



IICA



Directory of Plant Biotechnology Research/Development Laboratories in Latin America

*Translated from Spanish
by: Sandra Toussaint
Antonio M. Pinchinat*

IICA/CIDIA

What is IICA ?

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the Inter-American system. The Institute was founded on October 7, 1942, when the Council of Directors of the Pan American Union approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was founded as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among its 32 Member States, so as to better promote agricultural development and rural well-being.

With its broader and more flexible mandate and new structure to facilitate direct participation by the Member States in the activities of the Inter-American Board of Agriculture (IABA) and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its member states.

The contributions provided by the Member States and the ties IICA maintains with its 13 Permanent Observer Countries and numerous international organizations provide the Institute with channels to direct its human and financial resources in support of agricultural development throughout the Americas.

The 1987-1993 Medium Term Plan, the policy document that sets IICA's priorities, stresses the reactivation of the agricultural sector as the key to economic growth. In support of this policy, the Institute is placing special emphasis on the support and promotion of actions to modernize agricultural technology and strengthen the processes of regional and sub-regional integration. In order to attain these goals, the Institute is concentrating its actions on the following five Programs: Agricultural Policy Analysis and Planning; Technology Generation and Transfer; Organization and Management for Rural Development; Trade and Agro-industry; and Agricultural Health.

The Member States of IICA are: Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Surinam, Trinidad and Tobago, the United States of America, Uruguay and Venezuela. The Permanent Observer Countries of IICA are: Arab Republic of Egypt, Austria, Belgium, Federal Republic of Germany, France, Israel, Italy, Japan, Netherlands, Portugal, Republic of Korea, Romania and Spain.

IICA-CIDIA



November 1991
Castries, St. Lucia

~~AVT6000~~

00006816

IICA
F30
F686

**DIRECTORY OF PLANT BIOTECHNOLOGY RESEARCH/DEVELOPMENT LABORATORIES
IN LATIN AMERICA**

Translated from Spanish
by: Sandra Toussaint
Antonio M. Pinchinat

CONTENTS

	Page
INTRODUCTION	1
1. GENETIC ENGINEERING	2
Argentina	3
Brazil	5
Colombia	6
Chile	7
Cuba	7
Mexico	8
Uruguay	9
Venezuela	10
Costa Rica	10
2. CELL AND TISSUE CULTURE	11
Argentina	12
Brazil	15
Colombia	16
Chile	18
Costa Rica	19
Ecuador	19
Mexico	20
Peru	21
Dominican Republic	22
Venezuela	23
Cuba	24
Guatemala	24



INTRODUCTION

The summarized information contained in this Directory was extracted from CATBIO, a document published by the Regional Office of the United Nations Food and Agriculture Organization (FAO), Santiago, Chile. It was prepared in Spanish by Dr. Juan Izquierdo, FAO Regional Plant Production Officer. CATBIO covers 153 (61% of 257) laboratories identified by FAO. Total or partial reproduction of the contents of CATBIO is authorized by FAO, but the source should be mentioned.

The full title of the original publication is:

FAO. 1990. CATBIO Catálogo Regional de Laboratorios de Biotecnología Vegetal, Encuesta Regional 1989 -1990. FAO Oficina Regional para América Latina y el Caribe. Santiago, Chile 149 p.

This directory is organized along biotechniques of major importance in each laboratory, encompassing:

- Genetic engineering
- Cell and tissue culture
- In vitro germplasm conservation
- Meristem tip culture
- .- In vitro metabolite production
- Pathogen diagnosis
- Plant defence mechanisms
- Plant proteins and enzymes

The code which appears (in brackets) in the original Spanish version of the Directory is retained to identify each laboratory.

The Directory aims at providing succinct orientation to professionals from Caribbean Institutions interested in pursuing advanced training at Latin American institutions which excel in biotechnology research/development. It is a contribution of IICA's project Facilitating Latin American/Caribbean Linkages and Transfer of Technology for Agricultural Development.

Antonio M. Pinchinat
Regional Specialist, Technology Generation
and Transfer

1. GENETIC ENGINEERING

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Fundación para Investigaciones Biológicas Aplicadas [Applied Biological Research Foundation] (010)	Wheat Maize Tobacco	Defence mechanisms against stress Plant proteins and enzymes Isozymes	Proteins and enzymes Genetic mapping Molecular sounds
Centro de Estudios Fotosintéticos y Bioquímicos-CEFOBI- [Photosynthetic and Biochemical Studies Center] Universidad Nacional-Rosario (016)	Maize Stevia sp. Spinach	Plant proteins and enzymes Direct genetic transfer Specific molecular hybridization	Plant proteins and enzymes Direct genetic transfer Somatic embryology
Dpto. Ciencias Biológicas [Dept. of Biological Sciences] - Facultad Bioquímica y Farmacia - Universidad Nacional-Rosario (017)	Tomato Cowpea Spinach	Plant proteins and enzymes Proteins (other studies) Genetic mapping	Plant proteins and enzymes Molecular sounds Sequencing

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
<p>INGEBI CONICET</p> <p>(022)</p>	<p>Potato Tobacco Pepper</p>	<p>Molecular sounds indexation</p> <p>Specific molecular hybridation</p>	<p>Molecular hybridization</p> <p>Molecular sounds</p> <p>Sounds indexation</p>
<p>Instituto de Biología Molecular [<i>Molecular Biology Institute</i>] - Centro de Investigaciones de Ciencias Veterinarias- INTA</p> <p>(031)</p>	<p>Potato Wheat Sunflower</p>	<p>Genetic transfer with vectors</p> <p>Molecular sounds indexation</p> <p>Basic studies on protoplasm</p>	<p>Direct genetic transfer</p> <p>Sequencing</p> <p>RFLP</p>

BRAZIL

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Pesquisa e Desenvolvimento [<i>Research & Development Lab.</i>] - Bioplanta Tecnologia de Plantas S.A. (039)	Citrus sp. Banana/plantain Eucalyptus sp.	RFLP Pathogen diagnosis Cell and tissue culture	RFLP Pathogen diagnosis Cell culture
Centro de Biologia Molecular e Eng Genetica [<i>Molecular Biology & Genetic Eng. Center</i>] UNICAMP-Universidade Estadual de Campinas (045)	Maize	Genetic engineering Plant enzymes and proteins Cell and tissue culture	Genetic engineering RFLP

