Use of Plant Variety Protection by National Research Centers
Brazilian Agricultural Research Corporation (EMBRAPA), Brazil

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Mission
“Facilitate solutions for research, development and innovation for sustainable agriculture for the benefit of Brazilian society.”

- Established in 1973
- 9342 employees
- 2282 researchers: 35% with masters degrees, 65% with doctorates
- Budget: US$ 1,1 billion
Our researchers work in 47 Decentralized Units spread across the country (there being 43 research units and 4 service units)

5 virtual laboratories abroad: Labex USA, Labex EU and Labex Asia; and 6 projects active in the TTR developed for tropical agriculture: four in Africa and two in the Americas.
Innovation at Embrapa

Innovation for Embrapa is the positive result of an integrated - endogenous and exogenous - process of research, development and transfer of sustainable solutions for with the society.

Embrapa works in a open innovation environment, with hundreds of partnerships with private and public sector in research, development and technology transfer.

Seed: a vector for Technology Transfer

- Adaptability
- Oil Content
- Moisture
- Resistance to Diseases
- Protein Content
- Nutritional Quality
- Specific Gene
- Seed Size
- Seed Color

Added Value for Producers
- Productivity
- Profitability
**PVP: A Business Model**

**PVP: A Business Model For Partnerships**

**Brazilian Innovation Law (Federal Law # 10973, of 2004)**

Article 9º

Science and Technology Institutions are allowed to enter into partnership agreements with public and private institutions for the joint implementation of science and technology research activities aiming at the development of technology, product or process. The Parties shall establish contractually how and to whom title on the intellectual property shall be granted, as well as their participation in the commercial results produced by that IP, assuring the right of partners to be licensed on that IP.
PVP: A Business Model For Partnership

Partnership Contracts with various Producers’ Foundations, congregating hundreds of producers;

Over 300 test sites for new cultivars located in Brazilian regions with edaphoclimatic conditions, as well as in, at least, 5 other Latin America Countries

Prior definition of the products (cultivars) to be developed/improved, jointly made by Embrapa’s researchers and the technical and marketing teams of the private partners

432 New cultivars protected in the last 13 years

- US $8 million invested in seed development research by private sector partners, - US $10 million in royalty revenues from seed licensing; - US $6 million as revenue for the sale of seeds; Totaling a US $22.2 million inflow for research, applied in the generation/improvement of cultivars in 2009

In the period 2009/2010, the average Brazilian national cultivar productivity was of only 2825 kilograms per hectare, while the average productivity of Embrapa’s cultivars were of 3384 kilograms per hectare, thus, showing a gain of 21% over the

PVP: Access to Third-Party Technologies

Global Map of Biotech Crop Countries and Mega-Countries in 2010

Source: Chris James, 2010
PVP: Access to Third-Party Technologies

**Patents in Brazil**
Between 2000 and 2007, Brazil processed 5381 patent applications in the biotechnology area, of which only 318 (5% of total deposits) were of Brazilian origin.

**Cultivars in Brazil**
1687 cultivars were protected in Brazil between 1997 and 2009. Over 55% of that total was Brazilian held, and Embrapa alone held title over 21% (357 cultivars).
PVP: Access to Third-Party Technologies

Embrapa is conducting simultaneously 52 breeding programs.

Today Embrapa works with 41 different transgenic programs.
PVP: Returns on Research Investment

Development in partnership

Direct Licensing with exclusivity rights

Breeders’ Foundations & Designated Growers

Development without partnership

Without exclusivity

Broad Offer
Process without Public Bidding

• Continuous flow of offers;
• Open access to all interested;
• Production by direct order

Restricted Offer
Requires Public Bidding

With exclusivity

• Offer through public announcement;
• Access restricted to bidding winners;
• Production demand defined in announcement
PVP: Returns on Research Investment

According to the Brazilian Ministry of Science and Technology from 2006 to 2009, Embrapa alone accounted for 80 per cent of the total royalties earned by all Brazilian public institutes (universities, R&D centers).

According to AUTM U.S., the average earnings from the transfer of technology by US public research institutions is equivalent to 0.9 per cent of their budgets. Embrapa’s earnings are equivalent to 2 per cent of its budget.
PVP: Returns on Research Investment

Brazilian agribusiness handles about 750 billion dollars per year.

Agriculture represents 28% of Brazilian GDP.

Agribusiness in Brazil generates more than 17 million jobs (37% of Brazilian workforce).

In the agriculture sector, Brazil is the 3rd largest exporter country in the world.

Every US$ 1.00 invested at Embrapa generates an average return of US$ R$ 6.40 for Brazilian society.

Embrapa generate a social surplus of US$ 11.62 Billion.

85,725 jobs generated by Embrapa Technologies.

710 relevant social actions.

Thank You!

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