

A low-angle, upward-looking photograph of a cornfield. The image is filled with vibrant green corn leaves, some in sharp focus and others blurred, creating a sense of height and growth. The sky is a clear, bright blue, and the sun is visible in the upper right corner, casting a soft glow and creating a lens flare effect. The overall composition is dynamic and emphasizes the natural beauty and productivity of agriculture.

SACCO
system
— agrovet

**Our solutions for
agriculture**

Sacco System

Microbial innovator for a sustainable future

For over 150 years, Sacco System has been a benchmark in microbiological innovation. With solid expertise and a forward-looking vision, we research, select, and develop microorganisms that improve the quality of life for humans, animals, and plants.

We are an international group present in more than 110 countries, with the soul of a Family Company: we believe in the value of relationships, work ethics, and innovation as a key driver for building a better world.

With a team of over 70 specialized technicians, 8 production plants, and 4 pilot laboratories, we provide tailor-made solutions for the global biotech market, ensuring top quality, safety, and reliability.

Agro-Vet Solutions

Cutting-edge biotechnology for agriculture and livestock farming

The Agro-Vet division of Sacco System specializes in the development and production of probiotics, raw materials, and customized solutions for the agri-livestock industry.

We support agricultural and livestock companies worldwide with a broad portfolio of ingredients and technological formulations, also collaborating on experimental and research projects to innovate existing products or develop new ones.

Thanks to our advanced agronomic and technological expertise, we produce probiotic microorganisms that undergo rigorous quality control. Each strain is selected through a thorough screening process in laboratory, greenhouse, and field to ensure maximum efficacy throughout the plant development stages.

We offer biostimulant and biocontrol solutions to improve crop yields and promote more sustainable, efficient, and environmentally friendly agriculture.



Nutriliquid

Feed the soil, strengthen the plants: the natural power of fermentation

Fermentation matrix of lactic acid bacteria
Direct plant nutrition and improved soil fertility
Potassium and phosphate solubilization
Humification of soil organic matter
Activation of beneficial soil microorganisms
Reduction of soil-borne pathogens

Improvements in:

- Soil structure
- Nutrient Assimilation
- Resistance to environmental stress

Uses



Liquid fertilizer compatible with all pesticides, fertilizers and herbicides



Adjuvant for PGP microorganisms with booster effect

Application Guidelines



Turf

Dose: 10L/ha
Period: from early winter to late spring.
5 applications



Vegetables

Dose: 5L/ha
Period: at transplant, every 10 days.
3 applications



Soybean

Dose: 10L/ha
Period: pre-sowing, tillering, stem elongation.
2 applications



Winter cereals, rice, rapeseed

Dose: 10L/ha
Period: pre-sowing, tillering, stem elongation.
2 applications



Tree crops

Dose: 10L/ha
Period: vegetative awakening, flowering, fruit set.
3-4 applications



Corn, sorghum, sunflower

Dose: 10L/ha
Period: pre-sowing, tillering, stem elongation.
2 applications

Our strain bank

Sacco has the following industrialized single strains available:

Product	UFC/g
<i>Azospirillum brasilense</i>	5×10 ¹⁰
<i>Azotobacter chroococcum</i>	5×10 ¹⁰
<i>Bacillus amyloliquefaciens</i>	1×10 ¹¹
<i>Bacillus licheniformis</i>	1×10 ¹¹
<i>Bacillus megaterium</i>	1×10 ¹¹
<i>Bacillus pumilus</i>	1×10 ¹¹
<i>Bacillus subtilis</i>	1×10 ¹¹
<i>Bacillus velezensis</i>	1×10 ¹¹
<i>Bradyrhizobium japonicum</i>	1×10 ⁹
<i>Glomus intradices</i>	~ 6200 propagules
<i>Pochonia chlamydosporia</i>	1×10 ⁸
<i>Pseudomonas fluorescens</i>	5×10 ¹⁰
<i>Pseudomonas protegens</i>	5×10 ¹⁰
<i>Pseudomonas putida</i>	5×10 ¹⁰
<i>Sinorhizobium meliloti</i>	1×10 ¹¹

We also have a large strain library available for future industrial development, including:

- *Herbaspirillum frisingense*
- *Methylobacterium* spp
- *Beauveria bassiana*
- *Acinetobacter Rhizospharæ*
- *Streptomyces* spp
- *Chryseobacterium* spp
- *Stenotrophomonas* spp
- *Metharhizium* spp



**Nitrogen-Fixing
Bacteria**



Nitrogen-Fixing Bacteria

- Improve soil fertility
- Reduce the use of synthetic nitrogen
- Promote environmental sustainability
- Support continuous nitrogen supply
- Enhance plant growth and stress resistance
- Improve adaptation to nutrient-poor soils

Azotobacter chroococcum

Free-living, non-symbiotic soil bacterium that forms resistant cysts. In addition to nitrogen, it produces phytohormones and polysaccharides.

Bradyrhizobium japonicum

Symbiotic bacterium specific to legumes. Forms root nodules where efficient nitrogen fixation occurs (e.g., clover, alfalfa, beans).

Azospirillum brasilense

Associative bacterium that colonizes the phyllosphere. Produces nitrogen and phytohormones, stimulates root hair development. UV resistant.

Sinorhizobium meliloti

Symbiotic bacterium specific to legumes. Forms root nodules, highly specific to plants like soybean and chickpea.



