February 7, 2026

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Cultivar Semanal

Insect eyes inspire technologies

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FMC is evaluating the sale of the company and projects a drop in revenue in 2026.

The company prioritizes debt reduction, portfolio adjustment, and expansion into new active ingredients.

05.02.2026 | 07:13 (UTC -3)

Cultivar Magazine, based on information from Nicole Canning

FMC Corporation has begun a process to evaluate strategic options, including the

potential sale of the company. The decision came from the board of directors and coincides with the release of fourth-quarter and full-year 2025 results, as well as projections for 2026.

The company has defined its priorities for 2026 as strengthening its balance sheet, improving the competitiveness of its core portfolio, and managing the post-patent phase of the insecticide Rynaxypyr (chlorantraniliprole). The strategy includes reducing US$1 billion in debt through asset sales and licensing agreements. FMC had already announced the sale of its commercial business in India.

The company also remains focused on expanding its line of new active ingredients. The plan involves Isoflex

(bixlozone), fluindapyr, Dodhylex (tetflupirolimet), and rimisoxafen. The company believes these products and the development pipeline can increase shareholder value through greater investment and accelerated growth.

Revenue projection

For 2026, FMC projects revenue between US$3,60 billion and US$3,80 billion, a 5% decrease at the midpoint compared to 2025. The company anticipates price pressure at mid-single-digit levels, primarily due to Rynaxypyr, in line with its post-patent strategy. Sales of new active ingredients are expected to reach between US$300 million and US$400 million, growth exceeding 75% at the midpoint.

Adjusted EBITDA is projected to be between US$670 million and US$730 million for 2026, a 17% decrease. Adjusted earnings per share are expected to be between US$1,63 and US$1,89. Free cash flow could fluctuate between negative US$65 million and positive US$65 million.

2025 results

In the fourth quarter of 2025, FMC reported revenue of US$1,08 billion, a 12% decrease year-over-year. The decline reflected price reductions, particularly for Rynaxypyr, and increased competition for products in its core portfolio, especially in Latin America. Adjusted quarterly EBITDA totaled US$280 million, a 17% decrease.

In 2025, total revenue reached US$3,47 billion, a decrease of 18% compared to 2024. Sales of new active ingredients reached approximately US$200 million in the year. The annual net result showed a loss, impacted by an accounting write-down of goodwill associated with the devaluation of shares and adjustments to the India business.

The strategic review is still in its preliminary stage. The company stated that there is no guarantee of transaction completion and that further comments will only be provided if deemed necessary.

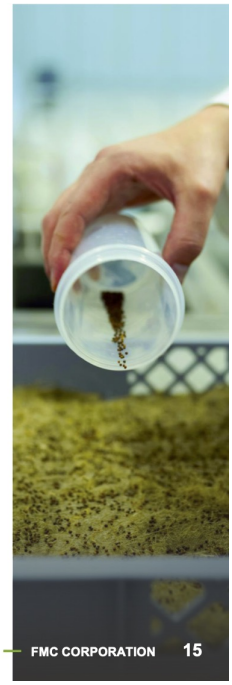
FY 2025 Results

	FY 2025	FY 2024	2025 VS. 2024[3]
GAAP Revenue	$3,467	$4,246	(18)%
Revenue ex. H2 '25 India[1,2]	*$3,889*		*(8)%*
GAAP Net Income	$(2,237)	$342	$(2,579)
Adjusted EBITDA[1]	$843	$903	(7)%
% Revenue (ex. H2 '25 India)	*21.7%*	*21.3%*	*40 bps*
GAAP EPS	$(17.88)	$2.72	$(20.60)
Adjusted EPS[1]	$2.96	$3.48	(15)%

Note: Amounts in millions of USD except for EPS

FY 2025 HIGHLIGHTS

- Commercial actions taken in India to position the business for sale led to lower GAAP revenue
- Excluding India, lower sales mainly due to price adjustments to diamide partners and lower price from competitive market
- 54% growth of new active ingredients
- Strong cost favorability driven by lower manufacturing costs
- Adjusted EBITDA[1] margin (ex. India) in-line with prior year
- GAAP Net Income negatively impacted by goodwill impairment and India charges and adjustments



1. Denotes non-GAAP financial term. Refer to "Non-GAAP Financial Terms" at the beginning of this presentation.
2. FY 2024 Revenue included India results

FY 2025 Regional Revenue Drivers

REGIONAL REVENUE BRIDGE (Excluding India)[1]

Note: Amounts in millions of USD; "Asia" column excludes India

FY 2025 REVENUE DRIVERS (Excluding India)[2]

	VOLUME	PRICE	FX	India (H2 2024)
Total: -8%	1%	-6%	(0)%	-3%
Organic[1]: -8%				

North America — $1,102 million (-6% YOY)

- Volume growth led by new product launches, primarily fluindapyr
- Branded price decline in low-single digits

Latin America — $1,351 million (-3% YOY, -3% ex-FX)

- Volume growth driven by new product launches and additional route to market in Brazil
- Branded price decline in mid-single digits
- Volume growth in high load Rynaxypyr formulation

Asia[2] — $564 million (-33% YOY, -32% ex-FX)

- India sales removed for H2 2025, included in FY 2024
- Lower core product volume due to competitive markets
- Branded price decline in mid-single digits

EMEA — $872 million (4% YOY, 4% ex-FX)

- Higher volume as herbicides and Cyazypyr® growth outpaced planned registration losses
- Branded price essentially in-line with prior year

Lower global diamide partner pricing

1. Denotes non-GAAP financial term. Refer to "Non-GAAP Financial Terms" at the beginning of this presentation.
2. Excludes H2 2025 India, includes FY 2024 India; on a like-for-like basis sales were down 20% year-over-year

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Insect eyes inspire technologies in pest management.

A scientific review details how the biology of insect vision underpins light traps, UV films, and selective optical systems.

03.02.2026 | 08:02 (UTC -3)

Cultivar Magazine

Photo: Joseph Berger

Insect vision underpins essential behaviors such as flight, foraging, reproduction, and predator evasion. This ability results from diverse ocular structures, shaped by millions of years of evolution. A scientific review describes how it underpins visual technologies applied to the management of agricultural pests, focusing on selectivity and reducing the use of chemical insecticides.

Insects utilize three main types of visual organs. Compound eyes predominate in adults. Ocelli are involved in flight control. Stemata appear in larvae. Compound eyes form the primary visual system. Each eye contains hundreds to tens of thousands of units called ommatidia. The quantity and organization vary according to the species' habits. Dragonflies have approximately 30

ommatidia per eye, with high spatial acuity. Parasitoid wasps have only a few dozen, with lower resolution.

The review describes a central biological trade-off. The visual system can prioritize spatial acuity or light sensitivity. Diurnal insects, such as bees, use apposition eyes. Each ommatidium functions in isolation. This arrangement favors the distinction of details and colors. Nocturnal insects, such as moths, use superposition eyes. Several lenses concentrate light on the same photoreceptor. The system amplifies light capture, with a loss of resolution. Flies adopt an intermediate solution. The neural superposition system increases sensitivity without significantly reducing acuity.

Response to artificial light

These structural differences directly influence how insects respond to artificial light. Visual perception does not follow the human pattern. Many insects respond intensely to ultraviolet, blue, and green wavelengths. The review points out that traditional incandescent lamps do not exploit these sensitivities. Therefore, modern traps use LEDs with spectral emission adjusted to the target insect.

Reported studies indicate up to a 50% increase in capture when the wavelength coincides with the visual sensitivity of the target species. Mosquitoes and sandflies

respond efficiently to UV and blue LEDs. Psyllids show attraction to blue, yellow, and amber. In contrast, certain beetles reduce their response to these wavelengths. This difference allows for selective management strategies.

Inhibition of behaviors

Besides attracting animals, light can also inhibit behavior. Yellow or green lighting interferes with the feeding and oviposition of nocturnal pests. Some wavelengths act as visual repellents. The mechanism involves disrupting signals used for spatial orientation and flight stabilization.

The review describes passive interventions based on environmental optics. UV-

blocking plastic films, used in greenhouses, reduce infestation by whiteflies and thrips. The blockage makes visual recognition of the host difficult. Visible light remains available for plant photosynthesis. Reflective ground covers produce a similar effect. The reflection of sunlight disorients insects in flight and reduces landing on crops.

Computer systems

The text also presents advances in computational systems. Models that simulate insect vision guide the design of traps. These models consider the sensitivity of photoreceptors and the low spatial resolution of the compound eye. This application is already occurring in the

control of thrips and tsetse flies, using traps with colors that are not intuitive for the human observer.

