

**UKRAINIAN
BIOTECHNOLOGIES**

Microbial preparations for agriculture

BTU-CENTER: Microbial preparations are technologies of the future!

BTU-CENTER Company is a Ukrainian manufacturer of **microbial and enzyme products for agriculture**. It produces products for plant nutrition and protection, soil recovery, biological product for cattle farming, and others. In general, we have developed over 60 biological products. BTU-CENTER products are allowed in **organic agriculture**: this is confirmed by Organic Standard certificate (recognized in the EU).

Fertile soil, healthy and rich harvest is our big goal. High-skilled agronomists, biotechnologists, biochemists of the country work to bring it to life. Our agronomists provide free consultations and, if necessary, develop cultivation technologies, taking into account all farm features. BTU-CENTER can produce **10 000 tonnes of biological products per year**. More than **4 mln ha of arable land** are treated with BTU-CENTER products. BTU-CENTER has its own enterprise-based production, logistic park and R&D center – The Institute of Applied Biotechnology.

BTU-CENTER in figures

- **One of the 25% largest producers** of the world biological products industry
- **The largest producer and exporter** of microbial preparations in Ukraine
- Has a broad portfolio of **64 products** (70% - based on microorganisms)
- More than **1000 scientific** and field studies annually
- More than **20 years expertise** in field crops, horticulture and covered soil

BTU-CENTER products are presented in 17 regions around the world



- Austria
- Benelux
- Bulgaria
- Georgia
- Hungary
- Germany
- Kazakhstan
- Kyrgyzstan
- Lithuania
- Moldova
- North Macedonia
- Poland
- Romania
- Serbia
- Slovakia
- Turkey
- Ukraine

BTU-CENTER is the only Ukrainian company that became an official Member of the International Biocontrol Manufacturers' Association (IBMA).

In local markets, BTU-Center cooperates with companies with most expertise in organic farming. To fulfill the consumers' orders comprehensively and timely, we thoroughly oversee every stage of development and manufacture, from maintaining the depository of most effective strains to specially equipped storage and transport.

We undertake trials of our products efficiency in different soil and climate conditions, in combination with other chemical and biological substances: thus we can recommend complex and customized solutions for all kinds of farms and crops.

Production	The Institute of applied biotechnologies	Consultancy office	International activity
<ul style="list-style-type: none"> • Museum of strains, selection • Manufacturing and R&D laboratories • 4 production lines, industrial and small packaging • Logistics park and cooling warehouses 	<ul style="list-style-type: none"> • R&D: development and innovations introduction • Studying of efficiency in various agro climatic conditions and compatibility with plant protection products and fertilizers • Diagnostics of seeds, plants, soil • Cooperation with Ukrainian and foreign scientific institutions 	<ul style="list-style-type: none"> • Development and adaptation of technical solutions for organic and integrated farms • Agronomical support of the use of biological products • Marketing • Raising awareness about biotechnology 	<ul style="list-style-type: none"> • Research and registration of biological products abroad • Participation in international events, membership in associations • Support and development of the partner network

Scientific approach at each stage

BTU-CENTER is a company with more than 24 years of scientific studies and effective solutions in the sphere of biological plant nutrition and stimulation, soil recovery and biocontrol. Every biopreparation contains strains of microorganisms carefully selected from our own museum.

HOW DOES IT WORK?



First, we carry out laboratory researches: we select the most active strains of microorganisms, and test their combination in different concentrations. As a result, we select several the most effective combinations and pass them on for testing to research institutions in different regions. At this stage, independent microbiologists and biochemists deal with them. Where the research result is satisfactory, we send the agent for field experiments. To choose most effective samples, we explore the models on various types of soil and in different climatic conditions. If we realize that something can be improved, we send the agent for fine-tuning to our laboratories.

During field experiments, we test the effective application rates, modes and phases of application, analyze various biometric, agrochemical, microbiological indicators, look at the condition of plants and, of course, productivity. After that, we draw the conclusions and dispatch the preparation for registration.

OUR PREPARATIONS ARE SECURE FOR



People



Soil



Bees



Birds and
animals



Water



CONTRACT PRODUCTION
IS POSSIBLE UPON REQUEST.

BTU-CENTER products

WE PRODUCE



BIO-FERTILIZERS

- Mycorrhizae
- Inoculants
- PK-mobilizers
- N-fixators
- Organic-mineral fertilizers



PLANT BIOSTIMULATORS

- Growth activators
- Anti-stressants



BIOCONTROL PRODUCTS

- Biofungicides
- Bioinsecticides



APPLICATION ENHANCERS

- Adhesive agents
- Adjuvants



SOIL RECOVERY PRODUCTS

- Biodestructors of plant residues
- Composting accelerators



CATTLE BREEDING ADDITIVES

- Silage additives
- Fermented feed supplements
- Probiotics



THERE ARE MORE THAN 60 BIOLOGICAL PRODUCTS IN THE BTU-CENTER PORTFOLIO. HERE IS A LIST OF 8 OF THE MOST WIDELY USED.



