

Micronizing with our plants takes place exclusively with compressed air, filtered, dried and oilfree; the absence of mechanical rotating parts guarantees a contamination-free finished product; furthermore, the low exercise temperature during the working procedure allows the micronization of soft and thermolabile substances. The installations are easy to clean, have very low cost of maintenance and useful long-life for at least ten years.

Micro-Macinazione SA employs 20 people, has a capital share of CHF 1 000 000.– and operates in a factory of its own property. From beginning 1995 *Micro-Macinazione SA* will start the micronization of β -lactame products in a new production building, separated from the existing factory and fully dedicated to this processing. The Customers of *Micro-Macinazione SA* are the most reputed Swiss and European Pharmaceuticals Companies.



Figure. CHRISPRO JET-MILL MC 500

Chimia 49 (1995) 139-140
© Neue Schweizerische Chemische Gesellschaft
ISSN 0009-4293

exact requirements of this business. It supports its activities by its own research and develops its own production techniques and patents.

Nuova Linnea SA*

Nuova Linnea is a manufacturer of pharmaceutical ingredients, with a difference: its products are derived from raw materials of botanical origin. It is a specialized company, employing over 60 people, and is located in the Canton of Ticino, Switzerland.

Brief History

The company started out under the name *Linnea SA* in 1980. It was established in Riazzino, still its present location, on a site which had previously housed a small fine chemicals company, and which provided some 'seed' technology for the new enterprise. Additional investment in modern equipment, technology, and human resources enabled the company to develop during the 1980's. However, it was not until the company, then renamed *Nuova Linnea*, was taken over by a multi-

national group in 1990 that it realized its true potential. Its nucleus of skilled scientists and technicians was expanded, and additional resources were put into commercial and technical activities. The years since then have been marked by rapid growth and success in the marketplace.

Specialized Field

Nuova Linnea is at the forefront of its field in Switzerland. Its speciality is the recovery of pharmacologically-active compounds that are found in nature, starting from raw materials that sometimes are only obtainable in remote parts of the world. In many cases these compounds are highly sensitive to industrial conditions, and great care must be taken during processing in order to protect their therapeutical properties. The compounds themselves are produced either in their purified form, or they are transformed by chemical synthesis into derivative ('semi-synthetic') products, depending on the requirements. *Nuova Linnea* is equipped with up-to-date equipment capable of meeting the

Rigorous Quality Control

Active compounds of the type produced by *Nuova Linnea* are found only in minute quantities in their natural state, so the manufacturing operations must be designed to keep track of the compounds at low concentrations as they proceed through the process. The quality and quantity of the products must be monitored in detail at every step, and this function is carried out by the company's Quality Control department. Being a Swiss company, it already has the traditional reputation for Swiss quality to uphold. In addition it operates to the internationally-recognized GMP (Good Manufacturing Practice) standards set by the United States Food and Drug Administration.

To *Nuova Linnea*, quality is paramount. A team of well-qualified and experienced people ensures that its customers receive only the highest quality products.

Future Potential

Many of the world's most reliable medicines have been derived from natural sources and indeed, it is estimated that

* Correspondence: *Nuova Linnea SA*
Via Cantonale
CH-6595 Riazzino (Locarno)

Micronizing with our plants takes place exclusively with compressed air, filtered, dried and oilfree; the absence of mechanical rotating parts guarantees a contamination-free finished product; furthermore, the low exercise temperature during the working procedure allows the micronization of soft and thermolabile substances. The installations are easy to clean, have very low cost of maintenance and useful long-life for at least ten years.

Micro-Macinazione SA employs 20 people, has a capital share of CHF 1 000 000.– and operates in a factory of its own property. From beginning 1995 *Micro-Macinazione SA* will start the micronization of β -lactame products in a new production building, separated from the existing factory and fully dedicated to this processing. The Customers of *Micro-Macinazione SA* are the most reputed Swiss and European Pharmaceuticals Companies.



Figure. CHRISPRO JET-MILL MC 500

Chimia 49 (1995) 139-140
© Neue Schweizerische Chemische Gesellschaft
ISSN 0009-4293

exact requirements of this business. It supports its activities by its own research and develops its own production techniques and patents.

Nuova Linnea SA*

Nuova Linnea is a manufacturer of pharmaceutical ingredients, with a difference: its products are derived from raw materials of botanical origin. It is a specialized company, employing over 60 people, and is located in the Canton of Ticino, Switzerland.

Brief History

The company started out under the name *Linnea SA* in 1980. It was established in Riazzino, still its present location, on a site which had previously housed a small fine chemicals company, and which provided some 'seed' technology for the new enterprise. Additional investment in modern equipment, technology, and human resources enabled the company to develop during the 1980's. However, it was not until the company, then renamed *Nuova Linnea*, was taken over by a multi-

national group in 1990 that it realized its true potential. Its nucleus of skilled scientists and technicians was expanded, and additional resources were put into commercial and technical activities. The years since then have been marked by rapid growth and success in the marketplace.

