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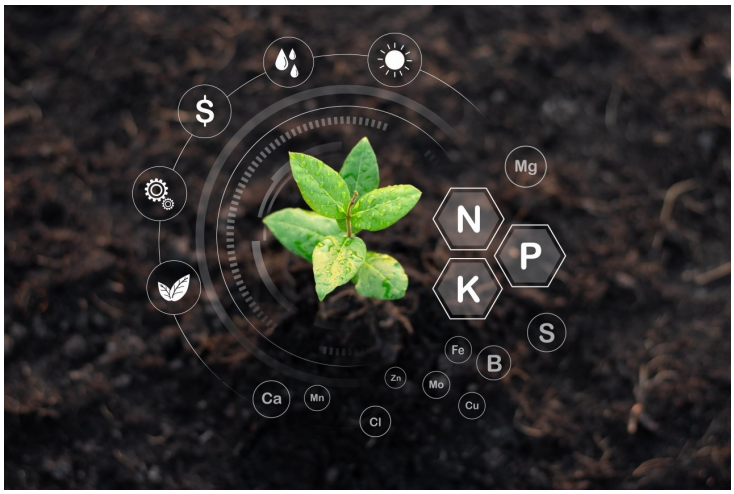
China builds National Biopesticide Evaluation Platform as industry moves toward standardization

07 September 2026 | News

The new 42.8 million yuan platform will connect biopesticide R&D, safety testing, registration and application as China seeks to build a more standardized biological crop-protection industry



China is stepping up efforts to build the regulatory and technical infrastructure needed to commercialize the next generation of crop-protection products, with the establishment of a national biopesticide evaluation center at the Jiangsu Academy of Agricultural Sciences. The National Biopesticide Evaluation Center has been established with a construction budget of 42.8 million yuan and is among the first national full-chain evaluation platforms for biopesticides in China. Only two facilities of this kind currently exist nationwide.

The center is designed to connect the development of biopesticides with the testing, safety evaluation and registration processes required to bring them to market. Its scope will include microbial pesticides, RNA interference-based pesticides and botanical pesticides, creating a single platform spanning research and development through registration and application. “This marks a new stage of standardized and regulated development for China’s biopesticide industry,” the center’s director said.

The investment comes as biopesticides gain importance in the global shift toward lower-impact crop protection. Unlike conventional chemical pesticides, biological products use microorganisms, RNA interference, plant-derived active ingredients and other biological mechanisms to control pests and diseases. Their potential to reduce environmental impact while maintaining crop protection has made them an increasingly important part of agricultural innovation strategies.

For China, the push is also closely tied to food security and efforts to reduce agricultural pollution. Government policies, including the 14th Five-Year Plan for Accelerating Agricultural and Rural Modernization, have identified biopesticide research, development and adoption as important tools for improving agricultural sustainability and controlling non-point source

pollution. But the industry has faced a problem that cannot be solved by technology alone: standards and evaluation systems have not always kept pace with the products being developed.

China's existing pesticide evaluation framework has historically been designed around chemical pesticides. That creates challenges for products whose modes of action and biological characteristics are fundamentally different, particularly microbial and RNAi-based pesticides. Industry experts have pointed to gaps in product quality standards and safety evaluation criteria, along with concerns around inconsistent product quality and efficacy. For companies attempting to commercialize new biological crop-protection technologies, those gaps can add uncertainty to development, registration and market entry. The new national platform is intended to address that bottleneck. Its operating model is built around a continuous cycle in which research supports evaluation, evaluation supports application, and real-world application feeds information back into research and development.

Five functional laboratories will support the platform, covering product chemistry evaluation, efficacy evaluation, environmental safety evaluation, toxicological evaluation and crop safety evaluation. The center is also introducing three quality-management systems—CMA, CATL and GLP—to strengthen the reliability and credibility of its testing and evaluation work. "This will ensure the authority and international mutual recognition of evaluation data," the center's director said. That capability could become increasingly important as Chinese developers seek not only domestic approvals but also greater acceptance of their biological crop-protection products in international markets.

Rather than focusing solely on final-stage pesticide testing, the platform will cover a wider range of activities. These include identification of strain resources, high-throughput screening of active ingredients, analysis of mechanisms of action, safety assessments and guidance on registration applications. The objective is effectively to create a one-stop pathway for biopesticide developers seeking to move products from laboratory research toward commercial deployment. That model reflects a broader change in how the biological crop-protection sector is developing. As more companies and research institutions move into microbial technologies, RNA-based crop protection and botanical actives, the competitive challenge is shifting from discovering new biological solutions to demonstrating that they can deliver consistent efficacy, safety and quality under regulatory scrutiny.

Regarding China, building a standardized evaluation infrastructure could help reduce that gap. The center will operate with product research and development as its driving force, evaluation services as its support system and industrial application as its ultimate objective. Its mandate includes filling gaps in the existing evaluation standards, integrating research, testing and commercialization, and aligning China's evaluation capabilities with international technologies and practices.

The investment also signals that biopesticides are moving beyond the role of niche alternatives to conventional chemistry. As governments tighten environmental requirements and growers face growing pressure to manage resistance and reduce chemical inputs, biological crop protection is becoming an increasingly strategic segment of the agricultural input market. Yet the sector's expansion will depend on more than scientific breakthroughs. Developers need predictable regulatory pathways, reliable testing methodologies, consistent manufacturing standards and data that customers and regulators can trust.

China's new national evaluation center is designed to provide precisely that infrastructure. If successful, the platform could help shorten the path between biological discovery and commercial application while giving regulators a more appropriate framework for evaluating technologies that do not fit neatly into conventional chemical-pesticide models.