- ensure the inclusion of nutrients in intracellular synthesis
• Launch the processes of cellular regulation of natural, protective and growth of active mechanisms of plants, redox system and phytohormones
• Increase the natural immunity and stress resistance of plants to biotic and abiotic factors – systemic acquired resistance

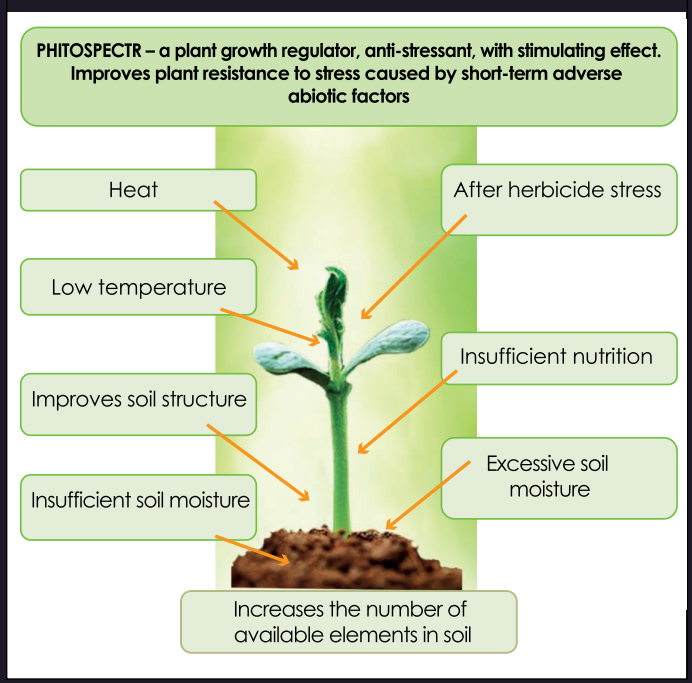
How Phitospectr works in a plant

- Membrane-active properties of the product:
  - Promotes activation of intracellular processes
  - Provides the inclusion of nutrients in intracellular synthesis
  - Promotes transmembrane transmission
- Initiates the processes of cellular regulation of plant mechanisms
  - Natural anti-stress
  - Growth activating
  - Immunostimulanting
- Increases pathogenetic resistance
- Activates photosynthesis, protein-nucleic and hormonal metabolism
- Participates in formation and strengthening of the plant's antioxidant system
- Boosts the plant's immune system

How Phitospectr works to improve the soil

- Stimulates the development of soil microorganisms
- Increases moisture saturation and moisture retention in soil
- Improves soil structure
- Enhances the formation of humus
- Increases aeration in the root layer
- Increases the amount of available micronutrients in soil





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PRODUCT APPLICATION

PHITOSPECTR is used for treating all types of crops and soil.

Helps increase the activity of the immune system of plants: fungicidal, antibacterial and antiviral. Compatible in tank mixtures with pesticides.

Increases the effectiveness of agrochemicals, which reduces the applied doses (by 20-30%).

Methods of product application:

Pre-sowing treatment of crop

seed material both separately and in a tank mixture with fungicides, insecticides and other plant protection products. Increases the ability to obtain uniform friendly seedlings, faster plant development and a strong root system. Improves resistance to diseases and pests, adaptation to the effects of negative environmental factors.

Foliar treatment by classical and aviation methods.

The main advantage of classical foliar treatment is fast delivery of vital nutrients in the early stages of plant organogenesis. In the main phases of plant development, as well as in case of slow growth due to stress associated with adverse weather conditions, herbicide stress, etc.

The advantages of aircraft treatment are the absence of losses due to damage caused by field equipment, high productivity of the product in the late stages of plant development.

Treatment by the product with the main mineral fertilizers from N: P: K group with their subsequent use in the nutrition of crops. The product is added in the granulation process. Compatible with any type of fertilizer.

APPLICATION SPECIFICATIONS

Mother liquor must be used when Phitospectr is applied both in seed treatment process and in foliar application.

Norm when processing seed material – 5 ml/t

Prepare the mother liquor: add 45 ml of water into 5 ml of the product and mix it well.