At the technological forefront, the review describes the so-called "photonic fence." The system combines optical sensors, computer vision, and laser pulses. The equipment detects the insect in flight and neutralizes the target in real time. Field trials cited in the article indicate efficiency greater than 97% against mosquitoes and psyllids, with low interference on non-target insects. The mechanism does not involve chemical compounds, which reduces the risk of resistance.

Phototransduction

The biological basis of these technologies lies in phototransduction. Photoreceptors convert light into electrical signals through rapid molecular cascades. The process involves opsins sensitive to different wavelengths. The diversity and expression of these genes vary between species and environments. Bees exhibit trichromatic vision with sensitivity to ultraviolet, blue, and green. Beetles from dark environments have lost some of this diversity, with reduced visual systems.

The review highlights that understanding insect vision is progressing from the anatomical to the molecular level. This knowledge supports more precise visual solutions in integrated pest management.

Further information at doi.org/10.3390/insects17020167

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New Holland unveils R4 autonomous robot at event in France.

Hybrid and electric model targets vineyards, orchards and specialty crops.

02.02.2026 | 10:31 (UTC -3)

Cultivar Magazine, based on information from Facundo Cabrera

New Holland will present the R4 autonomous robot during GOFAR Field

Day France, one of the leading agricultural robotics events in Europe, which takes place next Thursday (February 5th) in Auzeville-Tolosane Agrobiopole, at the Toulouse Sud-Est technology park. The event brings together farmers and producers interested in autonomous solutions for the field.

The R4 comes in two versions: a hybrid and a fully electric one. Both are suitable for vineyards, orchards, and other specialty crops. The project aims to address labor shortages. The proposal allows for the redistribution of skilled workers, previously allocated to simple tasks such as mowing and soil preparation, to more complex and managerial activities.

The robot is controlled via an app. The system integrates GPS, LIDAR, and vision cameras. This combination ensures precise and reliable operation in the field. Movement is achieved using suspended rubber tracks, which increase traction and reduce soil compaction. The continuously variable electric transmission powers existing or new implements without the use of hydraulic oil, reducing maintenance, weight, emissions, and costs.

According to Thierry Lhotte, Global Manager for Grapes, Olives and Coffee at New Holland, the R4 has generated strong interest since its debut at Agritechnica 2025. The executive stated that the concept demonstrates relevance for specialized crops and can bring significant benefits to producers.

Read more information about the R4 autonomous robot by clicking on "New Holland showcases autonomous robots for vineyards and orchards.".

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Click here and watch on Instagram

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Gene expression explains host choice in crop moths.

Study identifies sensory proteins linked to host choice, mating, and oviposition.

06.02.2026 | 09:37 (UTC -3)

Cultivar Magazine

Photo: Jessica Louque, Smithers Viscient

Researchers have identified and compared, on a genome-wide scale, genes linked to chemoreception in two of the world's major solanaceous pests. The work mapped protein families involved in odor detection in the Colorado potato tuber moth (*Phthorimaea operculella*) and in the tomato leafminer (*Phthorimaea absoluta* The results indicate molecular targets with potential for behavior-based management strategies.

In the genome of *Phthorimaea operculella* The authors identified 47 odor-binding proteins (OBPs), 26 chemosensory proteins (CSPs), and two sensory neuron membrane proteins (SNMPs). In P. absoluta, the survey found 39 OBPs, 24 CSPs, and two SNMPs. The proteins act in the transport of volatile compounds to

olfactory receptors and participate in host selection, mating, and oviposition.

Gene expression analysis, based on RNA-seq, showed strong tissue and sex specificity in *Phthorimaea operculella* Antennae concentrated the majority of OBP and CSP expression. Twenty-four OBPs and four CSPs showed sexually differentiated expression in the antennae. Females exhibited higher expression of 14 OBPs and four CSPs. Males concentrated ten OBPs, one CSP, and the SNMP2 protein.

Reproductive organs

Reproductive organs also showed distinct patterns. The ovipositor concentrated three

OBPs and one CSP with greater expression. The male genitalia concentrated six OBPs and five CSPs. No SNMP showed a significant difference between these tissues. The pattern suggests a role for soluble proteins in short-range chemical evaluation during oviposition and mating.

During larval development, OBP expression occurred primarily in the head, with low activity in the digestive tract. This indicates a function related to food location rather than digestion. Some OBPs also appeared in the integument, hemolymph, and fat body, suggesting additional functions beyond classical olfaction.

Evolutionary comparison

Evolutionary comparison revealed differential gene expansion between the two species. *Phthorimaea operculella* It presented a broader repertoire of soluble carrier proteins. The pattern suggests greater molecular diversity for recognizing volatiles from the host and the oviposition substrate.

The authors highlight that genes with high expression in the ovipositor and antennae of females emerge as candidates for functional studies. These targets may support the development of attractants, repellents, or behavioral disruption strategies. The study also points to

proteins associated with pheromones in males as potential points of intervention in mating confusion programs.

Further information at doi.org/10.3390/insects17020178

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Symbiotic bacteria ensure the survival of Rhynchophorus ferrugineus.

Peptides control Nardonella and ensure tyrosine synthesis and the insect's survival.

06.02.2026 | 09:11 (UTC -3)

Cultivar Magazine

Photo: Mike Lewis, Center for Invasive Species Research

The insect *Rhynchophorus ferrugineus* It depends on an endosymbiotic bacterium to form its exoskeleton and complete its life cycle. A study identified two antimicrobial peptides that maintain this association. The finding indicates a new target for managing the pest, which is responsible for severe damage to palm trees in various regions of the world.

Researchers identified the peptides RfAMP1 and RfAMP2 in bacteriocytes, specialized cells of the insect. These compartments house bacteria. *Candidatus Nardonella* spp., an ancestral symbiont of weevils maintained for over 125 million years. The bacterium has preserved only the biosynthesis pathway for tyrosine, an amino acid necessary for the formation of the host's exoskeleton.

The peptides did not exhibit classic immune function. Expression followed the dynamics of *Nardonella* and responded to the presence of the symbiont, not to infections by pathogens. Analyses indicated the location of the peptides in the bacterial membrane and cytoplasm.

The silencing of RfAMP1 or RfAMP2 by RNAi led to the loss of spatial control of the bacteria. *Nardonella* It escaped from bacteriocytes and reached midgut tissues. Bacterial abundance also increased within host cells. At subinhibitory concentrations, the peptides increased bacterial membrane permeability.

The loss of peptide function compromised tyrosine biosynthesis. The larvae showed a sharp decline in survival. The results

indicated that RfAMPs regulate symbiotic homeostasis and support insect fitness.

Rhynchophorus ferrugineus causes significant losses in palm tree crops, such as *Cocos nucifera* e *Elaeis guineensis*The study indicates that the interruption of the obligatory symbiosis with *Nardonella* This could enable new control strategies based on destabilizing this molecular link.

Further information at doi.org/10.1002/ps.70604

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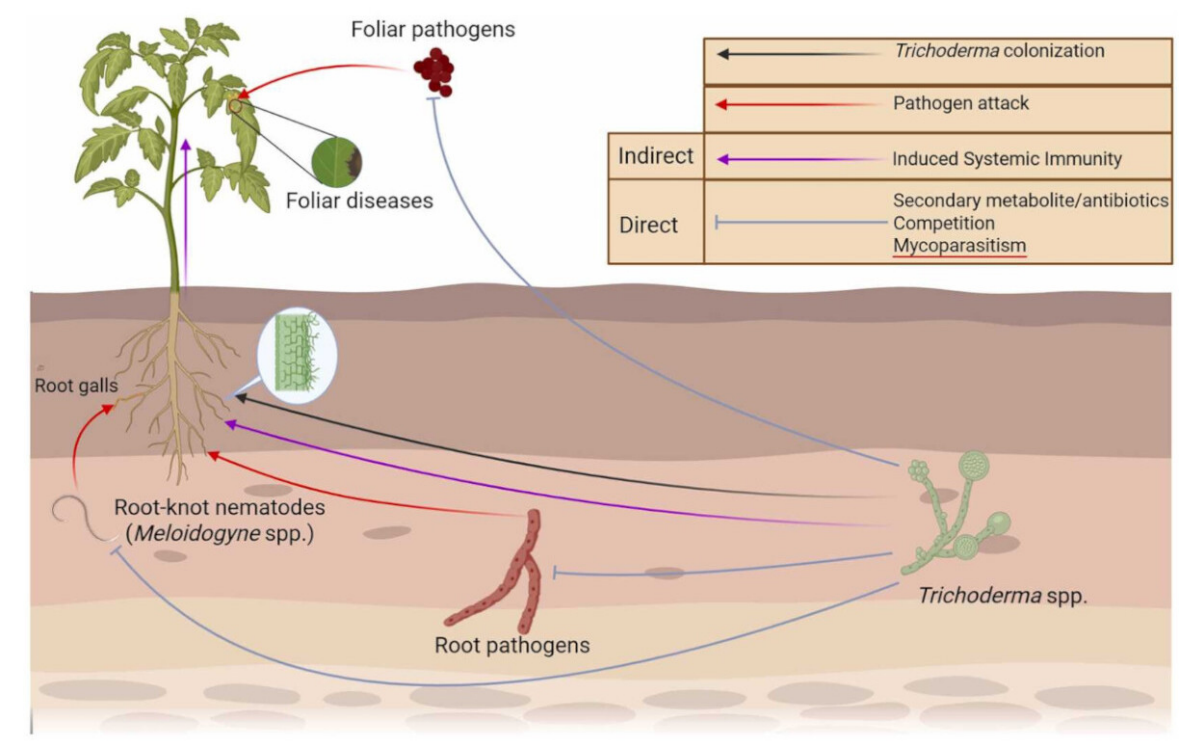
Trichoderma activates systemic plant immunity through RNA control.