Azotohelp®/Azotofit®

N-fixator

Active ingredients: nitrogen-fixing bacteria *Azotobacter chroococcum* (titer not less than $1,0 \times 10^9$ CFU/ml).

These bacteria fix elementary nitrogen and break down phosphorus, transfer them to absorbable form and thus improve plant's ability to absorb nutrients via roots and herbs. Plants grow higher and healthier and provide better yield.

Application: pre-sowing seed treatment; root feeding, fertigation; foliar feeding (spraying) of plants during the growing season.



Groundfix®

PK-mobilizer

Active ingredients: strains of *Bacillus*, *Azotobacter*, *Enterobacter*, *Paenibacillus* (titer not less than $0,5-1,5 \times 10^9$ CFU/ml).

Mobilizes phosphorus and potassium from difficultly soluble compounds and fixes nitrogen from the air, thus improving nutrients availability in the soil and increasing effectiveness of mineral fertilizers. It colonizes the soil with beneficial microflora and prevents its deterioration.

Application: seed treatment, row fertilization.



Rizoline®

Inoculant

Active ingredients: nodule-forming bacteria *Bradyrhizobium japonicum*, *Rhizobium leguminosarum*, *Rhizobium leguminosarum*, *Mesorhizobium ciceri*, *Sinorhizobium* sp. (titer not less than $2,0 \times 10^9$ CFU/ml).

Bacteria create symbiosis with legumes, which helps the latter accumulate nitrogen from the air and consume it to stimulate growth and development.

Application: pre-sowing inoculation of seeds of soy, pea and other legumes.



Organic-Balance®

Plant stimulant

Active ingredients: strains of *Azotobacter*, *Bacillus*, *Lactobacillus*, *Enterococcus* und *Paenibacillus* (titer not less than $1,0 \times 10^9$ CFU/ml).

Improves the consumption of nutrients and microelements by the plant, which leads to more strength and vitality of plants, better immunity to stress and evenness ripeness. This makes the crops healthier and the yields larger.

Application: pre-sowing seed treatment, spraying of plants during the growing season.



Ecostern®

Biodestructor of plant residues

Active ingredients: strains of *Bacillus*, *Azotobacter*, *Enterobacter*, *Enterococcus*, and *Trichoderma* (titer not less than $2,5 \times 10^9$ CFU/ml).

Bacteria and fungi contained in the product decompose plant residues, left on the field after harvesting, and colonize the soil with beneficial microflora, which in combination leads to the improvement of soil physical and chemical composition. The soil restores its fertility and is better prepared to bear future yields.

Application: soil treatment.



Componaza®

Composting accelerator

Active ingredients: strains of *Azotobacter*, *Bacillus*, *Lactobacillus*, *Enterococcus*, *Paenibacillus* (titer not less than $1,0 \times 10^9$ CFU/ml).

The product contains bacteria and enzymes that facilitate the decomposition of organic waste. These beneficial microorganisms eliminate odor during composting. Due to favorable microflora and biological activity in the soil, its fertility increases.

Application: soil treatment.



Mycofriend®

Complex mycorrhizal product

Active ingredients: Mycorrhiza fungi, rhizosphere-colonizing and phosphate mobilizing bacteria: strains of *Glomus*, *Trichoderma*, *Streptomyces*, *Pseudomonas*, *Bacillus* and *Enterobacter* (titer not less than $1,0-1,5 \times 10^9$ CFU/ml).

Microorganisms stimulates formation of a beneficial mycorrhiza network in the root zone, which transfers difficultly soluble soil phosphates into consumable form and delivers Nitrogen, Phosphorus, Calcium, Potassium and other nutrients to the root zone. Increases seeds germination and stimulates plant development via stronger roots.

Application: seed treatment, row fertilization, fertigation, treatment of seedlings.



Liposam®

Adhesive agent, adjuvant

Active ingredients: a combination of biopolymers, synthesized by microorganisms.

Enhances the effect of biological and chemical plant protection products by fastening them on the surface of leaves and in the upper layer of soil. Creates a polysaccharide net on the surface of leaves and fruit, which increases plants' immunity to stress factors such as frost and drought.

Application: pre-sowing seed treatment, spraying of plants during the growing season, soil treatment.

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