Prepare the working solution: dissolve the prepared 50 ml of mother liquor in 2-2.5 liters of water.

Take 2.0 - 2.5 l of the working solution of Phitospectr for 1 ton of seeds, add a poisoner according to the instructions for its use per 1 ton of seeds, add water to increase the volume to 10 liters, treat the seeds according to the regulations.

Scheme of Working Solution Preparation when Applied Foliarly			
Water consumption rate 1 ha	**Phitospectr consumption rate per1 ha**	**Preparation of mother liquor**	**Preparation of working solution**
100	12.5	add 110 ml of water into 12.5 ml of the product	Dissolve the mother liquor in 2-2.5 liters of water , mix it well and pour into mixer or plant sprayer
150	20	add 180 ml of water into 20 ml of the product	
200	25	add 225 ml of water into 25 ml of the product	
250	30	add 270 ml of water into 30 ml of the product	

SEED TREATMENT

Pre-sowing seed treatment is the most effective way to increase crop yields.

When Phitospectr is applied, plants receive all the necessary vital components at the earliest stages of development.

Due to the balanced multifunctional complex of highly concentrated components of biological origin (it contains more than 60 of them), which are part of Phitospectr, seeds resemblance and germination energy increases, root system formation improves, seed viability in adverse weather conditions retains longer, frost resistance of crops improves due to intensive accumulation of sugars.

The main advantage of foliar treatment is the rapid delivery of vital nutrients in the early stages of plant organogenesis. In the main phases of their development, as well as when growth slows down because of stress due to adverse weather conditions, herbicide stress, etc.

In order to save production costs, it is recommended to use the product in tank mixtures together with fungicides, insecticides, fertilizers, etc. The more plants are treated , the better the effectiveness of the product will be.

Due to steroid glycosides, which are part of the product's active substance, there is a change in the permeability of the cell membrane, which allows nutrients to penetrate more actively into the cell, and acting as triggers (signaling substances) to initiate cellular regulation of natural defense and growth mechanisms. Immunity and availability of microelements increases significantly. Stability and ability to restore vegetation after stress is improved, decline in vegetative development caused by climatic or pesticidal effects is reduced. Yields and quality of cultivated products increase.

RECOMMENDATIONS FOR USE				
Pre-sowing treatment of seeds				
Cereals, legumes, industrial crops	5 ml/t		Seed dressing before sowing	
Foliar treatment of plants				
Groups and crops	Multiplicity of treatments	Pouring rate of the working solution, l/ha	Application rate, ml/ha	Application phase
Cereal crops (spring and winter barley)	1	150-250	20-30	I - budding phase, booting phase
Cereal crops (spring and winter wheat, oats, millet, winter rye, corn for grain)	2	150-200	20-25	I - budding phase II - booting phase
Corn	2	150-250	20-25	I - phase of 3-5 leaves II - from phase 6 to 9th leaf
Industrial crops (sunflower, rapeseed, winter tayar)	3	150-250	20-30	I - phase of obtaining seedlings II - phase of 2-8 pairs of real leaves III - in the period from the beginning of budding to flowering
Sunflower	3	150-250	20-30	I - phase of 2-4 pairs of real leaves II - phase of 6-8 pairs of real leaves III - in the phase from the beginning of budding (asterisk) to flowering
Winter rape	3	150-250	20-30	I - from the phase of obtaining seedlings to 2-4 pairs of real leaves II - restoration of vegetation III - phase from the beginning of budding to flowering
Sugar beet	2	150-200	20-25	I - phase of closing leaves in rows II - phase of closing leaves in interrows
Legumes (soy, peas, etc.)	3	150-250	20-30	I - phase of obtaining seedlings before the formation of 2-3 trifoliate leaves II - from the stemming phase to the beginning of budding III – phase of the beginning of flowering
Fruit crops (apple, etc.)	3-5	1000	100-125	I - in the bud opening phase II - in the rose bud phase III - after flowering IV - fruit development V - in 14 days
Grape	3-5	1000	100-125	I - before flowering II - after flowering III - in the phase of the beginning of the growth of berries IV- in the phase of closing of berries in a cluster V - berries browning
Berry bushes (currant, etc.)	3-5	500-600	50-60	I - before flowering II - after flowering III - in the phase of the beginning of berries growth IV V - in 14 days
Strawberries	2	400	40	I - when the growing season resumes II - at the beginning of flowering
Vegetable crops (cucumbers, tomatoes, carrots, cabbage, etc.)	1-2	150-250	20-25	I - in phase of 2-6 pairs of real leaves II – in 15 days after the first treatment
		400	40	
Fruit crops (watermelon, melon, pumpkin)	2	150-250	50	I - in the phase of 2-4 pairs of real leaves II - at the beginning of flowering
Decorative plants (boxwood, etc.)	2-3	500-600	50-60	I - before budding II, III - in 15 days (for flowers) For non-flowering plants, three treatments in the first half of the growing season with an interval of 15 days