COLOMBIA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Investigación en Biotecnología [Biotechnological Research Unit] - Centro Internal. Agricultura Tropical - CIAT (061)	Cassava Beans Stylosantes sp.	Cell and tissue culture Genetic engineering Plant defence mechanisms	Cell culture Genetic mapping Genetic transformation
Laboratorio de Microbiología Industrial [Industrial Microbiology Lab.] - Fac. de Ciencias - Univ. Ind. de Santander (066)	-	Metabolite energetic finality Protein/enzyme metabolites	Genetic engineering Metabolite energetic finality
Unidad de Biología Vegetal [Plant Biology Unit] - Facultad de Ciencias - Univ. Javeriana (070)	Passion fruit Eucalyptus sp. Indigenous forest trees	Meristem tip micropropagation Genetic engineering Protoplasts	Micropropagation Genetic engineering Cell culture

CHILE

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques	Area of Training Offered
Laboratorio de Bioquímica General [Gen. Biochemistry Laboratory] Facultad Cs. Químicas y Farmacéuticas - Universidad de Chile (073)	Citrus sp.	Plant defence mechanisms General molecular hybridization Specific molecular hybridization	Molecular sounds Protoplasm structure

CUBA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Biotecnología de Plantas Centro de Ingeniería Genética y Biotecnología [Plant Biotechnology - Genetic Engineering & Biotechnology Center] (088)	Sugarcane Potato Cassava	Genetic engineering Pathogen diagnosis Plant defence mechanisms	Genetic vector transfer

MEXICO

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biología Molecular de Plantas - Centro de Inv. sobre Fijación de Nitrógeno - UNAM [<i>Molecular Plant Biology Lab. - Nitrogen Fixation Research Center</i>] (108)	Beans Leucaena sp. Other fodder	Genetic engineering Cell and tissue culture Plant proteins and enzymes	Protoplast transfer Molecular hybridation Protoplasmic structure
Unidad Irapuato - Centro de Investigación y de Estudios Avanzados- [<i>Research & Advanced Studies Center</i>] CINVESTAV-IPN (111)	Maize Beans Potato	Genetic engineering Plant defence mechanisms Cell and tissue culture	Genetic engineering Genetic transformation RFLP
Departamento de Bioquímica [<i>Biochemistry Department</i>] - Fac. de Química-UNAM (112)	Maize Wheat Beans	Genetic engineering Genetic mapping Action mechanisms	Genetic engineering Somaclonal embryogenesis Action mechanisms

URUGUAY

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Inst. Inv. Biológicas Clemente Estable - Div. de Biología Molecular [Molecular Biology Div.] (136)	Potato Citrus sp.	Plant defence mechanisms Direct genetic transfer Action mechanisms	Molecular sounds
Inst. Inv. Biológicas Clemente Estable - División Citogenética [Cytogenetic Division] (137)	Potato Rice Wheat	Isozymes Specific molecular hybridization Other genetic engineering techniques	Genetic mapping Molecular sounds Other genetic engineering techniques

VENEZUELA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Biotecnología- Inst. Internacional de Estudios Avanzados [<i>Biotechnology Unit - International Institute for Advanced Studies</i>] (146)	Cassava Potato	Basic protoplasmic studies Direct genetic transfer Genetic mapping	Cell culture Genetic engineering

COSTA RICA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Centro Investigación en Biología Celular y Molecular - CIBCM - [<i>Cellular & Molecular Biology Research Center</i>] Univ. de Costa Rica (151)	Maize Rice Beans	Genetic engineering Pathogen diagnosis Plant proteins and enzymes	RFLP

2. CELL AND TISSUE CULTURE

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Cátedra de Caña de Azúcar [<i>Sugarcane Professorship</i>] - Facultad de Agronomía y Zootecnia - Universidad Nacional Tucumán (001)	Sugarcane	Somaclonal variation Defence mechanisms against viruses	Somaclonal variation Micropropagation
Laboratorio de Biotecnología [<i>Biotechnology Lab.</i>] - Facultad de Farmacia y Bioquímica - Universidad de Buenos Aires (009)	Potato Marigold Artemisia sp.	Secondary metabolites Genetic transfer with vectors	In vitro metabolites Suspended cell culture Secondary metabolites
Cátedra de Genética [<i>Genetics Professorship</i>] Facultad Ciencias Agrarias - Univ. Nac. Rosario (012)	Tomato Sunflower Flax	Synthetic seeds Embryo recovery Plant defence mechanisms	Cell and tissue culture

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Centro de Estudios Fotosintéticos y Bioquímicos-CEFOBI [Photosynthetic & Biochemical Studies Center] - Univ. Nacional Rosario (016)	Maize Stevia sp. Spinach	Plant proteins and enzymes Direct genetic transfer Specific molecular hybridization	Proteins and enzymes Direct genetic transfer Somatic embryology
Centro Exp. de Propagación Vegetativa [Vegetative Propagation Experimental Center] - Facultad de Agronomía - Univ. Nac. La Plata (019)	Eucalyptus sp. Notophagus sp. Araucaria sp.	Meristem tip culture Masal micropropagation Somatic embryogenesis	Protoplasts Somatic embryogenesis Germplasm conservation
Laboratorio Bioquímica de la Diferenciación [Biochemical Differentiation Lab.] Instituto Investigaciones Bioquímicas - Fund. Campomar (021)	Carrot Tomato Sunflower	Basic studies in somatic embryology Plant proteins and enzymes Protoplasts	Somatic embryogenesis Protein synthesis Protein structure

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Instituto de Genética - Centro de Investigaciones en Ciencias Agropecuarias INTA [<i>Genetics Institute- Agricultural Sciences Research Center</i>] (025)	Wheat Barley Alfalfa	Basic studies in somatic embryology Basic studies in organogenesis Embryo recovery	Somatic embryology Organogenesis Embryo recovery
Lab. de Cultivo Tejidos [<i>Tissue Culture Lab.</i>] Inst. Botánico del Nordeste - IBONE - Facultad de Agronomía - Universidad Nacional del Nordeste (036)	Citrus sp. Paraguayan grass (Maté) Paspalus sp.	Cell and tissue Culture Haploid and anther culture Meristem tip culture	Cell and tissue culture Meristem tip culture

BRAZIL

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Pesquisa e Desenvolvimento [Research & Development Lab.] Bioplanta Tecnologia de Plantas S.A. (039)	Citrus sp. Banana/plantain Eucalyptus sp.	RFLP Pathogen diagnosis Cell and tissue culture	RFLP Pathogen diagnosis Cell culture
Centro Biotecnologia Agricola-CEBTEC [Agricultural Biotechnology Center] - Fund. Est. Agrarios Luis Quiroz - Univ. Sao Paulo (044)	Beans Strawberry Citrus sp.	Somaclonal variation Meristem tip microprop. Secondary metabolites	Somaclonal variation Organogenesis Microprop.basic studies
Laboratorio de Fisiologia Vegetal - IAPAR [Plant Physiology Laboratory] (046)	Coffee Garlic Beans	Somatic embryogenesis Meristem tip culture Meristem tip micropropagation	Somatic embryogenesis Organogenesis Meristem tip culture
Laboratorio de Cultura de Tecidos - Centro Nac. de Pesquisa en Arroz e Feijao [Tissue Culture Lab. - National Rice & Beans Research Center] (053)	Rice Beans	Protoplasts (other studies) Somatic embryology (other studies) Meristem tip micropropagation	Protoplasts Somatic embryology

