

7200-Liter Fermenter for the Production of Biotechnological Additives Successfully Commissioned

Biotechnology permanently breaks new grounds in novel natural products, which cannot be discovered with one's naked eye. Bioreactors and fermenters are used to grow microorganisms that provide useful additives and products for plants, animals and human beings. The ABiTEP GmbH in Berlin, Germany, cultivates specific bacteria to produce extra sustainable soil improvers and cleaning detergents. The increasing demand for their products drove ABiTEP to order a brand-new production fermenter suite of bbi-biotech GmbH, to double the company's output with a complete turnkey solution. On September 19th, 2015, the commissioned installation has been presented to partners and clients during an open-door day.

Fermenter for Soil Bacteria Cultivation

Many fungi and bacteria are natural parts of living and healthy soils. These organisms live in close or even symbiotic relationships with plants, e.g. potatoes or ornamentals, and give profit via their extracellular products. The effects can occur in optimized germination, enhanced growth behavior or better varmint resistance. It has been discovered during research on all microorganisms from the soil environment, that there are certain species among the others that are notably important within the soil species composition. Growth trials on small, experimental areas have shown that an addition of selected bacteria could sustainably increase the area yield of the agricultural surface.

The application of the natural soil microorganisms on large agricultural surfaces requires the cultivation of the microorganisms in artificial bioreactors and fermenters. Fermenters create the natural, optimal environmental conditions for each bacteria species as exact as possible and allow producing the required amounts. The application of the concentrated or dried soil bacteria is e.g. done during the seeding process on the fields, where they can evolve their strengthening effects – all without excessive utilization of pesticides or chemical intensive fertilizers.

bbi-biotech designed the new production fermenter for ABiTEP based on proven special process guidelines for soil bacteria demands. The Oxygen regime is based on stirrer control and gas feed rates and allows the production of up to 5,000 liters culture suspension with homogenous and high Oxygen contents. The temperature is precisely controlled via the double jacket, while three additive feed vessels are directly connected to the fermenter to automatically control pH-value and foam building rates. The inoculum is produced in a 100 liter seed fermenter, which has been installed directly next to the main fermenter. The transfer is done through closed piping to ensure aseptic conditions. The whole installation of fermenters, additive vessels and piping is SIP/CIP-able. The automatic supply of clean steam or cleaning chemicals is done via the CIP-installation, which has been supplied by bbi-biotech as well. All technical installation is fully automated and allows GMP-compliant production.

Fermenter Start-up Expands ABiTEP's Production Capacity

The fermenter and its accessory devices have been delivered by bbi-biotech in January 2015. The complex installation went over to normal operational procedures after the successful trial runs now. "We are happy to expand our production capacity with the new fermenter and to continue providing the high quality of our products to our customers." says Dr. Helmut Junge, CEO of ABiTEP GmbH. His partner Paul Beifort completes: "The engineering and design was done in close discussion between our production staff and bbi-biotech's engineers. This customized installation is perfectly integrated into our existing processes." The founding Investitionsbank Berlin was additionally commended for allowing the project grant to bbi-biotech without the obliged tender process. "We already delivered a pilot scale fermenter with 650 liters to ABiTEP in 2011. This system shows gas transfer rates and the related bacteria growth of just under record conditions. The engineering had not been dared to any other biotech companies than us.", explains Bernd-Ulrich Wilhelm, CEO of bbi-biotech GmbH.

About bbi-biotech GmbH

bbi-biotech GmbH develops, manufactures and provides the bioreactors and fermenters of its xCUBIO series for all biotechnological applications. Sophisticated automation tasks in GMP-compliant environment are implemented as well as the cost-efficient refurbishment of existing biosystems and their cultivation vessels. bbi-biotech additionally provides the unique, patented, automatic, aseptic sampling system bioPROBE, which allows to integrate external analytics into Atline control processes in even very sensitive or clean cultivation environments of every type and scale – all without additional staff requirements. General biotech consulting, calibration and training services round the life science portfolio of bbi-biotech GmbH to one thing.

About ABiTEP GmbH

ABiTEP GmbH is a medium-sized biotech company, which produces agro biotic products for both agriculture and horticulture and biological cleaning detergents at the historical industrial center of Berlin Adlershof, Germany. Other active fields of ABiTEP GmbH are contract production and research, as well as the collaboration in versatile R&D-projects for the development of sustainable and modern methods of plant production.

ABiTEP GmbH is active member of the Association of Biological Pesticide Produces Germany/Austria IBMA D/A and is additionally accredited as educational company.

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