



MAPA launches the National Program for Biobased Agricultural Inputs



Use of biological resources in Brazilian agriculture gains momentum. The Ministry of Agriculture, Livestock and Food Supply (MAPA) is launching the **National Program for Biobased Agricultural Inputs**, also called the Bio-input Program. The idea is to sustainably explore the potential of Brazilian biodiversity in order to reduce farmers' dependence on imported inputs and expand supply of raw materials for the sector. "With this Program, we will enhance quality and reliability of biobased inputs, consequently improving Brazilian farming and benefiting agricultural value chains and consumers", says Cleber Soares, Innovation Director at the Ministry of Agriculture, Livestock and Food Supply (MAPA).

The program is central for the bioeconomy vision that his office is developing, targeting access, development and sustainable use of the rich Brazilian biological diversity. Goal is to support development of new solutions, creating new jobs and income and improving livelihoods for farmers and other stakeholders from different segments of the agribusiness supply chains, delivering value to the whole society. "The farming sector and the world demand more sustainable technologies. Agriculture is the basis of our economy and bioeconomy will be the great lever to keep Brazil as a protagonist in global agribusiness", the Director also states.

The bio-input portfolio is wide and includes everything from inoculants, plant growth promoters, biofertilizers, ingredients for plant and animal nutrition, plant extracts, pest, parasites and diseases control agents. These are made from beneficial microorganisms such as fungi; bacteria and mites, reaching herbal compounds or technologies that have biological agents in their composition, whether for plants and animals, as well as for post-harvest and food processing.

"This program was originated from the growing demand from society, in particular, from two audiences: consumers and farmers who are looking for inputs and products with lower economic and environmental burden, which will surely benefit the entire Brazilian agribusiness", evaluates the MAPA's Bio-inputs Program coordinator, Mariane Vidal.

Bioinsumos



Due to its broad concept, explains Mariane, goal of this program is to involve not only products, but processes and technologies of biological origin - either animal, plant or microbial based - that bring positive results in development and response mechanism for these same elements and their derived substances. "Our expectation is to cover a large number of processes, products and technologies to promote a set of sustainable practices related to bio-inputs", says the coordinator.

The Bio-input Program proposes to provide a strategic set of actions for developing alternatives for crops, livestock and aquaculture production, considering economic, social, agronomic and environmental dimensions. It aims to encourage adoption of sustainable bio agents based on technologies, products and processes developed from renewable resources, through combined actions from science, technology and innovation players, together with the farming sector and market.

Biodiversity

Harboring the greatest biodiversity in the world, Brazil is able to become the largest global player in the area of science, technology and innovation on bio-inputs. With this rich supply of raw materials, the program's goal is to develop several fronts, involving plant and animal production as well as processing and post-harvest. This includes development of products and processes for aquaculture.

The pathway to be followed by this governmental program, which was created in partnership with the private sector, is to encourage and promote development of bio-inputs, from local and regional raw materials, generating hard currency, creating jobs, improving incomes and organizing - in the medium and long term - a new value chains across the country.

The Bio-input Program was brought up by a working group formed by members of different MAPA departments, always in close consultation with the productive sector. Based on these guidelines, the next step is to organize the legal framework for this segment and facilitate farmers' access - whether small, medium or large, organic or not - to different biobased inputs, including those already authorized for agriculture.

For coordinator Mariane Vidal, bio-inputs represent a new paradigm for Brazilian and global agriculture. "Sustainable food production makes itself more competitive in the international market, especially the European market, which already buy from Brazil", considers the coordinator.



Guidelines

The program will be implemented in stages and it is structured in areas related to: phytosanitary products to control pests and plant diseases; biofertilizers; plant nutrition and tolerance to adverse environmental conditions; veterinary and animal feeding products, post-harvest and processing of animal and plant products as well as aquaculture.

Another goal is to create a favorable environment for fostering and financing infrastructure and operational costs - through credit and other economic benefits for the sector - and also for technological innovation on bio-inputs.

Another action will establish rules and protocols for installation of bio-input production units i.e. bio-factories, and to discuss specific legal procedures to optimize product registration processes in order to ensure legal compliance for both, manufacturers and farmers.

In the implementation stages, there will be further data collection about the sector; public calls to finance innovation projects; preparation of production protocols for farmers and a national bio-input catalog, among other actions.





Market

The number of biological pest control products registered with the Ministry of Agriculture, Livestock and Food Supply (MAPA) has been increasing. Currently, there are 265 registered products, including bioacaricides, bioinsecticide, biofungicides and ant control products.

In 2019, the domestic market for biobased pest control agents moved BRL 675 million, growing around 15% over the figures from 2018, as well as they are above the estimated average growth of the international market. These data are from Croplife Brasil, an institution that represents development and innovation industries in the areas of biotechnology, germplasm, chemical pesticide and biobased pest control products. The global average of new registered biobased products per year has increased from three to eleven in the past decade.

Also, according to them, in 2018, the sector carried out a survey, involving users of biobased products in 15 Brazilian States and 11 different crops. The conclusion was that 96% of respondents believe that the use (adoption rate) of biobased pest control products will grow in the next five years.

The Brazilian Agricultural Research Corporation (Embrapa), subordinate to MAPA, has extensive research work on pest biological control. There are 632 scientists working on 73 projects related to the subject over 40 research units. Recognizing the importance of the theme, Embrapa has created a specific research portfolio on the subject in order to strengthen and correlate initiatives. In addition, the institution has several microbial germplasm banks dedicated exclusively to preservation and characterization of microorganisms, biological pest control agents and plant growth promoters. A collection that totals more than 10,000 strains of bacteria, fungi and viruses that control pests and plant diseases and more than 14,000 strains of nutrient-fixing microorganisms and plant growth promoters, maintained in at least seven separate Embrapa research units.

The registration of a biobased pest control agent in Brazil undergoes procedures for evaluating effectiveness and application in the field. This is responsibility of MAPA. Regarding the degree of toxicity to humans, the analysis falls to the National Health Surveillance Agency (Anvisa) and the assessment of toxicological impacts on the environment is responsibility of the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama).

It is worth mentioning that the federal agencies responsible for registration consider specificities and characteristics of different product categories, such as biobased agents vs chemicals, in order to establish criteria for evaluation. These criteria are established in specific regulations for each type of product.