Review integrates small RNAs and chromatin marks to explain durable resistance without metabolic cost.

06.02.2026 | 08:25 (UTC -3)

Cultivar Magazine



The interaction between plants and fungi of the genus *Trichoderma* It induces durable systemic immunity without constitutive activation of defenses. The process depends on regulation by small RNAs and epigenetic consolidation. This integration explains the maintenance of defensive readiness with low metabolic cost. This conclusion is based on a scientific review conducted by Chinese researchers.

The work describes that root colonization by *Trichoderma* It reorganizes profiles of microRNAs, siRNAs, and long non-coding RNAs. These RNAs define defense priorities. Control occurs post-transcriptionally and at the chromatin level. The plant adjusts hormonal sensitivity and response thresholds. The defense remains

inducible, not active.

The authors point out that microRNAs modulate conserved regulatory modules. These modules connect growth, hormones, and immunity. Examples include axes that adjust auxin, reactive oxygen species, and jasmonate-dependent pathways. The effect results in gradual responses, consistent with induced systemic resistance.

Argonaut Proteins

The review highlights the role of siRNAs associated with Argonauta proteins. These complexes direct RNA-dependent DNA methylation. Methylation occurs in regulatory regions. The effect adjusts gene

induction capacity. The mechanism stabilizes the primate state without permanently silencing genes.

Long non-coding RNAs emerge as an additional layer. They act as scaffolds, decoys, or competitive regulators of microRNAs. They also interact with chromatin. This interaction integrates hormonal and immune signals. The result reinforces regulatory flexibility in rhizosphere environments.

At the epigenetic level, the review describes permissive and repressive histone marks in combination. Chromatin remains in a "ready" state. Activation occurs rapidly after pathogenic challenge. The plant avoids the costs of continuous expression. Chromatin accessibility

changes in a localized and reversible manner.

Proposed model

The proposed model interprets induced systemic resistance and acquired systemic resistance as points on a regulatory continuum. The differences depend on the intensity and duration of RNA and epigenetic signals. This approach overcomes rigid classifications based solely on hormones.

The review also points out gaps. Functional validations of long RNAs in systems with [unclear] are lacking. *Trichoderma*There is variation among fungal strains. Field conditions can alter

the stability of the priming. Temporal and causal studies are still needed.

The study concludes that immunity induced by *Trichoderma* This results from a regulatory state. Small RNAs define priorities. Epigenetics consolidates functional memory. The plant preserves growth and fitness. The concept provides a basis for sustainable crop protection strategies.

More information at doi.org/10.1016/j.plantsci.2026.113030

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Agricultural Market - Feb. 6, 2026

Soybeans react after US sales announcement to China.

06.02.2026 | 08:14 (UTC -3)

Vlamir Brandalizze - @brandalizzeconsulting

Soybeans gained momentum this week following statements by US President Donald Trump regarding negotiations with

China. Trump reported a conversation with Xi Jinping and cited a commitment from the Chinese to complete 20 million tons of American soybeans in the 2025/26 crop year. The volume could rise to 25 million tons in 2026/27. The market reacted with a strong increase in Chicago, pushing contracts above US$11 per bushel.

The price increase supported dollar prices and helped the terms of trade for Brazilian producers. This movement eased the pressure caused by rising fertilizer prices. Analysts warn of caution in fixing prices above US$11,10, given the historical volatility of American political discourse. Even so, the market is attempting to establish support near US$11.

In Brazil, soybean production has halted its downward trend. The harvest is progressing and has reached approximately 15% of the national area, with 26,5 million tons harvested. Mato Grosso leads the efforts, with about 35% harvested. Paraná accounts for 25%. Goiás reaches 8%. Rondônia reaches 25%. A large part of the volume settles advance contracts.

Crop conditions range from good to excellent, despite occasional rainfall shortages in Rio Grande do Sul. The planted area is growing and approaching 50 million hectares, maintaining expectations of a large harvest. Sales of the new crop remain delayed, with approximately 34% negotiated, below the historical average. The scenario indicates

supply pressure in the next 60 to 90 days.

In the international market, demand for vegetable oil sustains the soybean complex. The harsh winter in the northern hemisphere increases the consumption of fats. There are signs of oil purchases by China and India. The biofuel sector awaits stimulus for biodiesel in the United States, which expands the use of soybean oil. Animal feed also sees increased demand due to the intense cold.

Corn situation

Corn followed the positive trend. In Chicago, March futures are trying to hold at US$4,30 per bushel. July futures are trading above US$4,40. The market

reflects strong demand for ethanol and animal feed. In Brazil, the planting of the second corn crop (safrinha) has reached 18%, below the ideal level for February. Goiás and Mato Grosso have around 25% planted. Paraná has 20%. Domestic prices have stopped falling, with expectations of a recovery after Carnival.

Wheat situation

Wheat prices are being closely watched as the polar winter in the Northern Hemisphere approaches. The climate risk has not yet generated a significant reaction in Chicago. In Brazil, mills are gradually resuming purchases with the return to school. Prices are showing stability.

Rice situation

Rice prices have begun to recover in Rio Grande do Sul. Indications point to an increase in the state market, with exports expected to exceed 2 million tons in the new season. The smaller planted area reduces national production to approximately 11 million tons. Adjustments in supply within Mercosur reinforce this positive trend.

Bean situation

In the bean market, the short supply from the first harvest is driving up prices. Carioca beans are registering new highs, with prices nearing R$ 300 per sack for premium lots. Black beans have lost

momentum after strong increases in January, pressured by retail promotions and the progress of the harvest in Paraná. The outlook remains for low supply in the coming months.

By **Vlamir Brandalizze** - *@brandalizzeconsulting*

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Entomopathogenic fungus shows high control of Euchistus crenator.

Isolates of Beauveria bassiana reach mortality rates of up to 87,5%.

05.02.2026 | 10:48 (UTC -3)

Cultivar Magazine

Photo: Lindsey Seastone, USDA

Isolates of entomopathogenic fungi *beauveria bassiana* They demonstrated high potential in controlling *Euschistus crenator*, a soybean pest recorded in Northern Brazil. The effect occurred without compromising the function of the egg parasitoid. *telenomus podisi*The result indicates the viability of their combined use in integrated pest management.

In laboratory tests, all isolates evaluated caused mortality in second-instar nymphs. The most notable were LCMAP106, UFSM-01, and the commercial strain PL63, which achieved 83,75%, 75%, and 87,5% cumulative mortality after ten days, respectively. The lethal time for 50% of the population ranged from 6,4 to 7,3 days in the most effective treatments.

The study simulated near-field conditions by exposing insects to contaminated surfaces, rather than direct application. This approach reflects operational limitations of spraying and the insect's reliance on contact with residues. Mortality increased progressively between the sixth and tenth day.

Besides *beauveria bassiana*, an isolate of *Penicillium bilaiae* The mortality rate reached 71,25%. This result broadens the spectrum of agents active against stink bugs associated with soybeans. The hypothesis involves action through toxic metabolites, and not through cuticular infection.