Pseudomonas



Pseudomonas

Non-spore-forming bacteria of the rhizosphere and phyllosphere

Promote plant growth

Produce siderophores

Phosphate solubilization

Bioremediation and pollutant degradation

Stimulate plant immune response

Pseudomonas putida

Solubilizes phosphorus, produces phytohormones to stimulate plant growth, highly resistant to salinity stress, used in bioremediation.

Pseudomonas fluorescens

Produces phytohormones and siderophores, solubilizes phosphorus. Antagonistic to fungi, induces plant immune response.

Pseudomonas protegens

Produces phytohormones, solubilizes phosphorus, siderophore production. Induces plant immune response. Antagonistic to fungi and insects.



Bacillus



Bacillus

- Spore-forming bacteria naturally present in soil
- Produce resistant spores, surviving harsh conditions
- Improve soil fertility
- Solubilize nutrients (especially phosphorus)
- Mineralize organic matter
- Increase nutrient availability
- Antagonistic to fungi and oomycetes

Bacillus amyloliquefaciens

Enhances plant immune system, produces biocontrol metabolites. Solubilizes phosphorus, produces auxins.

Bacillus pumilus

Nematostatic effect, enhances root development. Antagonistic to fungi and oomycetes. Solubilizes phosphorus.

Bacillus velenzensis

Activates key enzymes in photosynthesis, stimulates immune defense, solubilizes phosphorus.

Bacillus subtilis

Boosts plant immune system, increases resistance to abiotic stress, antagonistic to fungi and oomycetes. Produces auxins, solubilizes phosphorus.

Bacillus megaterium

Produces auxins, gibberellins, cytokinins. Solubilizes phosphorus. Effective in bioremediation.

Bacillus Licheniformis

Nematostatic effect, promotes root growth, auxin production, phosphorus solubilization.



Fungi



Fungi

Innovative and eco-friendly strategy for plant protection

Soil fertility management

Disease reduction and productivity improvement

Pochonia chlamydosporia

Nematode parasite, particularly of cyst and root-knot types. Enhances plant growth and resistance to root stress.

Trichoderma harzianum

Antagonist of many soilborne pathogens (Fusarium, Rhizoctonia, Pythium, Botrytis). Promotes nutrient uptake and solubilization, enhancing soil fertility.

Glomus intraradices

Mycorrhizal fungus forming symbiosis with plant roots. Improves nutrient and water uptake, promoting growth and environmental stress resistance.



**Services &
3Biotic Hub**

Services



CUSTOM FERMENTATION SERVICE

We offer fermentation services for companies with proprietary strains. We can also isolate desired strains and produce them at scale, up to 40,000 liters.



TAILOR-MADE AGRO SOLUTIONS

We develop customized freeze-dried cultures based on the target claims and cell concentrations requested by clients.



Innovation & Sustainability in Biotechnology

3Biotic Hub is a network of companies - Sacco, Landlab, and Synbiotec - focused on biotechnology, innovation, and sustainability. We study plant physiological responses and microbiome interactions to optimize biofertilizers and biocontrol agents in agronomic systems. Through a multidisciplinary approach, we combine phenotyping, agronomic analysis, biochemistry, microbiology, and molecular biology to provide targeted solutions.

We collaborate with producers, distributors, and research institutes to understand and manage the plant-soil-microbiome balance. Guided by the motto "Knowledge before Application", we support companies in optimizing products and applications, promoting more effective and sustainable agriculture.



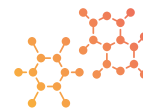
MICROBIOME SEQUENCING

We offer fermentation services for companies with proprietary strains. We can also isolate desired strains and produce them at scale, up to 40,000 liters.



FUNCTIONAL GENOMICS

Evaluation of microbial potential for agro-industrial applications



MICROBIOLOGICAL QUALITY CONTROL

Testing of industrial prototypes, biostimulants, and biocontrol agents



AGRONOMIC EFFICACY TESTING

Performance validation in climate chambers, greenhouses, and open fields



SOIL ANALYSIS

Study of enzymatic activity and nutrients to improve fertility and yield



DESIGN & TECHNICAL SUPPORT

Optimization of microbial inoculant applications and their metabolites to maximize agronomic efficacy



Discover more on
3BIOTIC HUB

Take a Note

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Company

Sacco System heritage in Lactic Acid Bacteria (LAB) traces its roots back to 1948, when Dr. Leo Vesely founded Centro Sperimentale del latte, a pioneer company dedicated in studying of bacteria for human health and children’s nutrition.

Today we are the international biotech hub for food, nutraceutical, and pharmaceutical industries. Operating in over 110 countries worldwide, Sacco System provides its expertise on probiotic products development and offer science based proprietary strains and customized blends, supporting consumer needs.

Our innovative approach covers production, research and development in nutraceutical and pharmaceutical fields, having available three pilot plants, cutting edge technologies and two facilities GMP Pharmaceutical certified. An expertise extends beyond LAB, following the evolving demands of the market. This includes the development, process validation and commercial production of probiotics, postbiotics, Next-Generation bacteria (obligate aerobes and anaerobes strains) and biotherapeutics (BPs).

Quality

Our quality system is extensive and as a confirmation of our strong commitment to quality, Sacco System has achieved the main certifications over the years.

Contact us to discover the best solution for your business!

 info@saccosystem.com

 SACCO SYSTEM

 **SACCO SYSTEM**
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