COLOMBIA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Investigación en Biotecnología [<i>Biotechnology Research Unit</i>] - Centro Internl. Agricultura Tropical - CIAT (061)	Cassava Beans Stylosantes sp.	Cell and tissue culture Genetic engineering Plant defence mechanisms	Cell culture Genetic mapping Genetic transformation
Laboratorio de Crecimiento y Desarrollo [<i>Growth & Development Lab.</i>] - Univ. Nacional Colombia - Sec. Medellín (063)	Banana/plantain Potato Carnation	Micropropagation Stem tip micropropagation	Organogenesis Micropropagation Somat. embryogenesis
LIQC y los Productores Nacionales - Federación Nacional de Cafeteros [<i>LIQC and the National Producers - National Coffee Growers Federation</i>] (068)	Coffee Pineapple Native fruit trees	Protoplasts Somatic embryogenesis Meristem tip culture	Somat. embryogenesis Protoplasts Meristem tip culture

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Biotecnología Agrícola - Instituto Colombiano Agropecuario- ICA [Agricultural Biotechnology Unit - Colombian Agricultural Institute] (069)	Banana/plantain Potato Sweet potato	Meristem tip culture Germplasm banks Germplasm conservation	Meristem tip culture Somat. embryogenesis Germplasm conservation
Unidad de Biología Vegetal- Facultad de Ciencias [Biology Unit - Faculty of Sciences] Universidad Javeriana (070)	Passion Fruit Eucalyptus sp. Native forest trees	Stem tip micropropagation Genetic engineering Protoplasts	Micropropagation Genetic engineering Cell culture

CHILE

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Botánica - Facultad de Ciencias Biológicas [Botany Lab. - Faculty of Biological Sciences] Pontificia Universidad Católica (080)	Papaya Potato Prosopis sp.	Stem tip micropropagation Somaclonal variation Somatic embryogenesis	Cell culture Organogenesis Somatic embryogenesis
Laboratorio de Micropropagación [Micropropagation Lab.] Fac. Cs. Biológicas y Fac. Agronomía - Pont. Univ. Católica (083)	Blueberry Eucalyptus sp. Mulberry	Stem tip culture Immunotechniques (ELISA) Basic micropropagation studies	Cell and tissue culture Organogenesis Stem tip culture
Laboratorio de Cultivo de Tejidos Vegetales [Plant Tissue Culture Lab.] - Fac. Ciencias Agrarias- Universidad de Chile (084)	Kiwifruit Jojoba Grape	Somaclonal variation Somatic embryology (basic studies) Stem tip culture	Somatic embryogenesis Organogenesis Low temperature conservation

COSTA RICA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Biotecnología [<i>Biotechnology Unit</i>] - CATIE (086)	Banana/plantain Cacao Coffee	Germplasm conservation Organogenesis Somatic embryogenesis	Germplasm conservation Organogenesis Somatic embryogenesis
Laboratorio de Cultivo de Tejidos [<i>Tissue Culture Lab.</i>] - Escuela Ciencias Agrarias - Univ. Nac. Autónoma (087)	Banana/plantain Rice Beans	Induced mutagenesis Stem tip culture Stem tip micropropagation	Induced mutagenesis Stem tip culture Micropropagation

ECUADOR

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos - Corporación Ambiente y Desarrollo [<i>Tissue Culture Lab. - Environment & Development Corporation</i>] (092)	Native fruit trees Mulberry Garlic	Somatic embryogenesis Stem tip micropropagation Induced mutagenesis	Micropropagation Somat. embryogenesis

MEXICO

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biología Experimental - Centro Inv. Biológicas de Baja California [<i>Experimental Biology Lab.</i>] (100)	Beans Radish/beets	Secondary metabolites Micropropagation Somaclonal variation	Secondary metabolites Metabolite prot. Somaclonal variation
Laboratorio de Biotecnología - Colegio Postgraduados [<i>Biotechnology Lab. - Postgrad. College</i>] Chapingo (105)	Maize Pine Beans	Somaclonal variation Somatic embryogenesis Meristem tip micropropagation	Protoplasts Germplasm conservation
Laboratorio de Biología Molecular de Plantas - Centro de Inv. sobre Fijación de Nitrógeno - UNAM [<i>Plant Molecular Biology - Nitrogen Fixation Research Center</i>] (108)	Beans Leucaena sp. Other fodder	Genetic engineering Cell and tissue culture Plant proteins and enzymes	Protoplast trans. Molecular hybridization Protoplast structure

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
División de Biología Vegetal - Centro de Investigación Científica de Yucatán [Plant Biology Division - Yucatán's Scientific Research Center] (110)	Citrus sp.	Somaclonal variation	Micropropagation
	Cactaceae	Stem tip micropropagation	Organogenesis
	Native forest trees	Secondary metabolites	Indicator plants
Departamento de Bioquímica - Facultad de Química - UNAM [Dept. of Biochemistry - Fac. of Chemistry] (112)	Maize	Genetic engineering	Genetic engineering
	Wheat	Genetic mapping	Somat. embryogenesis
	Beans	Action mechanisms	Action mechanisms

PERU

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivos de Tejidos-GENETICA [Tissue Culture Lab.] Univ. Nac. Agraria La Molina (123)	Sweet potato	Genetic engineering	Cell and tissue culture
	Cotton	Cell and tissue culture	Somat. embryogenesis
	Cassava	Somatic embryogenesis	Organogenesis

DOMINICAN REPUBLIC

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos y Fisiología de Plantas [<i>Tissue Culture & Plant Physiology Lab.</i>] - Inst. Superior de Agricultura ISA (132)	Cassava Garlic Rice	Stem tip micropropagation Inter-institutional germplasm exchange	Masal micropropagation Micropropagation Soma. embryogenesis

VENEZUELA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos - FUSAGRI [Tissue Culture Lab.] (143)	Garlic Papaya Banana/plantain	Meristem tip micropropagation Organogenesis Plant defence mechanisms	Organogenesis
Unidad de Biotecnología Inst. Internacional de Estudios Avanzados [Biotechnology Unit - Intl. Institute for Advanced Studies] (146)	Cassava Potato	Protoplast (basic studies) Direct genetic transfer Genetic mapping	Cell culture Genetic engineering
Laboratorio de Cultivo de Tejidos Vegetales [Plant Tissue Culture Lab.] - Univ. Central de Venezuela (148)	Sugarcane Potato Sweet potato	Somatic embryogenesis Organogenesis Germplasm conservation	Cell culture Somat. organogenesis Organogenesis