Selectivity towards the parasitoid *telenomus podisi* Parasitism remained high. Parasitism rates exceeded 88% after

24 hours of exposure and were above 69% after 72 hours, with no differences compared to the control. Survival of adult females did not vary between treatments.

The treatments influenced biological parameters of the parasitoid. There was a reduction in progeny emergence after 72 hours for some isolates and a temporary alteration in the sex ratio after 24 hours. Despite this, parasitism performance remained high.

The work was developed by Paulo Henrique Martins da Silva, Gustavo Andrade Carneiro, and Ricardo Antonio Polanczyk.

More information at doi.org/10.1002/ps.70614

Photo: Lindsey Seastone, USDA

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AGCO presents its 2025 figures.

Company reports US$10,1 billion in revenue, reduces inventory, and projects growth in 2026.

05.02.2026 | 09:42 (UTC -3)

Cultivar Magazine, based on information from Rachel Potts

AGCO ended 2025 with net sales of US$10,1 billion, a 13,5% decrease year-over-year. The company released its fourth-quarter and fiscal year results today. The company increased its cash generation and indicated improved

performance in 2026.

Reported earnings per share for the year reached US$9,75. Adjusted earnings per share totaled US$5,28. The reported operating margin closed at 5,9%. The adjusted operating margin reached 7,7% in 2025.

In the fourth quarter, net sales totaled US$2,9 billion. This represents a 1,1% increase compared to the same period in 2024. Excluding currency effects, quarterly revenue decreased by 5,3%. Reported earnings per share were US$1,30. Adjusted earnings per share reached US$2,17.

Operating cash flow totaled US$988 million in 2025. Free cash flow reached a record US$740 million. Free cash

conversion reached 188% of adjusted profit, according to the company.

Sales by region

By region, fourth-quarter sales grew 7,9% in Europe and the Middle East, with an operating margin of 16,8%. Asia, the Pacific, and Africa advanced 5,1%. North America declined 7,8%. South America fell 3,3% during the period.

For the year to date, North America recorded a 27,5% drop in sales. South America fell by 7,7%. Europe and the Middle East remained stable. Asia, the Pacific, and Africa showed a 9,9% decline.

Agricultural income

The company pointed to pressure on global agricultural income in 2025. Prices for corn, soybeans, and wheat remained close to the breakeven point. Input costs remained high. Demand for new machinery decreased in key markets, with the greatest impact on high-horsepower tractors and combine harvesters.

For 2026, AGCO projects net sales between US$10,4 billion and US$10,7 billion. The company estimates an adjusted operating margin between 7,5% and 8,0%. Earnings per share are expected to range from US$5,50 to US$6,00, considering the current trade tariff scenario.

FINANCIAL SUMMARY $M**

REPORTED	Q4 25	Q4 25 vs. Q4 24	YTD 25	YTD 25 vs. YTD 24
NET SALES	$2,920.2	1.1%	$10,082.0	(13.5)%
GROSS MARGIN	25.4%	150bps	25.5%	60bps
OPERATING INCOME	$230.7	185.8%	$595.7	587.9%
OPERATING MARGIN	7.9%	1,720bps	5.9%	690bps
DILUTED EPS	$1.30	$4.72	$9.75	$15.44

ADJUSTED	Q4 25	Q4 25 vs. Q4 24	YTD 25	YTD 25 vs. YTD 24
ADJ. OPERATING INCOME*	$295.1	3.4%	$781.0	(25.1)%
ADJ. OPERATING MARGIN*	10.1%	20bps	7.7%	(120)bps
DILUTED ADJUSTED EPS*	$2.17	$0.20	$5.28	$(2.22)

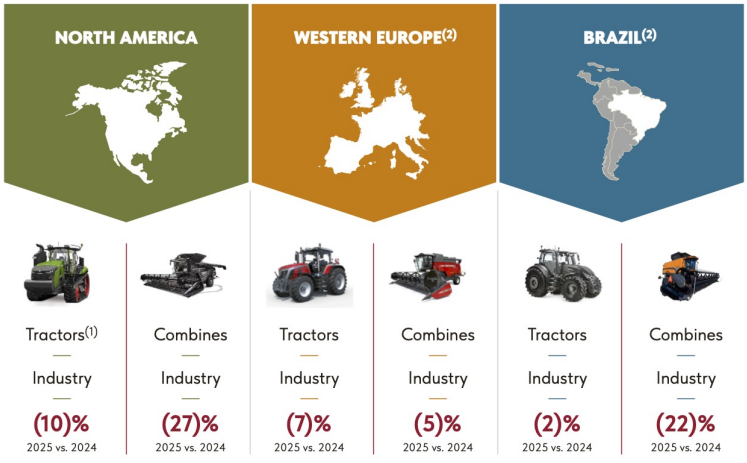
*Reflects non-GAAP measures. See reconciliations provided in the appendix to this presentation.
**Except per share amounts

AGCO Your Agriculture Company

3

INDUSTRY OVERVIEW

December 2025 Year-to-Date Retail Units



(1) Excludes compact tractors
(2) Amounts based on Company estimates

AGCO Your Agriculture Company

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Syngenta aims for a Hong Kong IPO of up to US$10 billion in 2026.

The offering could be among the largest in the world this year and includes the sale of up to 20% of the shares.

05.02.2026 | 09:19 (UTC -3)

Cultivar Magazine, based on information from Reuters.

Syngenta Group, owned by the Chinese state-owned company Sinochem, plans an initial public offering (IPO) in Hong Kong that could raise up to US$10 billion in 2026. The operation would place the company among the largest global IPOs of the year. The company is negotiating with banks to structure the offering. The talks involve both global and Chinese institutions. This information was released by Reuters.

Sources cited by the news agency indicate that Syngenta may sell up to 20% of its capital. The final size and timeline still depend on market conditions. Changes remain possible.

The company stated that it does not comment on market rumors. It said that it

evaluates capital market access strategies according to the scenario and the interests of its shareholders. It reiterated its intention to return to the market when it deems the time appropriate.

Part of the IPO proceeds should reduce debt, according to people familiar with the plan.

The Hong Kong listing would occur almost two years after Syngenta abandoned its IPO application in Shanghai. At the time, the company cited the industry environment and its development strategy for the decision. Last year, information circulated about the IPO in Hong Kong (see more in "Syngenta is considering going public in Hong Kong.")

Sinochem, or Sinochem Holdings Corporation Ltd., is a Chinese state-owned enterprise, owned by the government of the People's Republic of China. It is directly supervised by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), the body responsible for managing the country's state-owned enterprises.

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Crop rotation with grasses maintains soybean bacteria for up to 70 days.

Research under field conditions indicates that oats, ryegrass, wheat, triticale, sorghum, and sunflower function as ecological niches.

05.02.2026 | 08:42 (UTC -3)