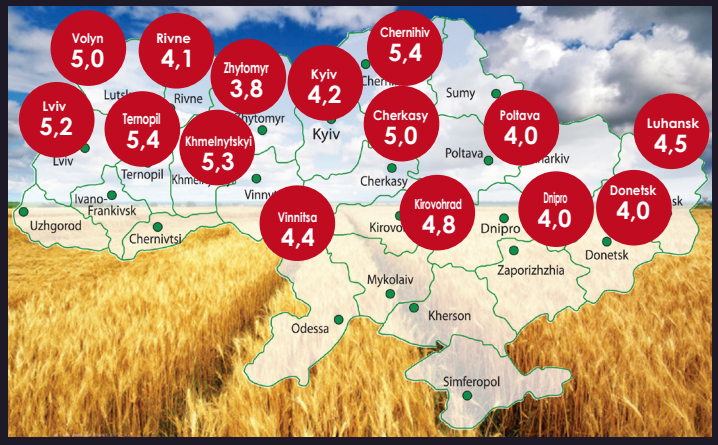
The rate of Phitospectr application depends on the rate of water outflow (*1.25 ml of concentrate per 10 l of water)

For the most effective overcoming of biological and abiotic factors, it is recommended to apply Phitospectr in the early stages of organogenesis

Increase in winter wheat yield in 2020-2022

When Phitospectr was applied to winter wheat in different soil and climatic areas of Ukraine, the average increase in yield was more than 4.2 centners/ ha, which allowed farms to obtain additional economic profit – more than 600% of the funds spent on the product.

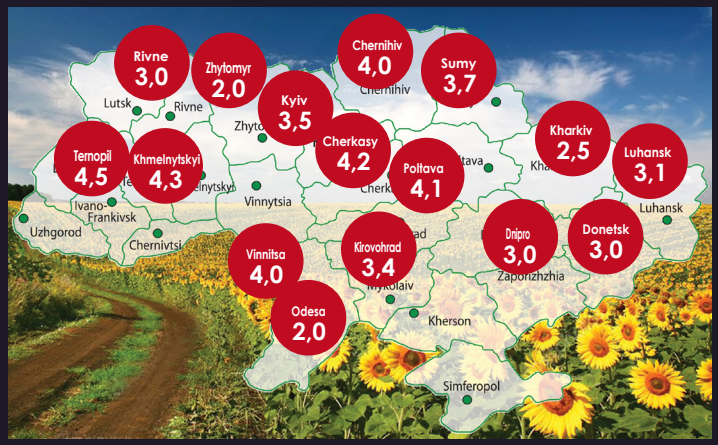
Years	Average Increase, centneres/ha	Selling Price, UAH/centnere	Phitospectr Price, UAH/ha	Net Profit, UAH/ha
2020	4.0	600.0	300	2,100.0
2021	4.2	700.0	300	2,640.0
2022	4.5	700.0	400	2,750.0
Average for 3 years	4.2	665.0	400	2,393.0



Increase in sunflower yield in 2020-2022

When Phitospectr was applied to sunflower in different soil and climatic areas of Ukraine, the average increase in yield was more than 3.3 centners/ ha, which allowed farms to obtain additional economic profit – more than 1,250% of the funds spent on the product.