CUBA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal [Plant Biotechnology Lab.] - Univ. Central de las Villas (150)	Sugarcane Banana/plantain Papaya	In vitro selection of protoplasts Organogenesis Stem tip micropropagation	In vitro selection of protoplasts Organogenesis Stem tip micropropagation

GUATEMALA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos Vegetales [Plant Tissue Culture Lab.] Facultad de Agronomía - Universidad de San Carlos (153)	Wheat Rice Beans	Somaclonal variation Induced mutagenesis Germplasm banks	Cell and tissue culture Organogenesis Somat. embryogenesis

3. IN VITRO GERMLASM CONSERVATION

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Centro Exp. de Propagación Vegetativa (CEPROVE) [Plant Propagation Experimental Center] - Facultad de Agronomía - Univ. Nac. La Plata (019)	Eucalyptus sp. Notophagus sp. Araucaria sp.	Stem tip micropropagation Masal micropropagation Somatic embryogenesis	Protoplasts Somat. embryogenesis Germplasm conservation

BOLIVIA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Producción de Semilla de Papa - SEPA [Potato Seed Production Unit] (037)	Potato	Basic studies in germplasm	Basic studies in germplasm Crioconservation Other studies in germplasm

BRAZIL

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio Cultura de Tecidos de Plantas - Centro Nac. de Pesquisas Horticolas - EMBRAPA [Plant Tissue Culture Lab. - National Horticultural Research Center] (050)	Potato	Stem tip culture	Stem tip culture
	Cruciferae	Stem tip micropropagation	Micropropagation
	Sweet potato	Somatic embryogenesis	Germplasm conservation
Laboratorio de Biotecnologia de Plantas Empresa Pernambucana de Pesquisa Agropecuaria - IPA [Plant Biotechnology Lab. - Pernambucan Agricultural Research Enterprise] (057)	Cassava	Stem tip micropropagation	Micropropagation
	Banana/plantain	Germplasm conservation	Protop. (other studies)
	Beans	Other studies (protop.)	Germplasm conservation

COLOMBIA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Biotecnología Agrícola - Instituto Col. Agropecuario - ICA [Agricultural Biotech. Unit] (069)	Banana/plantain Potato Sweet potato	Meristem tip culture Germplasm banks Germplasm conservation	Meristem tip culture Somat. embryogenesis Germplasm conservation

CHILE

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos Vegetales - Facultad de Ciencias Agrarias- Univ. de Chile [Plant Tissue Culture Lab.] (084)	Kiwifruit Jojoba Grape	Somaclonal variation Somatic embryogenesis (basic studies) Meristem tip culture	Somatic embryogenesis Organogenesis Low temperature conservation

COSTA RICA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Unidad de Biotecnología CATIE [Biotechnology Unit] (086)	Banana/plantain Cacao Coffee	Germplasm conservation Organogenesis Somatic embryogenesis	Germplasm conservation Organogenesis Somat. embryogenesis

ECUADOR

Name of Institution (Code)	Principal Species Targeted	Main biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos "Oscar S. Malamud" - INIAP [Tissue Culture Lab.] (089)	Potato Sweet potato Andean tubers	Low temperature conservation Meristem tip micropropagation Indicator plants	Micropropagation Micropropagation (other studies) Germplasm conservation
Laboratorio de Biotecnología Vegetal [Plant Biotechnology Lab.] - Facultad de Ciencias Agrícolas - Universidad Central (095)	Sweet cucumber Native fruit trees Mulberry	Masal micropropagation Somaclonal variation Genetic transfer with vectors	Meristem tip culture Germplasm banks Secondary metabolites

MEXICO

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal y Genética [Plant Biotechnology & Genetics Lab.] - Inst. de Biología - Univ. Nac. Autónoma de México(102)	Cactaceae Orchids Anthurium sp.	Cell and tissue culture Germplasm conservation Meristem tip culture	Meristem tip culture Germplasm conservation Germplasm banks
Laboratorio de Biotecnología - Colegio Postgraduados [Biotechnology Lab. - Postgraduate College] - Chapingo (105)	Maize Pine Beans	Somaclonal variation Somatic embryogenesis Meristem tip micropropagation	Protoplasts Germplasm conservation

PERU

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Recursos Genéticos y Biotecnología [<i>Genetic Resources & Biotech.</i>] - Univ. Nacional Mayor de San Marcos (116)	Andean tubers Cassava Rice	Germplasm conservation Meristem tip culture Pathogen diagnosis	Germplasm conservation Meristem tip culture Micropropagation (other studies)
Laboratorio de Cultivo de Tejidos [<i>Tissue Culture Lab.</i>] - Univ. Nacional "Pedro Ruiz Gallo" (121)	Cassava Sugarcane Rice	Germplasm conservation Somaclonal variation Meristem tip micropropagation	Germplasm conservation Germplasm banks Micropropagation

URUGUAY

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal [<i>Plant Biotechnology Lab.</i>] - Facultad de Agronomía (140)	Citrus sp. Barley Eucalyptus sp.	Microprop. micrografting Germplasm banks Anther and haploid culture	Micropropagation micrografting Germplasm banks

4. MERISTEM TIP CULTURE

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
<p>Cátedra de Caña de Azúcar [<i>Sugarcane Professorship</i>] - Facultad de Agronomía y Zootecnia - Univ. Nac. Tucumán (001)</p>	<p>Sugarcane</p>	<p>Somaclonal variation</p> <p>Defence mechanisms against viruses</p>	<p>Somaclonal variation</p> <p>Micropropagation</p>
<p>Laboratorio de Cultivo de Tejidos [<i>Tissue Culture Lab.</i>] - INTA - E.E.A. Balcarce (006)</p>	<p>Potato</p> <p>Sunflower</p> <p>Other fodder</p>	<p>Masal micropropagation</p> <p>Embryo recovery</p> <p>Plant defence mechanisms</p>	<p>Masal micropropagation</p>
<p>Centro Regional Misiones - INTA Montecarlo (013)</p>	<p>Gigantic paradise (<i>Melia azederach</i>)</p> <p>Paraguayan grass (Maté)</p> <p>Citrus sp.</p>	<p>Immunotechniques (ELISA)</p> <p>Micrografting micropropagation</p> <p>Meristem tip micropropagation</p>	<p>Micrografting micropropagation</p> <p>Pathogen diagnosis</p>