Cultivar Magazine

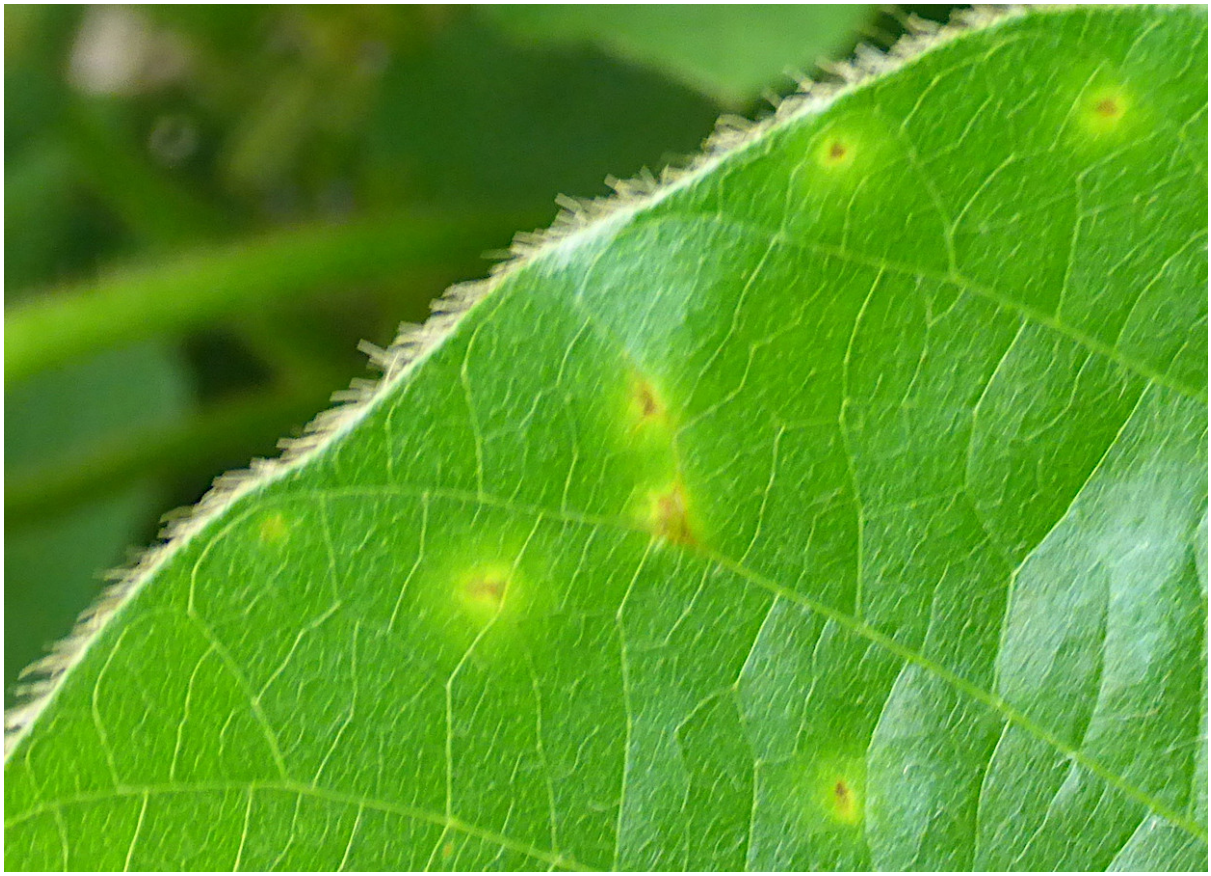

Photo: Tristan Mueller

Crops used in soybean rotation keep the bacteria that cause bacterial pustule and bacterial brown spot alive for up to 70 days. The effect occurs in leaves and roots. Grasses and some dicotyledons function as ecological niches. This finding increases the risk of residual inoculum between crops.

The result comes from a field experiment that evaluated the survival of *Xanthomonas citri* p.v. *wisteria* e *Curtobacterium flaccumfaciens* pv *flaccumfaciens*The study measured the persistence period and area under the population curve in eleven species used in soybean rotation, during two distinct agricultural seasons.

In the phyllosphere, *xanthomonas* The bacteria persisted for up to 70 days in ryegrass and sorghum in both growing seasons. Wheat, black oats, and white oats also sustained the bacteria for long periods, with high areas under the curve. Forage turnip showed the lowest values. Soybeans maintained the bacteria for up to 28 days, with lower population intensity.

In the rhizosphere, *xanthomonas* Survival reached 70 days in ryegrass, triticale, wheat, and white oats in at least one experiment. Plant-free soil reduced survival to a maximum of 14 days, the lowest performance among the treatments.

For Curtobacterium, persistence was even more widespread. In the phyllosphere, ryegrass, triticale, wheat, white oats, black

oats, and sorghum sustained the bacteria for 70 days. Crotalaria reached 70 days in one of the growing seasons. Sunflower and corn showed a reduction in the second growing season. In the rhizosphere, virtually all grasses reached the maximum evaluation limit. Turnip maintained the shortest periods.

Varied analysis

Multivariate analysis associated higher survival rates with precipitation and temperature. The effect was strongest in the rhizosphere. Grasses clustered with longer final periods and larger areas under the curve. Soybeans, corn, and turnips diverged from these vectors.

The study indicates that the culture's identity is more important than the niche evaluated. Leaves and roots showed similar patterns within each species. Poaceae consistently stood out. The explanation involves structural characteristics and root exudates that favor microbial retention and activity.

Conclusions

The practical conclusion is straightforward. Crop rotation with white oats, black oats, ryegrass, crotalaria, corn, sorghum, wheat, triticale, and sunflower is not recommended in areas with a history of bacterial pustule and bacterial brown spot. These species maintain active inoculum between crops and increase the risk in

subsequent soybean crops.

The authors emphasize that integrated management depends on choosing crops that do not favor the survival of pathogens. Eliminating alternative hosts reduces inoculum pressure in the system. The evidence was generated under natural conditions, with phenotypic and molecular confirmation of the recovered bacteria.

The study was conducted by Luana Laurindo de Melo, Daniele Maria do Nascimento, Marcos Giovane Pedroza de Abreu, José Marcelo Soman, and Tadeu Antônio Fernandes da Silva Júnior.

Further information at doi.org/10.1007/s40858-025-00787-0

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Fendt 728 Vario leads tractor registrations in Germany in 2025.

The model has registered 1.007 vehicles and places the brand in the top three positions of the annual ranking.

05.02.2026 | 08:21 (UTC -3)

Cultivar Magazine, based on information from Fendt

Fendt has registered the best-selling tractor in Germany in 2025. The 728 Vario model achieved 1.007 new registrations

and occupied the first position in the annual ranking. The survey considered tractors with power starting from 0 hp. The data came from the German Federal Motor Transport Authority (KBA) and the German Engineering Federation (VDMA).

The German market totaled 25.711 new tractor registrations in 2025. This volume represented a 12% decrease compared to 2024. Even with this decline, Fendt maintained its national leadership, with 6.314 tractors registered across all power classes.

The 728 Vario is part of the seventh-generation Fendt 700 Vario series. The ranking placed the Fendt 724 Vario in second position, with 868 registrations. The Fendt 620 Vario came in third place, with 515 units.

Fendt occupied the top three positions for the second consecutive year. The 700 series concentrated the largest market share among single series from manufacturers. The 724 and 728 models together accounted for 7,3% of all new tractor registrations in the country.

The Fendt 724 Vario led the German ranking for more than ten years, until 2023. In 2025, it maintained second place for the second consecutive year. The Fendt 620 Vario entered the top three for the first time. In 2024, the third position went to the Fendt 516 Vario.

Six models from the brand appeared among the ten most registered tractors in Germany in 2025. The list also included the Fendt 314 Vario, Fendt 718 and Fendt 516 Vario.

According to Fendt's sales management in Germany, the 728 Vario's performance reflects the model's suitability for the demands of farmers and service providers. The company attributed the result to the performance of its sales team and its partnership with the dealer network, even in a declining market environment.

Top 10: Registrations & market shares for tractors from 0 hp
Germany in 2025

Place	Manufacturer	Units	Market Share (in %)
1.	Fendt	6,326	24.6
2.	John Deere	4,360	17.0
3.	Claas	2,126	8.3
4.	Deutz-Fahr	1,990	7.7
5.	Kubota	1,856	7.2
6.	Case IH/Steyr	1,510	5.9
7.	New Holland	1,274	5.0
8.	Valtra	923	3.6
9.	Massey Ferguson	910	3.5
10.	Sonalika	864	3.4

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FENDT

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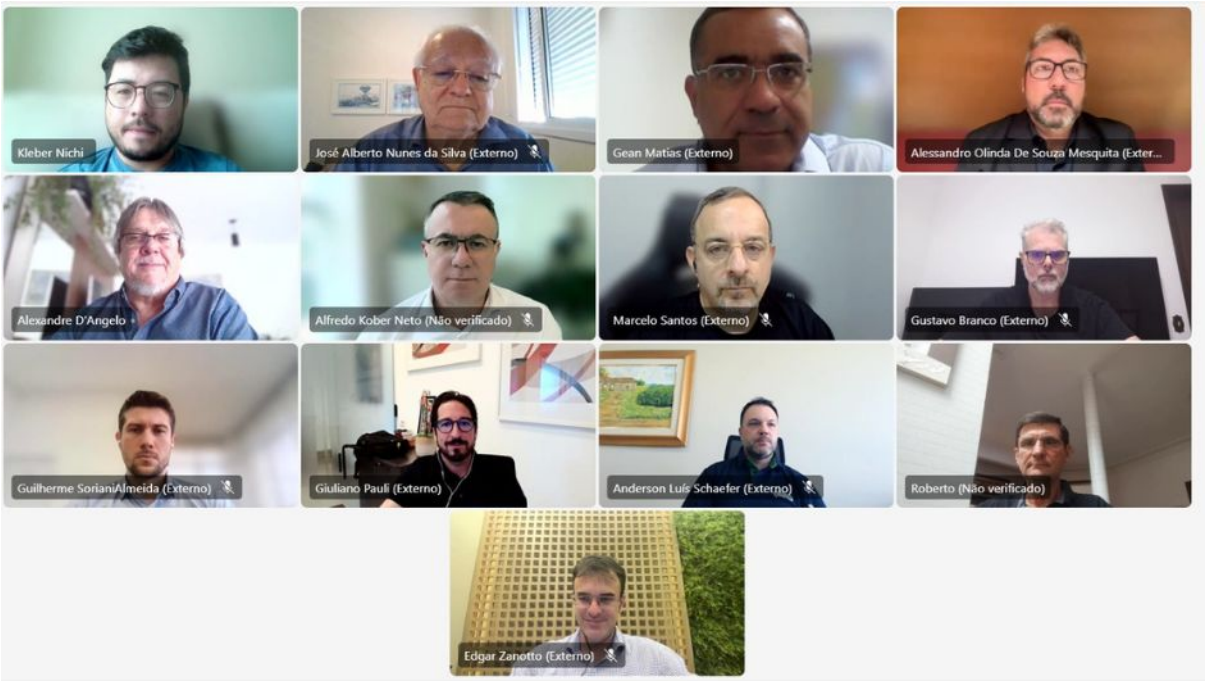
Abisolo announces advisors for the 2026/2027 term.