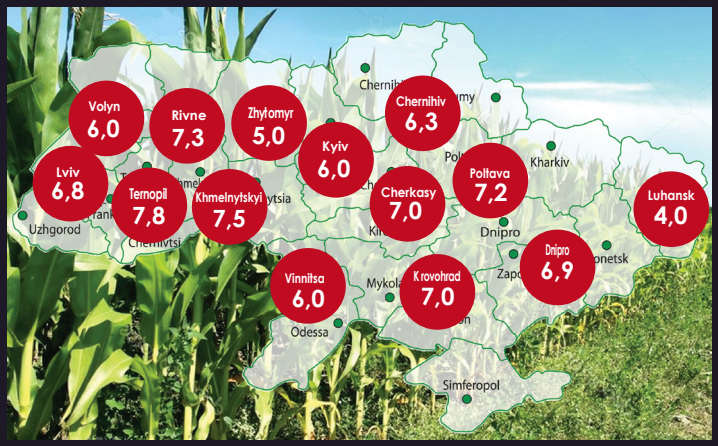
Years	Average Increase, centneres/ha	Selling Price, UAH/centnere	Phitospectr Price, UAH/ha	Net Profit, UAH/ha
2020	3.0	1,650.0	300	4,650.0
2021	3.3	1,800.0	300	5,640.0
2022	3.5	1,600.0	400	5,200.0
Average for 3 years	3.3	1,680.0	400	5,144.0



Increase in corn yield in 2020-2022

When Phitospectr was applied to corn in different soil and climatic areas of Ukraine, the average increase in yield was more than 6.4 centners/ha, which allowed farms to obtain additional economic profit – more than 1,000% of the funds spent on the product.

Years	Average Increase, centneres/ha	Selling Price, UAH/centnere	Phitospectr Price, UAH/ha	Net Profit, UAH/ha
2020	6.0	690.0	300	3,840.0
2021	6.4	750.0	300	4,500.0
2022	6.9	700.0	400	4,430.0
Average for 3 years	6.4	710.0	400	4,144.0



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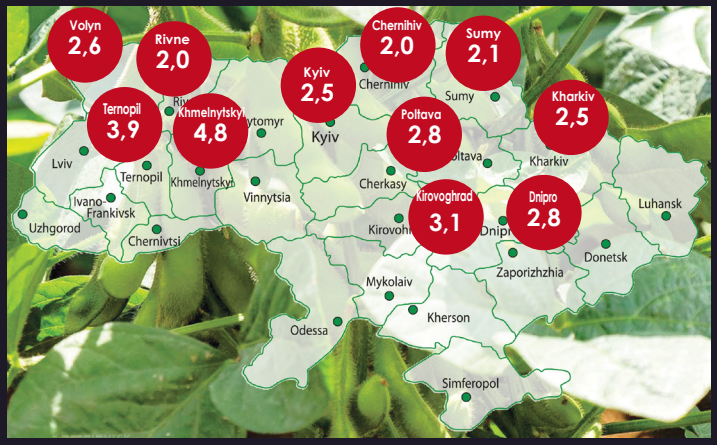
Increase in soybeans yield in 2020-2022

When Phitospectr was applied to soybeans in different soil and climatic areas of Ukraine, the average increase in yield was more than 2.4 centners/ ha, which allowed farms to obtain additional economic profit – more than 750% of the funds spent on the product.

Years	Average Increase, centneres/ha	Selling Price, UAH/centnere	Phitospectr Price, UAH/ha	Net Profit, UAH/ha
2020	2.0	1,700.0	300	3,100.0
2021	2.4	1,450.0	300	3,180.0
2022	2.9	1,150.0	400	2,935.0
Average for 3 years	2.4	1,433.0	400	3,040.0



EFFICIENCY OF USING PHITOSPECTR

- Improves the immune system of plants
- Stimulates natural, natural-protective reactions of plants
- Increases the plant's ability to overcome stressful conditions
- Reduces the impact of biotic and abiotic factors on plants
- Increases the effectiveness of chemicals in tank mixtures
- Stimulates plant growth and development
- Increases natural fertility of soil
- Increases productivity and reveals potential of plants
- Increases quality and yield of cultivated products
- Reduces costs per hectare
- Multiplies profits

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