INTI

NATIONAL INSTITUTE OF INDUSTRIAL TECHNOLOGY

Biotechnology Program

Japan - Argentine Workshop
Buenos Aires, August 09´

INTI

INTI

A public service for industrial technology generation and transfer

What´s the INTI role?

- The INTI (National Institute of Industrial Technology) is under the Commerce and Industry Secretariat in the Production Ministry. Its principal tasks are:
  - Public technical advisor of both state and private sectors,
  - Quality and identity control on products,
  - Enforcement of the National Metrology Law,
  - Public assistant to the improvement of industrial competitiveness or industrial services.

The INTI has a full staff of about 2.000 people

Biotechnology Programme,
(In the next month Industrial Biotechnology Center)

Our mission:
To develop knowledge in bioprocess in order to Transfer Technology to the SME (small and medium entreprises) and to stablish a bridge between the scientific system and the biotechnological companies.

INTI

• Characteristics of The Bioprocess Plant

Total Covered Surface: 350 m²

Areas

- Fermentation and Massive Cellular Culture
- Downstream Processes and Purification
- Quality Control, microbiological and molecular Biology.
- Quality Assurance Office
- Auxiliary Areas, Materials Laundry, Preparation of solutions, weightings area, etc.
- Engineering and maintenance.

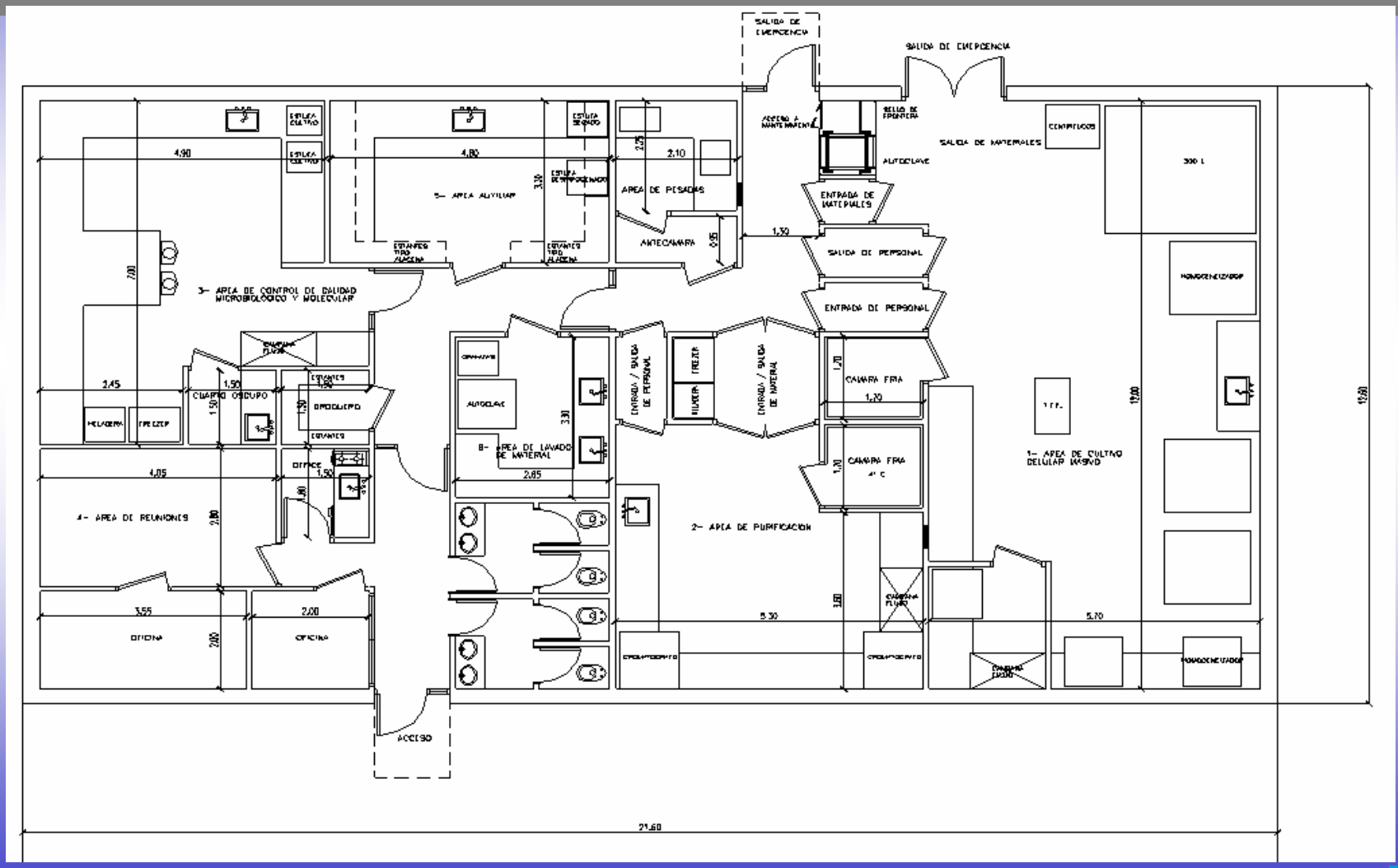
Common Services:

- Power 220 / 380 Volts
- Oil free Compressed air
- Special gasses, CO2, O2, N2, He.
- Cool and hot water
- Cooled water
- Power Generator
- Pure Steam
- Purified water in a loop

- **Previous picture**

INTI

- **Basic Planes of The Bioprocess Plant**



INTI

• Fermentation and Massive Cells Culture Area

Area class: D

Surface: 90 m^2

Designed for the beginning of cellular cultures and the scaling- up in GMP bioreactors and the first stage of the Downstream Processes.

EQUIPMENTS

- 5 y 50L fermentors (700L in next step)
- Shakers for cells culture
- Biological Security Cabins
- Tangential Flow Filtration for Micro and Ultra filtration
- Centrifuges
- Spectrophotometer UV/VIS
- pHmeter and conductimeter
- Homogenizer Pump by high pressure up to 2000 bar
- Autoclave Sterilizer double door.
- Refrigeration chamber (4° C)
- Ultra- freezer (-86° C)
- Thermostatic baths
- Liquid Nitrogen Tanks
- Balances and other equipment of traditional laboratory

• Downstream Processes and Purification Area

Area class: D Surface: 30 m^2

Designed for the second part of the Downstream Process, specially for proteins purification.

EQUIPMENTS

- GE Healthcare AKTA Liquid Chromatography System for work in a pilot scale.
- Laminar Flow Hood
- Tangential Flow Filtration Equipment with capacity of Micro and Ultra filtration
- Spectrophotometer UV/Vis.
- pHmeter and conductimeter.
- Refrigeration chamber (4° C).
- Ultra- freezer.
- Balances and other equipment of traditional laboratory.

- **Simulation of the Biotechnology Plant Building.**

- **Quality Control, microbiological and molecular Biology.**

Area class: D Surface: 35 m²

Designed for the work of qualified personnel on Biological Areas and of Control with the most modern infrastructure and equipment available.

EQUIPMENTS

- Biological Security Hood
- Fume Hood
- Spectrophotometer UV/Vis
- pHmeter- conductimeter and selective ion
- Dot-Blot
- Water – Ultrasonic Baths
- CO2 Incubators
- Equipment of electrophoresis of DNA and Proteins
- Transiluminator.
- Microscope.
- Isoelectrofocusing equipments
- Elisa equipments
- PCR equipments
- Ultra- Freezer
- Liquid Nitrogen Tanks.
- Balances and other equipment of traditional laboratory.