The board elected during the Annual General Meeting reinforces the entity's governance and the representation of the agricultural inputs sector.

04.02.2026 | 16:11 (UTC -3)

Adriana Roma



The Brazilian Association of Plant Nutrition Technology Industries (Abisolo)

announces the elected board for the Deliberative Council and the Advisory and Fiscal Council of the entity for the 2026/2027 term. The election took place during the association's Ordinary General Assembly (AGO), held on December 5, 2025, with the participation of member companies.

The new composition reinforces Abisolo's commitment to technical, pluralistic governance aligned with the regulatory, economic, and technological challenges of agricultural inputs. The organization brings together manufacturers and importers of mineral, organomineral, and organic fertilizers, biofertilizers, biologically based inputs, adjuvants, soil conditioners, and substrates.

The Deliberative Council will be chaired by Roberto Levrero, from Itale Indústria e Comércio Ltda., with Gustavo Branco, from Fertiglobal Brasil, as vice-president. The elected slate brings together representatives from leading companies in the sector, strengthening Abisolo's institutional role with public authorities, regulatory bodies, and other agribusiness entities.

“The election of this slate during the Ordinary General Assembly reflects the confidence of the member companies in the work being developed. We will continue working to expand dialogue with regulatory bodies, contribute to a more efficient regulatory environment, and stimulate innovation in the agricultural

inputs sector, always focusing on increasing productivity and the sustainability of Brazilian agriculture," he states.

Elected Board – Abisolo Councils | Biennium 2026/2027

President of the Deliberative Council - Roberto Levrero – Itale Indústria e Comércio Ltda.

Vice-President of the Deliberative Council Gustavo Branco – Fertiglobal Brazil

Counselors

- Alessandro Olinda de Souza Mesquita – Timac Agro Indústria e Comércio de Fertilizantes Ltda.
- Fabrício Fonseca Simões – Uby Agroquímica Ltda.
- Marcelo Marino Santos – Omex Agrifluids do Brasil Ltda.
- Giuliano Pauli – Santa Clara Agrociencia Industrial Ltda.
- Alfredo Kober – ICL South America SA
- Fernando Carvalho – Tera Ambiental Ltda.
- Filipe Teixeira – Valagro do Brasil Ltda.

Alternate members of the Deliberative Council

- Paulo Yvan – Yara Brasil SA (1st alternate)
- Edgar Zanotto – Vittia SA (2nd alternate)

Advisory and Supervisory Board

- Anderson Schaeffer – Carolina Soil Ltda.
- Wladimir Chagas – Brandt Agricultural Solutions Ltd.
- Guilherme Soriani – CJ do Brasil Ind. e Com. de Produtos Alimentícios Ltda.

Alternate member of the Advisory and Fiscal Council

- Gean Carlos Silva Matias – Axihum Fertilizandos SA

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LongPing appoints new Director of Field Operations.

Diego Vilarinho took over the position in January and will be responsible for operations in Brazil and Africa/Tanzania.

04.02.2026 | 15:28 (UTC -3)

Cultivar Magazine

With extensive experience in the seed and commercial crop sector, Diego Vilarinho (pictured) has taken on a new role as

Director of Field Operations at LongPing High Tech. The executive will be responsible for coordinating the company's operations in Brazil and Africa/Tanzania, encompassing activities such as external trials for genetic research, production of mother seeds of corn, soybeans and sorghum, as well as commercial production.

Based in Paracatu (MG), Vilarinho has over eight years of experience at LongPing. Prior to his new role, he held the position of Sales Director, leading commercial operations in the Southeast, Northeast, and part of the North of the country.

The executive has 18 years of experience in agribusiness and also built a nine-year career at Dow AgroSciences. He is an

agricultural engineer graduated from the State University of Minas Gerais (UEMG), holds a master's degree in vegetable production from the Federal University of Goiás (UFG), and an MBA in Business Management from the Getúlio Vargas Foundation (FGV).

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New Holland launches T7 Standard Wheelbase tractor in North America.

The new generation of the T7 SWB enhances maneuverability, operator comfort, and connectivity.

04.02.2026 | 14:20 (UTC -3)

Cultivar Magazine, based on information from Aimee Culbert

New Holland has launched the new T7 Standard Wheelbase tractor in North America. The model arrives completely redesigned. The line includes three versions: T7.190, T7.210 and T7.225. According to the company, the design prioritizes versatility, agility and operational efficiency for different production systems.

The new T7 SWB features a brand-new front axle. The assembly reduces the turning radius by 20% compared to previous generations of the T7 series. This change improves maneuverability in confined spaces. The application is suitable for dairy and beef cattle operations, hay, forage, grains, and mixed systems. The axle also contributes to smoother driving and less operator fatigue.

The tractor retains the wheelbase of the T7 series. The operating weight increases to 7.258 kg. The load capacity reaches 4.990 kg. This increase improves stability when using heavy implements and front loaders. The 6,7-liter engine operates at maximum power at 1.500 rpm. The adjustment reduces fuel consumption and noise levels. The maintenance interval reaches 750 hours. The Engine Power Management system provides an increase of 22% to 25% in power under load.

The transmission is at the customer's discretion. Options include Dynamic Command 24x24 dual-clutch or Auto Command 3-range CVT. The Dynamic Command's brake-to-clutch feature facilitates tasks with frequent stops, such

as loader operation and baling. The manufacturer highlights fuel consumption that is a benchmark in its category.

Technology package

The technology package includes the FieldOps platform. The system delivers real-time data about the machine and the field. The connectivity aims to reduce unplanned downtime and support operational decisions.

Operator comfort guided the development of the cab. The T7 SWB adopts a new cab suspension. Configurations can be mechanical, hydraulic, or pneumatic. The system works with the front axle suspension and roll control. The Horizon

cab received improvements in interior space, climate control, noise level, and ergonomics.

Cabin size

Visibility has increased without increasing the size of the cab. The pillars have become narrower. The redesigned hood extends the frontal view by up to 1,37 meters. The optional panoramic sunroof facilitates loader operations. Hydraulic, electrical, and pneumatic connections have been reorganized and pressure relieved. Access to the cab integrates steps and handrails with the fuel tank. The interior features the IntelliView 12 interface and the SideWinder armrest with configurable controls.

The T7 SWB debuts with an updated visual identity. The package includes a new hood, a refreshed lighting signature, and the Dynamic Blue color. The manufacturer positions the model as a benchmark in productivity, comfort, maneuverability, and connectivity within its segment.

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Spodoptera litura develops high resistance to tetraniliprole in China.

Biological evaluation by researchers did not indicate an adaptive cost associated with resistance.

04.02.2026 | 11:00 (UTC -3)

Cultivar Magazine

Photo: Todd Gilligan

The caterpillar *Spodoptera litura*Research conducted in China showed a high level of resistance to tetraniliprole, without compromising biological performance. Researchers from Yangtze University and the Beijing Academy of Agricultural and Forestry Sciences constructed a near-isogenic strain with 157 times greater resistance to the product and identified accelerated metabolism via cytochrome P450 as the main mechanism involved.

The work began with the crossing of a susceptible laboratory strain with a resistant field population collected in Nanchang. After five generations of backcrossing and selection with tetraniliprole, the authors isolated a strain genetically close to the susceptible strain, but highly resistant to the insecticide.