Specialized Field

Nuova Linnea is at the forefront of its field in Switzerland. Its speciality is the recovery of pharmacologically-active compounds that are found in nature, starting from raw materials that sometimes are only obtainable in remote parts of the world. In many cases these compounds are highly sensitive to industrial conditions, and great care must be taken during processing in order to protect their therapeutical properties. The compounds themselves are produced either in their purified form, or they are transformed by chemical synthesis into derivative ('semi-synthetic') products, depending on the requirements. *Nuova Linnea* is equipped with up-to-date equipment capable of meeting the

Rigorous Quality Control

Active compounds of the type produced by *Nuova Linnea* are found only in minute quantities in their natural state, so the manufacturing operations must be designed to keep track of the compounds at low concentrations as they proceed through the process. The quality and quantity of the products must be monitored in detail at every step, and this function is carried out by the company's Quality Control department. Being a Swiss company, it already has the traditional reputation for Swiss quality to uphold. In addition it operates to the internationally-recognized GMP (Good Manufacturing Practice) standards set by the United States Food and Drug Administration.

To *Nuova Linnea*, quality is paramount. A team of well-qualified and experienced people ensures that its customers receive only the highest quality products.

Future Potential

Many of the world's most reliable medicines have been derived from natural sources and indeed, it is estimated that

* Correspondence: *Nuova Linnea SA*
Via Cantonale
CH-6595 Riazzino (Locarno)

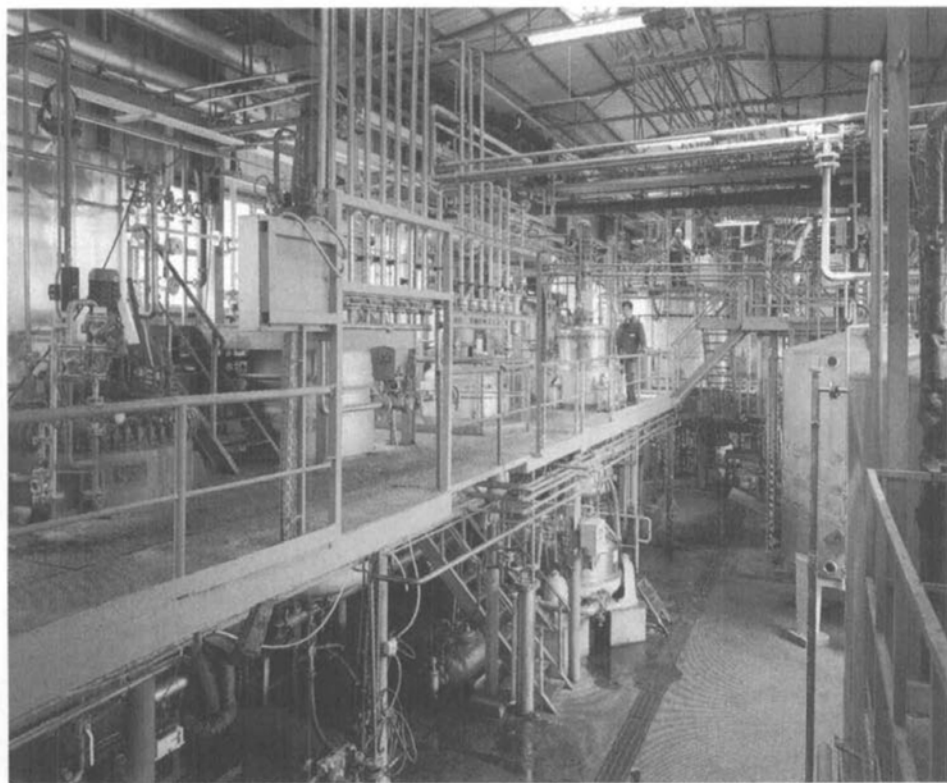


Figure. View of the main extraction unit

over a quarter of today's pharmaceuticals are of natural origin.

For many reasons, there now is renewed interest among the medical profession and the population at large in this class of products. *Nuova Linnea* intends to retain its leadership in this field and to contribute to its full development.

Expanding Market

Through its Research and Development department, *Nuova Linnea* provides back-up for its full range of products. It also offers joint development with client companies for new products and derivatives of existing products. The company's commercial relations have expanded greatly in recent years, not just in Europe where it might be expected, but also in North and South America, Africa, and especially in Asia. *Nuova Linnea* is pleased to count among its clients some of the world's leading pharmaceutical companies.

Chimia 49 (1995) 140-141
© Neue Schweizerische Chemische Gesellschaft
ISSN 0009-4293

Pharmanalytica SA*

An Offshoot of Sandoz Grown into an Analytical Centre of the Group

Location

Pharmanalytica SA, an affiliate of the *Sandoz* group, is located in Locarno (Switzerland) near the Lido on the bank of Lake Maggiore.

Looking back...

Founded in 1937, the company was producing, until 1974, drugs belonging to tuberculostatic agents, tranquillizers, and antihistamines for *Wander Ltd.*, Bern, as well as various active substances and intermediates for other firms. A pilot plant, a quality control lab, a development sec-

tion, and a sales department were part of the company, whose products were marketed worldwide.

During the early 70s the production was discontinued due to the growth of residential zones around the factory. As part of the basic reorganisation the firm came under the direct control of the quality assurance department of *Sandoz Ltd.*, Basel. The company was transformed into



Figure. Automation in the control lab for finished products with a robot in the foreground

*Correspondence: Dr. L. Chiesa
Pharmanalytica SA
via Balestra 31
CH-6601 Locarno