

China clears first Microencapsulated Fluopyram products for root-knot nematodes

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Registrations signal a shift toward sustained-release crop protection technologies in the domestic market



China has approved its first fluopyram-based microcapsule suspension-suspension concentrate (ZC) formulations for the control of root-knot nematodes, marking a significant advancement in nematicide formulation technology. The newly registered products comprise 7 percent abamectin + fluopyram ZC for use in cucumber and 15 percent abamectin + fluopyram ZC for tomato, both targeting root-knot nematodes (*Meloidogyne* spp.).

The approvals represent the first registration of fluopyram in a microencapsulated formulation for nematode control in China, expanding the country's portfolio of fluopyram-based crop protection solutions beyond conventional formulations.

Fluopyram is recognised as the first nematicide to act on mitochondrial respiratory complex II, offering a unique mode of action for nematode management. The active ingredient is widely regarded as a low-toxicity solution for both users and the environment and plays an important role in resistance management as part of integrated nematode control programmes.

With the latest approvals, China now has 24 registered fluopyram-abamectin co-formulations for nematode control. The market has been dominated by 17 suspension concentrate (SC) products available in 5 percent, 8 percent, 15 percent and 28 percent concentrations. In addition, four granule (GR) formulations have been registered at 0.45 percent, 1.5 percent and 3 percent, while one water-dispersible granule (WG) formulation is available at 60 percent concentration.

The introduction of the two ZC formulations marks a notable shift from the market's long-standing reliance on suspension concentrates and reflects growing adoption of sustained-release formulation technologies within China's crop protection

industry.

Microencapsulation technology is expected to address several limitations associated with conventional abamectin formulations, including rapid photodegradation and limited field persistence. By improving the controlled release of active ingredients, the new formulations are anticipated to extend residual efficacy, enhance storage stability, reduce application frequency and minimise environmental impact through the elimination of organic solvents during the formulation process.

The registrations are also expected to reshape competition within China's nematocide market by diversifying the fluopyram formulation landscape beyond the increasingly competitive suspension concentrate segment. The move provides formulators with an additional technology platform while supporting more efficient and sustainable management of root-knot nematodes in high-value horticultural crops.