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal [Plant Biotechnology Lab.] - Facultad de Ciencias Agropecuarias - Univ. Nacional de Córdoba (015)	Garlic Potato Sweet potato	Stem tip micropropagation Genetic transfer with vectors Isozymes	Masal micropropagation Isozymes
Instituto de Fitovirología - INTA [Phytovirology Institute] (020)	Garlic Soyabean Peach	Pathogen diagnosis Defence mechanisms against viruses Meristem tip culture	Pathogen diagnosis Defence mechanisms against stress Micropropagation
Centro de Ecofisiología Vegetal (CEVEG)-CONICET [Plant Ecophysiology Center] (027)	Sunflower Kiwifruit Peach	Meristem tip culture Embryo recovery Somatic embryogenesis	Micropropagation Embryo recovery

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Cátedra de Fruticultura [Fruiticulture Professorship] - Facultad de Ciencias Agrarias - Univ. Nac. Cuyo (028)	Pistachio Pear Cherry	Meristem tip micropropagation Masal micropropagation Micropropagation (basic studies)	Micropropagation
Laboratorio de Fisiología Vegetal [Plant Physiology Lab.] Facultad de Ciencias Agrarias - Univ. Nac. Cuyo (034)	Grape Potato Prosopis sp.	Meristem tip micropropagation Secondary metabolites Micropropagation (basic studies)	Micropropagation Micropropagation (basic studies)
Laboratorio de Fitopatología [Phytopathology Lab.] - Facultad de Ciencias Agropecuarias - Univ. Nac. Córdoba (035)	Potato Strawberry Garlic	Diagnosis (virus purification) Meristem tip micropropagation Masal micropropagation	Pathogen diagnosis Micropropagation

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos [<i>Tissue Culture Lab.</i>] - Instituto Botánico del Nordeste (IBONE) Facultad de Agronomía - Univ. Nac. del Nordeste (036)	Citrus sp. Paraguayan grass (Maté) Paspalus sp.	Cell and tissue culture Anther and haploid culture Meristem tip culture	Cell and tissue culture Meristem tip culture

BRAZIL

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
ACESITA ENERGETICA S.A. (038)	Eucalyptus sp.	Meristem tip culture Plant defence mechanisms Somatic embryogenesis	Meristem tip culture
Laboratorio de Cultivo de Tecido [Tissue Culture Laboratory] (040)	Kiwifruit Sweet potato Other ornamentals	Masal micropropagation Somaclonal variation Meristem tip micropropagation	Masal micropropagation Meristem tip micropropagation
Centro Biotecnologia Agricola - CEBTEC - [Agricultural Biotechnological Center] Fund. Est. Agrarios Luis Queiroz - Univ. Sao Paulo (044)	Beans Strawberry Citrus sp.	Somaclonal variation Meristem tip micropropagation Secondary metabolites	Somaclonal variation Organogenesis Micropropagation (basic studies)

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Fisiologia Vegetal - IAPAR [Plant Physiology Laboratory] (046)	Coffee Garlic Beans	Somatic embryogenesis Meristem tip culture Meristem tip micropropagation	Somatic embryogenesis Organogenesis Meristem tip culture
Laboratorio de Biotecnologia - Centro Nac. de Pesquisa de Florestas - EMBRAPA [Biotechnology Lab. - National Forestry Research Center] (048)	Eucalyptus sp. Pine Paraguayan grass (Maté)	Meristem tip micropropagation Micropropagation Protop. (basic studies)	Micropropagation
Laboratorio Cultura de Tecidos de Plantas - Centro Nac. de Pesquisas Hortícolas - EMBRAPA [Plant Tissue Culture Lab. - National Horticultural Research Center] (050)	Potato Cruciferae Sweet potato	Meristem tip culture Meristem tip micropropagation Somatic embryogenesis	Meristem tip culture Micropropagation Germplasm conservation

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Fisiologia Vegetal - Dpto. Botanica [<i>Plant Physiology Lab.</i>] - Univ. de Brasilia (052)	Banana/plantain Eucalyptus sp. Cassava	Meristem tip micropropagation Somatic embryogenesis (basic studies) Organogenesis (basic studies)	Micropropagation
Centro de Biotecnologia do Estado do Rio Grande do Sul [<i>Rio Grande do Sul State Biotechnology Center</i>] (054)	Watersprouts Wheat Beans	Genetic engineering Pathogen diagnosis Plant defence mechanisms	Meristem tip culture Pathogen diagnosis Defence mechanisms
EQUILAB - Biotecnologia e Agropecuaria Ltda. EQUIPESCA - Equipamentos de Pesca S. A. (055)	Orchids Other ornamentals	Meristem tip culture	Meristem tip culture

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnologia de Plantas Empresa Pernambucana de Pesquisa Agropecuaria - IPA [Plant Biotechnology Lab. - Pernambucan Agricultural Research Enterprise] (057)	Cassava Banana/plantain Beans	Meristem tip micropropagation Germplasm conservation Protop. (other studies)	Micropropagation Protop. (other studies) Germplasm conservation
BIOMATRIX S.A. (058)	Potato Anthurium sp. Banana/plantain	Meristem tip micropropagation Masal micropropagation Immunotechniques (ELISA)	Immunotechniques Micropropagation Masal micropropagation
Laboratorio de Cultura de Tecidos de Plantas - Centro Nac. de Pesquisa F.E.M. - EMBRAPA [Plant Tissue Culture Lab.] (059)	Strawberry Potato Native fruit trees	Meristem tip culture Organogenesis Cell and tissue culture	Micropropagation Somaclonal variation Organogenesis

COLOMBIA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología [Biotechnology Lab.] Univ. de Caldas (062)	Banana/plantain Native fruit trees	Micropropagation Somaclonal variation	Micropropagation
Laboratorio de Crecimiento y Desarrollo [Growth & Development Lab.] - Facultad de Agronomía - Univ. Nac. Sec. Medellín (063)	Banana/plantain Potato Carnation	Micropropagation Meristem tip micropropagation	Organogenesis Micropropagation Somat. embryogenesis
BIOPLASMA - UPTC - Facultad de Matemáticas y Ciencias Naturales [Faculty of Mathematics & Natural Sciences] (067)	Apple Plum Peach	Meristem tip micropropagation Masal micropropagation Microprop. (basic studies)	Micropropagation

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
LIQC y los Productores Nacionales - Federación Nacional de Cafeteros [LIQC and the National Producers-National Coffee Growers Fed.] (068)	Coffee Pineapple Native fruit trees	Meristem tip culture Germplasm banks Germplasm conservation Protoplasts	Somatic embryogenesis Protoplasts Meristem tip culture
Unidad de Biotecnología Agrícola - Instituto Colombiano Agropecuario -ICA [Agricultural Biotechnology Unit - Colombian Agricultural Inst.] (069)	Banana/plantain Potato Sweet potato	Somatic embryogenesis Meristem tip culture	Meristem tip culture Somatic embryogenesis Germplasm conservation
Unidad de Biología Vegetal - Facultad de Ciencias [Plant Biology Unit - Fac. of Sciences] Univ. Javeriana (070)	Passion fruit Eucalyptus sp. Native forest trees	Meristem tip micropropagation Genetic engineering Protoplasts	Micropropagation Genetic engineering Cell culture