INTI

• Humans Resources

- Director: 1
- Bioprocess Plant Coordinator: 1
- Management Coordinator: 1
- Fermentation Area: 1 Responsible, 1 Technician
- Purification area: 1 Responsible
- Molecular, Microbiology and Quality Control area: 1 Responsible
- Quality Assurance area: 1 Responsible
- Engineering and Maintenance: 1 Responsible
- Secretary: 1
- External Assessor: 1

Actually Number of Personal
11

Plus 5 Scholarships Students

Number of Plant Personal at the end 2009
18

- **Actually picture**

Total investment is U$D 2.000.000 approximate at the moment in this first stage.

March 2009

JICA PROGRAM

Application's Group: **Technical Support for SME Promotion I - Biotechnology Course**

August 2006 - Osaka, Japan.

Starting an Action Plan Presentation

Remembering the Ideas of the Action Plan

INTI

Question: HOW MAY YOU APPLY THE KNOWLEDGE – SKILLS IN ARGENTINE

A_n:

- THE CONSTRUCTION OF THIS PLANT IS THE INSTRUMENT FOR GET THE MAIN OBJETIVES OF THIS PROGAM.
- This Plant will be a “Master Key” for the Argentine's Biotech SMEs, because IT will be the only NATIONAL AND PUBLIC INSTITUTION with this kind of facility to make the STRONG GROWTH of the BIOTECHNOLOGY SMEs IN A WIDE RANGE, FROM FOODS to BIORREMEDIATION.
- We have the possibility to give it the necessary status for USES in PHARMACEUTICAL PROCESSES.
- This Plant will reduce the costs in R&D and in the Scaling-Up process for Our SMEs.

Remembering the Ideas of the Action Plan

Objectives:

- Keep in touch and follow the Relationship between the JICA and the INTI-Biotechnology Program for keep in high level Ours Human Resources and the Technological Capacity, a very important point for our mission of Technology Transfer.

- Make a strong relationship with JICA and the Japanese Companies (Like Shimadzu) / Institutions (Like OMTRI) to help us for technology collaboration in Industrial Biotechnology, We want to continue in touch with Japan´s biotech institutions for his experience and capacity in Industrial Biotechnology

Remembering the Ideas of the Action Plan

- Looking for ASSISTANCE:
  - In this First Stage the Project is for a 50L final capacity scale, but the entire plant was designed for a 700L final capacity scale.
  - We need to build the second Stage for the 700L Scale soon as possible, in order to bring the full assistance to ours SME's. It has been getting more difficult to realize the Second Stage because WE NEED MORE FINANCIAL ASSISTANCE AND EQUIPMENTS.
  - For this second stage we´ll need, we are looking for, some financial assistance (perhaps with Funds or Institutions from Japan??)

- **So…**

- Now, After than close 2 years from the trip, the Bio Process Plant will be, in a few days, open and the necessity for complete the production line in the 700 liters scale still remains.

- In this point the cooperation with the Japan could be help to transform this huge effort in a reality according with the objectives that we used in the Action Plan.

- We don’t forget the strong capacities learned in the time when I was in the 2006 JICA Training Course, and I applied them in all this facility construction, especially in the layout of the spaces, the working areas and the equipments utilization. Also we start contacts with representants of japanese laboratory equipments that we need.

- **Finally,**

In the name of the INTI, I want to thank for all the JICA staff, and I hope this only be the first steps in the broad path of the relationship between the JICA and the INTI.

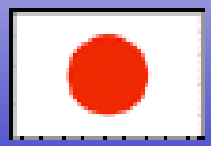
Instituto Nacional de Tecnología Industrial
INTI

Tanks for your Attention !

- **THANK YOU VERY MUCH**
- **Dómo arigató gozaimasu !!!!**

JICA

INTI



Instituto Nacional de Tecnología Industrial
INTI

Alberto Diaz

Director

National Institute of Industrial Technology

Biotechnology Program

- 5445 General Paz Avenue
- Box 157
- IGM Nº 99 Building
- PC: B1650WAB San Martin
- Buenos Aires, Argentina
- Phone: (54 11) 4724 6200/6300/6400
- Int: 6130
- **adiaz@inti.gob.ar**