

**INSTITUTE OF APPLIED RESEARCH IN SUSTAINABLE ECONOMIC
DEVELOPMENT – IPADES**

PRODUCTION AND PROTECTION OF CULTIVARS

Francisco Benedito da Costa Barbosa

Founding Partner – IPADES

The domestication of plants and animals, ten thousand years ago was characterized as a revolution in the *modus vivendi* of *Homo sapiens*, hence be called Agricultural Revolution. When plant, harvest and create animals in the same area made changes that have definitely changed the way of life of the human species. The effect of this revolution, food safety, division of labor and the emergence of civilizations have changed irreversibly the existential context of man, until then roving.

Over there of plant, harvest and create animals man began to observe the behavior of plant and animal species with which to work, with the aim of increasing production and their adaptation to new conditions that were imposed. Started to be born the breeding of plants and animals.

With the emergence of plant genetics, in the 19th century, with the monk Gregor Mendel (1822-1884), at work with peas, the capacity for improvement of plant species for the benefit of agriculture gave a qualitative and quantitative leap extraordinary.

For modern agriculture research in genetic improvement have become indispensable tool in the struggle for food security of a population that reaches in the second decade of the 21st century about nine billion people. Discover and produce varieties of agricultural plant species has become an imperative requirement. But, its cultivation is only possible if the availability of seeds and seedlings.

Seeds and seedlings are vital inputs in any system of agricultural production to ensure food production sustainable. The investment in its acquisition, each season, pays off, because it results in plant safety, productivity and financial return. When

compared to other inputs, represents a small portion of the composition of the total cost of production for the farmer, despite being the main input for good result in the crop.

The maintenance of the competitive potential of agriculture depends on the use of technology and seeds and seedlings. In the Brazilian case, it is still worrying the low rate of seed certified in important crops: wheat (68%); soybean (64%); cotton (57%), rice (52%); beans (19%), pasture (50%).

The patenting of new cultivars was established by Trade Related Aspects of Intellectual Property Rights (TRIPS), on the occasion of the creation of the World Trade Organization (WTO) in 1994, in Marrakesh. in Marocco, in place of the General Agreement on Tariffs and Trade (GATT), in 1945, in the wake of new economic order that emerged with the end of the Second World War.

Brazil has endorsed the Law no. 9,456, dated of 25 April 1997, known as the Law of Protection of Plant Varieties (LPC, acronym in Portuguese), of relevance to the public policies related to the Brazilian agricultural sector. With it the country attended the commitment made by the WTO, but also modernized their structures, what was laid down in the Director Plan for Reform of the State Apparatus, put into practice in the 1990s.

This law provided significant breakthrough in obtaining new cultivars, either by searching public as by private, which translates into the evolution in relation to the production area and productivity. If the productivity of cereals and oilseeds (known as grains) remained at the levels of the harvest of 1997/98, it would be necessary that agriculture in the harvest of 2016/17 occupy area of 97,430 million hectares to generate the planned production. But the occupation is 59,159 million hectares, i.e., released 38,271 million hectares for other activities. This is because the producers had access to cultivars that are more productive, more adapted to new environmental conditions and the different planting times and/or resistant to pests and diseases.

The table below shows this evolution of the area, production and productivity between 1997/98 and 2016/17.

ITEM	Units	1997/98	2016/17*	Variation/%
Area	Million/ha	35,001	59,159	70.02
Production	Million/ton	76,559	213,079	178.32
Productivity	Kilograms/ha	2,187	3,602	64.70

*Data of December/2016. Source: Conab.

The LPC spurred companies to develop several releases of cultivars, because it ensures the intellectual property on the farm recently launched. Another law directed to the theme was promulgated in March 2005.

Is the Law no 11,105, known as the Law of Biodiversity (LB). She came to discipline, among other matters, the research, planting and Marketing of Genetically Modified Organisms (GMOs, acronym in Portuguese) and their derivatives. Established the National Technical Commission on Biosafety (CTNBio, acronym in Portuguese) and the National Council for Biosafety (CNBS, acronym in Portuguese) as bodies responsible for matters concerning the release activities of research and commercial use of OGMs. The reaction was positive in the sector of seeds, initially in the cultivation of soybean, advancing to the maize and cotton. Today, Brazil has approximately with 38 companies owners of patents of cultivars of corn, 25 soybean and seven of cotton. The LB provided to farmers access to biotechnology has already used in other countries, such as the United States and Argentina.

These laws have benefits for farmers to access the best and most diverse choices of varieties and technologies. In the segment of research, the forest sector is featured in scientific knowledge, and in the application of the most varied techniques of biotechnology. There has been an aggregation of important characteristics in terms of cycle, time of planting, tolerance to diseases and insects, as well as the size and quality of the fiber in the forest species. This enabled new systems of production, openings of agricultural frontiers, and more recently the restoration of degraded areas.

The establishment and improvement of a regulatory framework for the Brazilian agribusiness, in line with the agreements and treaties of international trade, mean the opening of doors to the Brazil abroad, an important factor for the player of agribusiness, which is the country. Food production is increasingly a factor of strategic

importance for the few countries which enjoy the status of power in this segment. Brazil is one of them.