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# Brazil approves CTCâ??s transgenic sugarcane as biotechnology redraws economics of sugar-energy complex

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In a decision that underscores Brazilâ??s deepening entrenchment within the frontier of agricultural biotechnology, the countryâ??s National Technical Commission on Biosafety (CTNBio) has granted approval to a new genetically modified sugarcane developed by Centro de Tecnologia Canavieira (CTC), marking a significant inflection point in the evolution of the global sugar-energy sector.

The newly sanctioned biotechnology platform, branded VerdPRO2, integrates dual traits of resistance against the sugarcane borerâ??one of the most economically destructive pests in the industryâ??with tolerance to widely used herbicides such as glyphosate. This convergence of pest resistance and chemical resilience positions the technology as a potentially transformative intervention in a sector long burdened by high input costs, biological stressors, and operational inefficiencies.

At its core, VerdPRO2 represents a strategic extension of CTCâ??s broader genetic innovation agenda, expanding its pipeline beyond earlier insect-resistant sugarcane varieties into a more comprehensive agronomic architecture designed to streamline field management and enhance productivity. According to the company, as many as 14 commercial varieties incorporating the new trait stack are under development, with phased market introduction expected during the 2026â??27 season, subject to remaining regulatory clearances.

In its initial deployment phase, CTC plans to roll out the technology selectively through monitored commercial cultivation programmes, enabling the systematic collection of field-level agronomic data. This approach reflects an increasingly data-driven model of agricultural biotechnology adoption, wherein real-world performance metrics are used to refine management protocols and optimise varietal deployment at scale.

CÃ©sar Barros, Chief Executive Officer of CTC, described the approval as a meaningful advancement for Brazilâ??s sugar-energy ecosystem, emphasising its role in expanding the suite of technological tools available to improve both productivity and sustainability outcomes across sugarcane cultivation systems.

The technological significance of VerdPRO2 lies not merely in its genetic architecture but in its operational implications. By conferring resistance to sugarcane borersâ??responsible for an estimated BRL 8 billion in annual lossesâ??and enabling more flexible herbicide regimes targeting persistent weed species such as brachiaria and crabgrass, the platform seeks to materially reduce both yield losses and chemical management complexity.

Equally consequential is its potential to reduce phytotoxic risks associated with herbicide application, thereby offering growers greater precision and safety in crop protection strategies. In a sector where margin compression is frequently driven by escalating input costs, such efficiencies are increasingly central to long-term competitiveness.

CTC has positioned this approval within a broader strategic ambition to double sugarcane productivity by 2040, leveraging integrated advances in genetics, mechanisation, planting systems, and precision agronomy. This signals a deliberate shift from incremental yield improvements toward systemic productivity transformation, with biotechnology functioning as a central pillar rather than a peripheral enhancement.

Brazilâ??s expanding adoption of genetically modified sugarcane places it among a limited group of countries actively commercialising transgenic cane at scale, reflecting both regulatory openness and the strategic importance of sugar and ethanol production to its national energy matrix. In this context, biotechnology is no longer framed merely as an agricultural innovation, but as an instrument of industrial policy and energy security.

However, the company has not indicated whether additional approvals will be required in importing jurisdictions before wider international commercialisation of products derived from VerdPRO2 varietiesâ??an omission that underscores the persistent regulatory asymmetries that continue to shape global agri-biotech trade.

As Brazil advances deeper into the era of engineered crops, VerdPRO2 stands as both a technological milestone and a policy signal: that the future of sugarcane is increasingly being written not in fields alone, but in genomes, algorithms, and regulatory chambers.