

BIOTECHNOLOGY IN THE NETHERLANDS

Biotechnology in the Netherlands is rapidly expanding. Before 1985 some 20 major companies were involved in biotechnology; this number increased to more than 120 in 1990 (see table 1). Since 1981, the Netherlands has adopted a government policy aimed at creating a climate favorable to investments. The biotechnology stimulation programme comprises various activities, ranging from education through information dissemination, commercial incentives, cooperation and support for newly formed companies.

Biotechnology in the Netherlands is strongly related to main Dutch industries like agro-food, chemical and environmental industries.

The main application areas are:

1. Agriculture
2. Food and Feeds
3. Chemical
4. Environment
5. Health care
6. Equipment

1. Agriculture

World wide, the Netherlands ranks second as exporter of agricultural products; Dutch dairy products, meat, eggs, vegetables, fruits and flowers are particularly well-known.

In the past 15 years biotechnology techniques, for example vitro cell culture techniques used in plant breeding and propagation, developed rapidly.

Also the introduction of somatic cell hybridization and genetic engineering offers exciting potential to improve breeding programs. With genetic engineering techniques, important agricultural traits such as stress tolerance, resistance against pathogens and herbicides, and higher protein yields are introduced to plants.

MOGEN carried out the first field test with transformed potato plants.

Plant breeding and seed companies such as VAN DER HAVE and ZAADUNIE have by now adopted micropropagation techniques as a standard tool to facilitate their operations

2. Food and Feeds

The food production and processing industry is the oldest and largest industry using biotechnological processes.

In terms of expenditure, this sector is the leading market for biotechnical products. Beer, wine and cheese represents more than 75% of the turnover of all biotechnological products.

Several prominent companies and institutes employ biotechnological methods to supply and preserve food. Companies as HEINEKEN, GIST-BROCADES and UNILEVER produce yeast and enzymes for food and detergents on a commercial basis.

But also smaller companies and institutes such as NIZO (Netherlands Institute for Dairy Research) run extensive research programs to improve their production methods and quality of their products.

Research is done on the latest biotechnical techniques, such as genetic engineering, DNA-hybridization and monoclonal antibodies.