CHILE

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos Vegetales [Plant Tissue Culture Lab.] - BIOPLANT - Compañía Chilena de Tabaco (074)	Kiwifruit Strawberry Apple	Masal micropropagation Inter-institutional germplasm exchange Somaclonal variation	Micropropagation
Laboratorio de Cultivo de Tejidos [Tissue Culture Lab.] - Facultad de Ciencias Agrarias - Univ. Austral (078)	Potato Garlic Carnation	Low temperature conservation Inter-institutional germplasm exchange Meristem tip micropropagation	Micropropagation
Laboratorio de Micropropagación [Micropropagation Lab.] Fac. CS. Biológicas y Fac. Agronomía - Pont. Univ. Católica (083)	Blueberry Eucalyptus sp. Mulberry	Meristem tip culture Immunotechniques (ELISA) Microprop. (basic studies)	Cell and tissue culture Organogenesis Meristem tip culture

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal [Plant Biotechnology Lab.] - INIA - Est. Exp. La Platina (085)	Garlic Grape Blueberry	Meristem tip micropropagation Embryo recovery Anther and haploid culture	Micropropagation

COSTA RICA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos - Escuela Ciencias Agrarias [Tissue Culture Lab. - School of Agricultural Sciences] (087)	Banana/plantain Rice Beans	Induced mutagenesis Meristem tip culture Meristem tip micropropagation	Induced mutagenesis Meristem tip culture Micropropagation

ECUADOR

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Lab. de Cultivo de Tejidos [<i>Tissue Culture Lab.</i>] "Oscar S. Malamud" INIAP (089)	Potato Sweet potato Andean tubers	Low temperature conservation Meristem tip micropropagation Indicator plants	Micropropagation Micropropagation (other studies) Germplasm conservation
Laboratorio de Cultivo de Tejidos - Corporación Ambiente y Desarrollo [<i>Tissue Culture Lab. - Environment & Development Corporation</i>] (092)	Native fruit trees Mulberry Garlic	Somatic embryogenesis Meristem tip micropropagation Induced mutagenesis	Micropropagation Somatic embryogenesis
Laboratorio de Biotecnología Vegetal - Facultad de Ciencias Agrícolas [<i>Plant Biotechnology Lab. - Fac. of Agricultural Sciences</i>]-Univ. Central (095)	Sweet cucumber Native fruit trees Mulberry	Masal micropropagation Somaclonal variation Genetic transfer with vectors	Meristem tip culture Germplasm banks Secondary metabolites

MEXICO

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal y Genética [<i>Plant Biotechnology & Genetics Lab.</i>]-Inst. de Biología- Univ. Nac. Autónoma de México (102)	Cactaceae Orchids Anthurium sp.	Cell and tissue culture Germplasm conservation Meristem tip culture	Meristem tip culture Germplasm conservation Germplasm banks
División de Biología Vegetal - Centro de Investigación Científica de Yucatán [<i>Plant Biology Div. - Yucatán Scientific Research Center</i>] (110)	Citrus sp. Cactaceae Native fruit trees	Somaclonal variation Meristem tip micropropagation Secondary metabolites	Micropropagation Organogenesis Indicator plants

PERU

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
<p>Recursos Genéticos y Biotecnología [<i>Genetic Resources & Biotechnology</i>] - Univ. Nac. Mayor de San Marcos (116)</p>	<p>Andean tubers Cassava Rice</p>	<p>Germplasm conservation Meristem tip culture Pathogen diagnosis</p>	<p>Germplasm conservation Meristem tip culture Microp. (other studies)</p>
<p>Laboratorio de Cultivo de Tejidos - [<i>Tissue Culture Lab.</i>] Centro Internacional de la Papa - CIP (117)</p>	<p>Potato Sweet potato</p>	<p>Germplasm conservation Meristem tip culture Genetic engineering</p>	<p>Meristem tip culture</p>
<p>Laboratorio de Cultivo de Tejidos [<i>Tissue Culture Lab.</i>] - Univ. Nac. "Pedro Ruiz Gallo" (121)</p>	<p>Cassava Sugarcane Rice</p>	<p>Germplasm conservation Somaclonal variation Meristem tip micropropagation</p>	<p>Germplasm conservation Germplasm banks Micropropagation</p>

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos - Prog. de Invest. en Cultivos Tropicales - INIAA [Tissue Culture Lab. - Tropical Crops Research Programme] (127)	Cassava Banana/plantain Native fruit trees	Somatic embryogenesis Organogenesis Meristem tip micropropagation	Micropropagation

DOMINICAN REPUBLIC

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Lab. de Cultivo de Tejidos y Fisiología de Plantas [Plant Tissue Culture & Physiology Lab.]-Instituto Superior de Agricultura - ISA (132)	Cassava Garlic Rice	Meristem tip micropropagation Inter-institutional germplasm exchange	Masal micropropagation Micropropagation Somatic embryogenesis
Laboratorio Duquesa - Secretaría de Estado de Agricultura (133)	Banana/plantain Tobacco Sweet potato	Meristem tip micropropagation Masal micropropagation Immunotechniques (ELISA)	Meristem tip culture Masal micropropagation

URUGUAY

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal [Plant Biotechnology Lab.] - Est. Exp. Las Brujas (139)	Potato Grape Strawberry	Meristem tip micropropagation Pathogen diagnosis	Micropropagation
Laboratorio de Biotecnología Vegetal - Facultad de Agronomía [Plant Biotechnology Lab. - Fac. of Agronomy] (140)	Citrus sp. Barley Eucalyptus sp.	Micropropagation micrografting Germplasm banks Anther and haploid culture	Micropropagation micrografting Germplasm banks

VENEZUELA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos - Instituto de Agronomía [<i>Tissue Culture Lab. - Agronomy Institute</i>] Univ. Central de Venezuela (145)	Cassava Potato Garlic	Meristem tip micropropagation Masal micropropagation Defence mechanisms against fungi	Masal micropropagation

CUBA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal [<i>Plant Biotechnology Lab.</i>] Univ. Central de las Villas (150)	Sugarcane Banana/plantain Papaya	Protoplasts (<i>in vitro</i> selection) Organogenesis Meristem tip culture	Protoplasts (<i>in vitro</i> selection) Organogenesis Meristem tip culture

