

Syngenta adds Kyoyu Agri's Cyclopyranil to its PPO Herbicide portfolio

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Strategic partnership targets Asian rice markets, adding a new mode-of-action option for resistant barnyardgrass as Syngenta expands its PPO herbicide pipeline through external partnerships



Syngenta and Japan's Kyoyu Agri have entered a strategic partnership to commercialise cyclopyranil-based herbicide solutions in selected Asian rice markets, adding a new rice-specific molecule to Syngenta's expanding portfolio of protoporphyrinogen oxidase (PPO) inhibitors.

Announced on October 12, 2026, under the joint datelines of Basel and Tokyo, the agreement positions Syngenta as the distribution and commercialisation partner for the herbicide, while Kyoyu Agri retains attribution as the ingredient's developer. The companies have not disclosed the countries covered by the agreement, commercial timelines or financial terms.

Cyclopyranil will be Syngenta's first paddy-field herbicide targeting the PPO enzyme, also classified under Herbicide Resistance Action Committee (HRAC) and Weed Science Society of America (WSSA) Group 14. The partnership adds a new mode of action to its rice herbicide portfolio at a time when resistance among paddy weeds, particularly barnyardgrass, is complicating weed management across Asian rice-growing regions.

The agreement also marks Syngenta's second significant PPO herbicide commercialisation arrangement in six months. In April 2026, the company signed an overseas development agreement with China's Jiangshan Pesticide & Chemicals for isoxafenacil, a non-selective PPO inhibitor. The two transactions point to a broader strategy of accessing externally developed active ingredients to strengthen its herbicide pipeline and expand its options for resistance management.

Cyclopyranil builds on Kyoyu Agri's pyraclonil expertise

Cyclopyranil, also known by its development code KY-1211, belongs to the pyrazolylpyrazole chemical class. Its development builds on the broader research lineage associated with pyraclonil, an established paddy-field herbicide, although the two

active ingredients are distinct molecules.

Pyraclonil was originally discovered by Germany's Schering AG. Following subsequent changes in ownership of the agrochemical business, Bayer transferred the ingredient to Yashima Chemical Industry, Kyoyu Agri's predecessor, in 2002 for development in Japan. It received Japanese registration in December 2007.

Kyoyu Agri has reported that pyraclonil ranked first in sales among single-active-ingredient paddy herbicides in Japan for nine consecutive years, with penetration of approximately 50 per cent of Japanese rice cultivation and 30 per cent in South Korea. The ingredient subsequently obtained US federal registration in August 2023 and California approval in February 2024.

This experience provides a relevant commercial and technical foundation for Kyoyu Agri's next-generation rice herbicide development. Cyclopyranil is designed for pre-emergence and post-emergence weed control, with particular attention to maintaining efficacy against weeds at more advanced growth stages.

Barnyardgrass is a persistent challenge because its early growth can resemble rice, making identification and removal difficult. Its competition for nutrients, water and light can reduce crop performance, while resistance to established herbicide modes of action narrows growers' management options.

Cyclopyranil's reported activity at low application rates and across multiple weed growth stages could therefore offer a differentiated option for rice producers. Its commercial performance, however, will depend on local weed spectra, application practices, registration conditions and field validation in each target market.

Japan becomes the first registration market

Japan completed the first registration of cyclopyranil in March 2026, following a regulatory process covering product safety, dietary exposure and residue standards.

The first product registration was granted on March 30, 2026, for a 1 per cent granular formulation. Additional products and combination formulations followed in April, expanding the ingredient's initial commercial presence in the Japanese rice herbicide market.

These formulations combine cyclopyranil with other herbicide active ingredients, reflecting the importance of multi-active-ingredient products in paddy weed management. Such combinations can broaden weed-control coverage, although their effectiveness depends on the target species, resistance profile and appropriate use conditions.

The Japanese registrations mark a transition from development to commercial deployment. With the first sales season beginning in 2026, Kyoyu Agri has identified cyclopyranil as a potential growth driver for its business.