Toxicity tests confirmed high resistance to tetraniliprole and moderate cross-resistance to chlorantraniliprole. Other insecticides, such as indoxacarb, lambda-cyhalothrin, and emamectin, did not show relevant cross-resistance. The result indicates a risk associated with rotation between diamides and reinforces the need to alternate distinct modes of action.

Molecular analysis

Molecular analysis did not detect I4723M or I4723K mutations in the ryanodine receptor, a classic target of diamides. This data rules out resistance due to target site alteration in this case. Biochemical tests showed a 1,6-fold increase in cytochrome P450 activity in the resistant strain. The

synergist piperonyl butoxide reduced the toxicity of tetraniliprole and chlorantraniliprole, confirming the involvement of oxidative metabolism.

Biological evaluation did not indicate an adaptive cost associated with resistance. The resistant strain showed a shorter mean generation time, a higher net reproductive rate, and a relative fitness of 1,13 compared to the susceptible strain. Females produced more eggs, despite a reduction in the hatching rate. The set of parameters resulted in equivalent or superior population performance.

More information at doi.org/10.1016/j.pestbp.2025.106834

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Soybean adjusts pods after simulated reproductive damage.

Variety with indeterminate growth adjusts after simulated damage from Helicoverpa zea.

04.02.2026 | 10:39 (UTC -3)

Cultivar Magazine

Photo: Frank Peairs, Colorado State University

Soybeans have the ability to compensate for damage caused by *Helicoverpa zea* When tissue loss occurs early in the reproductive cycle, this compensation varies according to the growth habit of the cultivar. Indeterminate growth varieties adjust pod types and seed weight differently than determinate varieties. This conclusion results from a field experiment conducted in North Carolina, USA, simulating damage between stages R1 and R3.

The insect *Helicoverpa zea*The corn earworm, known as the corn earworm, feeds on the leaves, flowers, and pods of soybeans. Attacks on reproductive organs can reduce yield components. Management recommendations in the

southeastern United States are largely based on determinate cultivars. This study evaluated whether indeterminate cultivars, which maintain vegetative growth after flowering, better compensate for this type of damage.

Two cultivars

Researchers compared two commercial soybean cultivars, both from maturity group 5. One cultivar exhibited determinate growth, while the other exhibited indeterminate growth. The experiment took place over two growing seasons, 2020 and 2022, at the Rocky Mount experimental station. The plots received three treatments involving manual removal of flowers and small pods: 0%,

50%, and 100% of the reproductive tissue.

The removal simulated the attack of *Helicoverpa zea* The study was conducted during the period between the beginning of flowering and the start of pod formation. This interval coincides with the pest's preferred oviposition period. In each plot, ten plants were marked and subjected to the treatment. Harvesting occurred after physiological maturity. The researchers evaluated average seed weight, total number of pods per plant, and distribution of pods with one, two, three, and four grains.

Average seed weight

The average seed weight varied between years and growth habits. In 2020, indeterminate growth plants produced heavier seeds than determinate plants. In 2022, this difference did not appear. The percentage of reproductive tissue removal did not consistently alter the average seed weight across the two years.

The total number of pods per plant responded to partial removal of reproductive tissue. On average, the treatment with 50% removal generated more pods than the treatments with no removal and with total removal. This effect was most evident in 2022. Total removal reduced yield components, while moderate damage allowed for compensation.

Different strategies

The cultivars exhibited distinct strategies for adjusting yield components. Indeterminate growth plants produced more pods with one grain and more pods with four grains under certain conditions. Determinate growth plants, on the other hand, concentrated their compensation on increasing the number of pods with three grains. The number of pods with two grains varied little between treatments, years, or growth habits.

The complete removal of reproductive tissue between R1 and R3 did not prevent seed formation until harvest. This indicates a capacity for compensation even after severe losses in this initial period.

However, compensation did not occur uniformly across years, suggesting the influence of environmental conditions.

The authors tested the hypothesis of greater compensatory capacity in indeterminate cultivars. The results did not consistently confirm this hypothesis. The observed differences depended on the yield component evaluated and the agricultural year. The study used only one cultivar of each growth habit, which limits generalizations.

The data reinforces the fact that soybeans naturally abort a large portion of their flowers. Therefore, flower loss at the beginning of flowering tends to have less impact on final yield. Removing pods at later stages usually generates greater

losses, as pointed out by previous studies cited by the authors.

The study did not evaluate productivity at the plot level, only yield components in individual plants. Thus, heavier seeds do not, in isolation, indicate increased productivity. The authors highlight the need for further studies with more cultivars, different environments, and direct yield measurement.

More information at doi.org/10.1016/j.cropro.2025.107325

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Bunge reduces profit in 2025

The company attributed the performance to mark-to-market effects.

04.02.2026 | 10:19 (UTC -3)

Cultivar Magazine, based on information from Bunge

Bunge Global SA reported a decline in profit in 2025, despite operational improvements and increased volumes across all supply chains. GAAP diluted

earnings per share closed the year at US$4,93, compared to US$7,99 in 2024. On an adjusted basis, EPS totaled US$7,57, down from US$9,19 a year earlier. In the fourth quarter, GAAP EPS was US$0,49, compared to US$4,36 a year earlier. On an adjusted basis, it was US$1,99, slightly below US$2,13.

The company attributed the performance to mark-to-market effects, corporate costs, and a high comparative base. Even so, adjusted EBIT grew in the fourth quarter across all segments, supported by disciplined execution and asset expansion following the merger with Viterra.

In consolidated terms, adjusted EBIT totaled US$2,03 billion in 2025, slightly above US$2,02 billion in 2024. Operating

cash flow fell to US$844 million, reflecting lower reported profit and changes in working capital. Adjusted operating funds reached US$1,73 billion, higher than the previous year.

Soybean processing

Soybean processing is projected to reach 41,0 million tons in 2025. The segment's adjusted EBIT reached US$1,33 billion. South America drove the results, with improved industrial performance in Argentina and Brazil. Expanded capacity increased processed and traded volumes.

In turn, softseed processing rose to 10,75 million tons. Adjusted EBIT totaled US$580 million. Higher average margins and the incorporation of softseed assets

supported the growth. Canada, Europe, and Argentina expanded capacity and origination.

Adjusted EBIT reached US$168 million in the "other oilseeds" category. Specialty oils gained strength in Asia and North America. Global oil trading contributed to the result.

Grains

Sales and milling totaled 67,2 million tons in 2025. Adjusted EBIT reached US$386 million. Wheat and barley drove performance. Corn and ocean freight limited gains. The sale of the corn milling business altered the comparative basis.

In the corporate sector, expenses increased due to the integration of Viterra. The quarter included one-off effects, such as a pension agreement and integration costs.

Prospects for 2026

For 2026, Bunge projects adjusted EPS between US$7,50 and US$8,00. The company estimates an adjusted effective rate between 23% and 27%, investments of US$1,5 to US$1,7 billion, and depreciation of approximately US$975 million. Management points to a more balanced portfolio, greater global reach, and diversified supply chains for risk management in volatile environments.

➢ Financial Highlights

(US$ in millions, except per share data)	Quarter Ended December 31, 2025	Quarter Ended December 31, 2024	Year Ended December 31, 2025	Year Ended December 31, 2024
Net income attributable to Bunge	$ 95	$ 602	$ 816	$ 1,137
Net income per share from continuing operations-diluted [a]	$ 0.49	$ 4.36	$ 4.93	$ 7.99
Mark-to-market timing differences [b]	$ 0.55	$ (1.25)	$ 1.18	$ 0.72
Certain (gains) & charges [c]	0.95	(0.98)	1.46	0.48
Adjusted Net income per share from continuing operations-diluted [a] [d]	$ 1.99	$ 2.13	$ 7.57	$ 9.19
Segment EBIT [d] [e]	$ 598	$ 732	$ 2,329	$ 2,159
Mark-to-market timing differences [b]	135	(180)	255	163
Certain (gains) & charges [c]	23	(6)	(125)	13
Adjusted Segment EBIT [d]	$ 756	$ 546	$ 2,459	$ 2,335
Corporate and Other EBIT [d] [f]	$ (334)	$ 35	$ (796)	$ (367)
Certain (gains) & charges [c]	200	(136)	371	49
Adjusted Corporate and Other EBIT [d]	$ (134)	$ (101)	$ (425)	$ (318)
Total EBIT [d]	$ 264	$ 767	$ 1,533	$ 1,792
Mark-to-market timing differences [b]	135	(180)	255	163
Certain (gains) & charges [c]	223	(142)	246	62
Adjusted Total EBIT [d]	$ 622	$ 445	$ 2,034	$ 2,017

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Corteva closes 2025 with an increase in seed prices.