5. IN VITRO PLANT METABOLITE PRODUCTION

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología - Facultad de Farmacia y Bioquímica - Univ. de Buenos Aires (009)	Potato Marigold Artemisia sp.	Secondary metabolites Genetic transfer with vectors	In vitro metabolites Suspended cell culture Secondary metabolites

COLOMBIA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Microbiología Industrial - Facultad de Ciencias [Industrial Microbiology Lab. - Fac. of Sciences] Univ. Industrial de Santander (066)	-	Metabolites energetic finality Metabolite proteins/enzymes	Genetic engineering Metabolite energetic finality

ECUADOR

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología Vegetal - Facultad Ciencias Agrícolas [Plant Biotechnology Lab. - Fac. of Agricultural Sciences] - Univ. Central (095)	Sweet cucumber	Masal micropropagation	Meristem tip culture
	Native fruit trees	Somaclonal variation	Germplasm banks
	Mulberry	Genetic transfer with vectors	Secondary metabolites

MEXICO

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biología Experimental - Centro Inv. Biológicas de Baja California [Experimental Biology Lab. - Baja California Biological Research Center] (100)	Beans	Secondary metabolites	Secondary metabolites
	Radishes/beets	Micropropagation	Metabolite protoplasts
		Somaclonal variation	Somaclonal variation
Laboratorio de Biotecnología de Células Vegetales - Depto. de Biotecnología-CINVESTAV [Plant Cells Biotechnology Lab. - Biotechnology Dept.] (109)	Pepper	Secondary metabolites	Metabolites (other studies)
	Marigold	Metabolites (other studies)	
	Other industrial crops	Crioconservation	In vitro metabolites

PERU

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Micología y Biotecnología [Mycology & Biotechnology Lab.] - Univ. Nacional Agraria La Molina (118)	Sugarcane Leucaena sp. Cotton	Protein/enzyme metabolites Direct genetic transfer Protoplast transformation	Metabolite protoplasts
Instituto de Bioquímica - Centro de Invest. en Bioquímica [Biochemistry Inst. - Biochemistry Research Center] - Univ. Nac. Mayor San Marcos (119)	Quinoa Andean tubers	Plant proteins and enzymes Action mechanisms Synthesis	Action mechanisms Metabolite studies Protoplast structure

5. PLANT PATHOGEN DIAGNOSIS

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Diagnósticos Vegetales SRL [<i>Plant Diagnosis</i>] (008)	Potato Strawberry Soyabean	Pathogen diagnosis Masal micropropagation	Pathogen diagnosis
Centro Regional Misiones - INTA Montecarlo (013)	Gigantic paradise (<i>Melia azederach</i>) Paraguayan grass (Maté) Citrus sp.	Immunotechniques (ELISA) Micrografting micropropagation Meristem tip micropropagation	Micrografting micropropagation Pathogen diagnosis
Química Biológica y Biología Molecular - Depto. Cs. Biológicas [<i>Biological Chemistry & Molecular Biology - Biological Sciences Dept.</i>]- Facultad Ciencias Exactas - Univ. Nac. La Plata (018)	Citrus sp. Tomato	Molecular sounds indexation Diagnosis (virus purification) Immunotechniques (ELISA)	Sounds indexation Diagnosis (purification)

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Instituto de Fitovirología - INTA [Phytovirology Institute] (020)	Garlic Soyabean Peach	Pathogen diagnosis Defence mechanisms against viruses Meristem tip micropropagation	Pathogen diagnosis Defence mechanisms against stress Micropropagation
INGEBI CONICET (022)	Potato Tobacco Pepper	Molecular sounds indexation Specific molecular hybridization	Molecular hybridization Molecular sounds Sounds indexation
Laboratorio de Fitopatología - Facultad Ciencias Agropecuarias - [Phytopathology Lab. - Fac. of Agricultural Sciences] - Univ. Nac. Córdoba (035)	Potato Strawberry Garlic	Diagnosis (virus purification) Meristem tip micropropagation Masal micropropagation	Pathogen diagnosis Micropropagation

BRAZIL

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Pesquisa e Desenvolvimento [Research & Development Lab.] - Bioplanta Tecnologia de Plantas S.A. (039)	Citrus sp. Banana/plantain Eucalyptus sp.	RFLP Pathogen diagnosis Cell and tissue culture	RFLP Pathogen diagnosis Cell culture
Centro de Biotecnologia do Estado do Rio Grande do Sul [Rio Grande do Sul State Biotechnology Center] (054)	Watersprouts Wheat Beans	Genetic engineering Pathogen diagnosis Plant defence mechanisms	Meristem tip culture Pathogen diagnosis Defence mechanisms
BIOMATRIX S.A. (058)	Potato Anthurium sp. Banana/plantain	Meristem tip culture Masal micropropagation Immunotechniques (ELISA)	Immunotechniques Micropropagation Masal micropropagation

CHILE

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Cultivo de Tejidos - Facultad de Ciencias Agropecuarias y Forestal [Tissue Culture Lab. - Fac. of Agricultural & Forestry Sciences] - Univ. de Concepción (082)	Blueberry	Meristem tip micropropagation	Pathogen diagnosis
	Asparagus	Pathogen diagnosis	
	Strawberry	Diagnosis (other studies)	

MEXICO

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
División de Biología Vegetal - Centro de Investigación Científica de Yucatán [Plant Biology Division - Yucatán Scientific Research Center] (110)	Citrus sp.	Somaclonal variation	Micropropagation
	Cactaceae	Meristem tip micropropagation	Organogenesis
	Native forest trees	Secondary metabolites	Indicator plants

PERU

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Virología Molecular - Centro Internacional de la Papa [Molecular Virology - International Potato Center] (122)	Potato Sweet potato Andean tubers	Pathogen diagnosis Molecular sounds indexation Defence mechanisms against viruses	Sounds indexation Immunotechniques Monoclonal antibodies

URUGUAY

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Dirección de Sanidad Vegetal - Ministerio de Ganadería, Agricult. y Pesca [Plant Sanitation Direction - Ministry of Livestock, Agriculture & Fisheries] (135)	Grape Potato Citrus sp.	Pathogen diagnosis Mechanisms (other studies)	Immunotechniques

VENEZUELA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología y Virología Vegetal -Inst. Venezolano de Invest. Científicas (IVIC) [Plant Biotechnology & Virology Lab. - Scientific Research Ven. Inst.] (147)	Potato Maize Soyabean	Pathogen diagnosis Immunotechniques (ELISA) Monoclonal antibodies	Pathogen diagnosis Defence mechanisms

