Seminar on the interaction between plant variety protection and the use of plant breeding technologies

New breeding techniques: Public research institute perspective

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The National Institute of Agricultural Technology (INTA), is an official decentralized Organism at the Secretary of Agriculture, Livestock and Fisheries, with operational and financial autarchy created in 1956.
- Headquarters
- 15 Regional Centers
- 52 Experimental Stations
- 6 Research Centers
- 22 Research Institutes
- 359 Rural Agencies
- 2 Private Organizations
About **plant varieties**, since 1981, INTA registered at INASE **1025 varieties in the National List** and, at the moment, INTA has **280 varieties with PBRs in force**. (registered varieties from 107 species)

**Legal frame:** Law 20247 (Seeds and PVP) and Regulatory Decree 2183/1991; Law 24376 UPOV Convention 1978 Act.

**Regulatory Agricultural Biotechnology Procedures:** National Biotechnology Commission
Breeding tools used:

- Traditional breeding
- Breeding assisted by molecular markers
- Mutagenesis
- Gene editing
- Recombinant DNA (transgenics)
Some examples:

*Rice (imidazolinone resistance):*

- It is a trait developed by INTA (mutagenic)
- The trait is protected by Patent (INTA)
- 5 INTA varieties registered and protected by INTA (PBR).
- License for commercial purposes to BASF Company.
Some examples:

**Cotton** (herbicide and lepidoptera worm resistance):
- It is a trait developed by a Company (Monsanto)
- The trait is protected by patent (Monsanto)
- 3 INTA varieties registered and protected by INTA (PBR)
- License for seeds production and commercialization to GENSUS Company.
Some examples:

**Soybean (herbicide tolerance – RR1):**
- It is a trait developed by a Company (Monsanto)
- The trait is public now
- 5 INTA varieties registered and protected by INTA (PBR)
- License for seeds production and commercialization to Companies.
Some examples:

**Calibrachoa (Ornamental plant)**

- Varieties developed from native genetic resources.
- INTA recognize the rights of Provinces where the native resource was collected (Argentine National Constitution and legal frame)
- License to commercialization to foreign Company
- A mutant for flower color is detected by the licensee and the INTA PBR on the initial variety is recognized by licensee.
Technology Transfer Agreements:

- Rice (BASF Company)
- Cotton (Monsanto Co.)
- Cotton (Gensus Company)
- Soybean (Monsanto Co.)
- Calibrachoa (J&H Co.)
Other Agreements including new technologies:

- BASF Company: to develop rice varieties herbicide resistant
- BASF Co. And Louisiana University: to test no-GMO rice varieties (mutagenics)
- MTAs to test “IMI” rice varieties in Uruguay and Brasil
Other Agreements including new technologies:

- CORTEVA Company: to “enter” herbicide and insects resistance trait into INTA soybean varieties.
- MONSANTO Co.: to develop cotton GMO varieties using Monsanto cotton lines as donors.
- MONSANTO Co.: to use trait RR1 for soybean in breeding INTA program.
- StelaGenomics Mexico: phosphorus metabolism technology (develop in INTA germplasm and GMO regulation process)
Some INTA traits under evaluation (regulatory process at CONABIA – National Agricultural Biotechnology Commission)

- **Wheat**: Drought stress
- **Potato**: Virus resistance
- **Citrus**: Virus resistance
- **Cotton**: Coleoptera resistance
- **Lucerne**: herbicide tolerance; salinity resistance
- **Corn**: Drought stress; Virus tolerance; herbicide tolerance
Some considerations:

- Public Research Institutions: new and better varieties and products available and for the benefit of the whole society,
- Regulatory steps must be complished with scientific rigor,
- There are different contractual tools to interact with Entities or Companies (R&D; License; MTA; Cooperation Agreement, Confidentiality Agreements, etc)
- Intellectual Property and ownership of the results: must be clearly stablished in the Agreements,
- It is important to have specific areas to manage relationships between Institution, breeders and Companies,
- It is important for the Public Research Institutions to have clear rules about technology transfer taking into account the breeders/researchers participation in the final result and future benefits.
Thank you for your kind attention!

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