

Product improvement with fluidized-bed technology

Working group: Fermentation

When the IFA-Tulln was established in 1994, the Institute for Environmental Biotechnology was equipped with a fermentation pilot plant that enables the development and scale-up of fermentation processes. As a consequence of numerous projects and co-operations with companies the installations could be kept according to the state of the art and can now be used for the production of batches with a size up to 6m³. At the moment the developed products are mostly applied in the agricultural area (animal feed, silage additives, plant protection).

In addition to the existing process chain (fermentation, product separation, and lyophilisation) the acquisition of a fluidized-bed granulation powder-coating equipment offers new possibilities for the processing and formulation of products.

In the course of a project funded by the regional government of Lower Austria, competence in the areas of drying, pelletizing and coating of fermentation products is built up. Besides providing the equipment for develop-

ments in co-operation with industry, the emphasis is on the creation of know-how and the development of licensable or patentable processes.

Within the scope of this project four areas of research are covered:

- Drying, granulation, and coating of living microorganisms
- Drying and coating of enzymes
- Drying and granulation of complex cell components (e.g. yeast extract, cell wall components)
- Drying and coating of food and speciality products

Research is concentrated on processes with living microorganisms, followed by enzymes, whereby the focus lies on feed additives, food and non-food applications.

The challenge is the development of innovative processes for product formulation and the optimization of the interactions between fermentation, concentration of products, drying and formulation.

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