7. PLANT DEFENCE MECHANISMS

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Instituto de Fitovirología - INTA [Phytovirology Institute] (020)	Garlic Soyabean Peach	Pathogen diagnosis Defence mechanisms against viruses Meristem tip micropropagation	Pathogen diagnosis Defence mechanisms against stress Micropropagation

BRAZIL

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Microbiologia - Centro Nac. de Pesquisa de Arroz e Feijao - EMBRAPA [Microbiology Lab. - National Rice & Beans Research Center] (047)	Beans Rice Cowpea	Defence mechanisms against bacteria RFLP Action mechanisms	Defence mechanisms against bacteria
Centro de Biotecnologia do Estado do Rio Grande do Sul [Rio Grande do Sul Biotechnology Center] (054)	Watersprouts Wheat Beans	Genetic engineering Pathogen diagnosis Plant defence mechanisms	Meristem tip culture Pathogen diagnosis Defence mechanisms

CHILE

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Programa de Biología Vegetal - Facultad de Recursos Naturales [<i>Plant Biology Programme</i> - <i>Fac. of Natural Resources</i>] - Univ. de Talca (081)	Notophagus sp.	Germplasm conservation	Defence mechanisms against viruses
	Eucalyptus sp.	Plant defence mechanisms	Defence mechanisms against insects
	Potato	Plant pathogen diagnosis	

URUGUAY

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
SESAR - Centro Invest. Hortícolas [<i>Horticultural Research Center</i>] - Semillería Santa Rosa S.A. (138)	Potato	Meristem tip micropropagation	Defence mechanisms against bacteria
	Artichoke	Organogenesis	
	Strawberry	Germplasm banks	

VENEZUELA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biotecnología y Virología Vegetal - Inst. Venezolano de Invest. Científicas (IVIC) [Plant Biotechnology & Virology - Venezuelan Scientific Research Institute] (147)	Potato Maize Soyabean	Pathogen diagnosis Immunotechniques (ELISA) Monoclonal antibodies	Pathogen diagnosis Defence mechanisms

8. **PLANT PROTEINS AND ENZYMES**

ARGENTINA

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
<p>FIBA - Fundación Para Investigaciones Biológicas Aplicadas [Applied Biological Research Foundation]</p> <p>(010)</p>	<p>Wheat</p> <p>Maize</p> <p>Tobacco</p>	<p>Defence mechanisms against stress</p> <p>Plant proteins and enzymes</p> <p>Isozymes</p>	<p>Proteins and enzymes</p> <p>Genetic mapping</p> <p>Molecular sounds</p>
<p>Inst. de Investigaciones Biológicas - Facultad Ciencias Exactas y Naturales [Biological Research Inst. - Fac. of Exact & Natural Sciences] - Univ. Nac. Mar del Plata (011)</p>	<p>Potato</p> <p>Wheat</p> <p>Soyabean</p>	<p>Plant proteins and enzymes</p> <p>Plant defence mechanisms</p> <p>Genetic mapping</p>	<p>Proteins and enzymes</p>
<p>Laboratorio de Biotecnología Vegetal - Facultad Ciencias Agropecuarias [Plant Biotechnology Lab. - Fac. of Agricultural Sciences]- Univ. Nacional de Córdoba (015)</p>	<p>Garlic</p> <p>Potato</p> <p>Sweet potato</p>	<p>Meristem tip micropropagation</p> <p>Genetic transfer with vectors</p> <p>Isozymes</p>	<p>Masal micropropagation</p> <p>Isozymes</p>

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
<p>Centro de Estudios Fitosintéticos y Bioquímicos (CEFOBI) [Photosynthetic & Biochemical Studies Center] CONICET - FUND. LILLIO - Univ. Nac.- Rosario (016)</p> <p>División Biología Molecular - Dpto. Ciencias Biológicas- Facultad Bioquímica y Farmacia [Molecular Biology Div.- Biological Sciences Dept.-Fac. of Biochemistry & Pharmacy] Univ. Nac. Rosario (017)</p>	Maize	Plant proteins and enzymes	Proteins and enzymes
	Stevia sp.	Direct genetic transfer	Direct genetic transfer
	Spinach	Specific molecular hybridization	Somatic embryogenesis
	Tomato	Plant proteins and enzymes	Proteins and enzymes
	Cowpea	Proteins (other studies)	Molecular sounds
	Spinach	Gene mapping	Sequencing

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio Bioquímica de la Diferenciación - Inst. Investigaciones Bioquímicas [<i>Biochemistry Differentiation Lab.- Biochemical Research Inst.</i>] - Fund. Campomar (021)	Carrot	Somatic embryogenesis (basic studies)	Somatic embryogenesis
	Tomato	Plant proteins and enzymes	Protein synthesis
	Sunflower	Protoplasts	Protoplast structure
Instituto de Biología Molecular - Centro de Investigaciones de Ciencias Veterinarias - INTA [<i>Molecular Biology Lab. - Veterinary Sciences Research Center</i>] (031)	Potato	Genetic transfer with vectors	Direct genetic transfer
	Wheat	Molecular sounds indexation	Sequencing
	Sunflower	Protoplasts (basic studies)	RFLP

CHILE

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Lab. de Bioquímica General - Facultad de Cs. Químicas y Farmacéuticas [<i>General Biochemistry Lab. - Fac. of Chemical & Pharmaceutical Sciences</i>] Univ. de Chile (073)	Citrus sp.	Plant defence mechanisms General molecular hybridization Specific molecular hybridization	Molecular sounds Protoplast structure

MEXICO

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Laboratorio de Biología Molecular de Plantas - Centro de Inv. Sobre Fijación de Nitrógeno - UNAM [Plant Molecular Biology Lab. - Nitrogen Fixation Research Center] (108)	Beans	Genetic engineering	Protoplast trans.
	Leucaena sp.	Cell and tissue culture	Molecular hybridization
	Other fodder	Plant proteins and enzymes	Protoplast structure
Departamento de Bioquímica - Facultad de Química - UNAM [Biochemistry Dept. - Fac. of Chemistry] (112)	Maize	Genetic engineering	Genetic engineering
	Wheat	Gene mapping	Somat. embryogenesis
	Beans	Action mechanisms	Action mechanisms

PERU

Name of Institution (Code)	Principal Species Targeted	Main Biotechniques Used	Area of Training Offered
Instituto de Bioquímica [Biochemistry Institute]- Centro de Invest. en Bioquímica - Univ. Nac. Mayor San Marcos (119)	Quinoa	Plant proteins and enzymes	Action mechanisms
	Andean tubers	Action mechanisms	Metabolite studies
		Synthesis	Protoplast structure

INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

IICA in St. Lucia, P.O. Box 1223, Castries, St. Lucia
Tel.: (809) 452-5482 / 452-1688, Telex: 6302 OASLU