The company's patent filings also provide a long-term basis for commercial development. Its core patent application, published as WO2015020156A1, was filed in 2014, with protection reported in major markets including China, the United States, Japan and South Korea extending to 2034.

The next phase will be international expansion. The Syngenta partnership offers Kyoyu Agri access to a wider distribution network and experience in navigating registrations across multiple markets. The pace of expansion will depend on national registration requirements, residue standards, local agronomic trials and the commercial priorities agreed by the partners.

Why the partnership matters to Syngenta

For Syngenta, cyclopyranil addresses a specific gap in its rice herbicide portfolio rather than simply adding another molecule to an increasingly competitive PPO category.

PPO inhibitors have attracted renewed attention as agricultural companies seek alternatives to herbicides facing resistance challenges. However, the commercial value of a new PPO molecule depends on its selectivity, weed spectrum, application flexibility, crop compatibility and performance against difficult weed populations.

Cyclopyranil's rice-specific positioning gives it a distinct role alongside isoxafenacil, which is being developed for non-selective weed control in broader agricultural settings.

The contrast is strategically relevant: isoxafenacil offers a route into non-selective weed management, while cyclopyranil is intended for selected rice markets. Together, the agreements broaden Syngenta's access to externally developed PPO chemistry across different agricultural use cases.

The approach also allows Syngenta to complement its internal research pipeline with molecules developed by specialist agrochemical companies. For Kyoyu Agri, meanwhile, the agreement offers a route to international markets without requiring it to build an equivalent global commercial infrastructure independently.

Neither transaction, however, guarantees immediate revenue. Registration, field evaluation, distribution arrangements and grower adoption will determine how quickly the ingredients translate into commercial sales.

The PPO market is becoming more competitive

The partnership comes as established multinational companies and emerging agrochemical innovators expand their PPO inhibitor pipelines.

BASF's saflufenacil has established a position in broadleaf weed management, while trifludimoxazin has advanced through international registration and commercialisation. Sumitomo Chemical's epyrifenacil and Farm Hannong's tiafenacil represent additional efforts to expand the commercial reach of newer PPO chemistry.

Chinese agrochemical companies are also increasing their presence. Qingyuan AgroSciences has pursued international expansion for flufenoximacil, including markets in Southeast Asia, while Jiangshan Pesticide & Chemicals has advanced isoxafenacil through domestic registration and its overseas development agreement with Syngenta. Other Chinese developers are progressing additional PPO inhibitor molecules through naming, registration and commercial development pathways.

The market is consequently becoming more crowded, making differentiation increasingly important. New PPO inhibitors will need to demonstrate advantages beyond the mechanism of action itself, whether through weed spectrum, crop selectivity, application timing, dose efficiency or compatibility with integrated weed-management systems.

For rice cultivation, the central opportunity lies in addressing resistant weeds under field conditions where herbicide choice is constrained by crop safety, water management and planting practices. A molecule that can reliably control larger barnyardgrass plants could occupy a valuable niche, provided field performance and resistance-management benefits are established across target markets.

Two transactions, one portfolio strategy

Syngenta's April agreement for isoxafenacil and October partnership for cyclopyranil suggest a deliberate effort to strengthen its PPO herbicide offering through external innovation.

The arrangements differ in scope and application. The isoxafenacil agreement concerns overseas development and commercialisation, with a broader global-market ambition. Cyclopyranil is focused on selected Asian rice markets, where resistance management and the availability of effective paddy herbicides remain significant agronomic concerns.

For Kyoyu Agri, the partnership provides a platform to take a proprietary ingredient beyond Japan. For Syngenta, it adds a rice-focused option to a portfolio that is also gaining access to non-selective PPO chemistry.

The commercial test will be whether these molecules can deliver measurable value to growers while sustaining effective resistance-management practices. In a market where the PPO mechanism is attracting more competitors, Syngenta's advantage will depend less on the number of active ingredients it secures and more on how effectively it translates them into differentiated, locally registered solutions.