Company grows in sales and projects expansion of operating profit in 2026.

04.02.2026 | 10:00 (UTC -3)

Cultivar Magazine, based on information from Corteva

FY 2025 Results Overview

	Net Sales	Inc. from Cont. Ops (After Tax)	EPS
GAAP	**$17.40B**	**$1.20B**	**$1.75**
vs. FY 2024	**3%**	**40%**	**43%**
	Organic[1] Sales	**Operating EBITDA[1]**	**Operating EPS[1]**
NON-GAAP	**$17.56B**	**$3.85B**	**$3.34**
vs. FY 2024	**4%**	**14%**	**30%**

Corteva ended 2025 with sales growth, advancements in seeds and crop protection, and strong cash generation. The company reported net revenue of US$17,4 billion, up 3% from 2024. Organic

sales grew 4%, with gains in all regions. Net income from continuing operations was US$1,20 billion.

Seed performance supported the annual result. Segment sales grew 4% to US$9,9 billion. Organic sales advanced 5%. Price and mix rose 3%, driven by newer technologies and a value-based pricing strategy. Volume increased 2%, with corn sales in North America and Brazil standing out. The segment's operating EBITDA reached US$2,64 billion.

Crop protection

The crop protection segment also advanced in 2025. Net sales grew 2%, totaling US$7,5 billion. Organic growth was 3%. Volume increased 5%, supported by

new products, herbicides, and biologicals. Prices fell 2% due to competitive dynamics in Latin America. The segment's operating EBITDA reached US$1,35 billion, a 6% increase year-over-year.

Cash generation was a highlight. Cash from continuing operations reached US$3,5 billion, a 51% increase. Free cash flow totaled US$2,9 billion, a 69% increase. The company returned more than US$1,5 billion to shareholders throughout the year.

In the fourth quarter, net revenue totaled US$3,91 billion, a 2% decrease year-over-year. The result mainly reflected seasonal effects and the postponement of deliveries to the beginning of 2026.

Corporate separation

The company maintained its corporate separation schedule, with completion expected in the second half of 2026. Corteva also finalized a broad agreement with Bayer, which expands operational freedom, accelerates the path to royalty neutrality in 2026, and expands licensing opportunities in corn, canola, and cotton. The agreement involves a disbursement of US$610 million, concentrated in the first quarter of 2026.

For 2026, the company projects growth. Operating EBITDA is expected to be between US$4,0 billion and US$4,2 billion. Operating profit per share is expected to range from US$3,45 to US$3,70. The estimate considers firm agricultural

demand, price pressure in some regions, and an estimated tariff impact of US$80 million.

($ in millions, except where noted)	FY 2025	FY 2024	% Change	% Organic[1] Change
Net Sales	**$17,401**	**$16,908**	**3%**	**4%**
North America	$9,024	$8,660	4%	5%
EMEA	$3,110	$3,124	- %	2%
Latin America	$3,928	$3,776	4%	4%
Asia Pacific	$1,339	$1,348	(1)%	2%

($ in millions, except where noted)	FY 2025	FY 2024	% Change	% Organic[1] Change
North America	$6,271	$6,033	4%	4%
EMEA	$1,560	$1,581	(1)%	4%
Latin America	$1,614	$1,523	6%	5%
Asia Pacific	$453	$408	11%	14%
Total FY Seed Net Sales	**$9,898**	**$9,545**	**4%**	**5%**
FY Seed Operating EBITDA	**$2,636**	**$2,219**	**19%**	**N/A**

($ in millions, except where noted)	FY 2025	FY 2024	% Change	% Organic[1] Change
North America	$2,753	$2,627	5%	5%
EMEA	$1,550	$1,543	- %	1%
Latin America	$2,314	$2,253	3%	4%
Asia Pacific	$886	$940	(6)%	(4)%
Total FY Crop Protection Net Sales	**$7,503**	**$7,363**	**2%**	**3%**
FY Crop Protection Operating EBITDA	**$1,350**	**$1,272**	**6%**	**N/A**

SEGMENT NET SALES - SEED	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2025	2024	2025	2024
Corn	$ 1,386	$ 1,411	$ 7,002	$ 6,496
Soybean	164	154	1,878	1,927
Other oilseeds	94	87	644	653
Other	93	120	374	469
Seed	$ 1,737	$ 1,772	$ 9,898	$ 9,545

SEGMENT NET SALES - CROP PROTECTION	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2025	2024	2025	2024
Herbicides	$ 1,062	$ 1,031	$ 3,730	$ 3,599
Insecticides	488	490	1,669	1,715
Fungicides	272	320	1,140	1,081
Biologicals	191	169	519	476
Other	160	196	445	492
Crop Protection	$ 2,173	$ 2,206	$ 7,503	$ 7,363

GEOGRAPHIC NET SALES - SEED	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2025	2024	2025	2024
North America [1]	$ 545	$ 639	$ 6,271	$ 6,033
EMEA [2]	190	216	1,560	1,581
Latin America	884	827	1,614	1,523
Asia Pacific	118	90	453	408
Rest of World [3]	1,192	1,133	3,627	3,512
Net Sales	$ 1,737	$ 1,772	$ 9,898	$ 9,545

GEOGRAPHIC NET SALES - CROP PROTECTION	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2025	2024	2025	2024
North America [1]	$ 933	$ 924	$ 2,753	$ 2,627
EMEA [2]	234	232	1,550	1,543
Latin America	769	795	2,314	2,253
Asia Pacific	237	255	886	940
Rest of World [3]	1,240	1,282	4,750	4,736
Net Sales	$ 2,173	$ 2,206	$ 7,503	$ 7,363

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Hormonal herbicides increase the risk of phytotoxicity in cotton.

Inappropriate use of 2,4-D and dicamba amplifies productive conflicts in Argentina.

03.02.2026 | 16:12 (UTC -3)

Cultivar Magazine, based on information from Aapresid

Recent cases of phytotoxicity in cotton have reignited concerns about the use of

hormonal herbicides in Argentine agriculture. A survey by the Pest Management Network of Aapresid identifies damage associated with improper applications of these products.

Hormonal herbicides such as 2,4-D, dicamba, and picloram support the control of broadleaf weeds. Increased frequency of use and a wider application window, driven by tolerant biotechnologies, have increased the risk of volatilization and drift. The problem intensifies in the warmer months.

Cotton is among the most sensitive crops, even when exposed to extremely low doses. Damage at advanced stages reduces recovery capacity and increases yield losses. Sunflower, legumes,

grapevines, fruit trees, vegetables, and non-tolerant soybeans also appear on the list of affected crops.

These herbicides mimic auxins and induce uncontrolled growth in susceptible plants. Symptoms include "cup-shaped" leaves, twisted petioles and stems, reduced growth, shortened internodes, flower abortion, and reproductive deformities. In cotton, the leaf malformation known as "frog's foot" or "fan-shaped" characterizes the injury, with bud abortion and capsule deformation.

Exposure to risk

The greatest risk exposure arises from applications under critical environmental

conditions. High temperatures, low relative humidity, winds, and thermal inversions favor off-target movement. More volatile formulations, such as esters, increase the potential for damage, while acids and salts reduce the risk.

The rise in agricultural conflicts has spurred provincial regulations. Chaco adopted temporary restrictions. Other provinces have implemented exclusion zones, buffer zones, environmental limits, and agricultural revenue requirements. The regulatory debate remains active.

Aapresid points to application quality as the central axis of prevention. Management recommends applications only under suitable weather conditions, choosing less volatile formulations, using nozzles and pressures that reduce fine

droplets, correct height, respecting safety distances, and rigorous cleaning of equipment.

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Technologies in tractors could reduce costs in the 2026 harvest.

Valtra points to energy efficiency and reduced soil compaction as key to improving profitability.

03.02.2026 | 16:00 (UTC -3)

Beatriz Voltani

With the harvest of the largest soybean crop in history underway and planning for

the next crop approaching, Brazilian farmers are facing a crucial moment financially. While the market debates ESG as a corporate goal, Valtra, a global leader in the manufacture of agricultural machinery, proposes a change of perspective: sustainability in the field is, above all, a strategy for cost reduction.

The Brazilian Association of Machinery and Equipment Industries (Abimaq) projects that 2026 will be marked by moderate growth in machinery sales and the need to renew fleets that have become obsolete. According to Elizeu dos Santos, Product Marketing Manager at Valtra, it is crucial that producers take advantage of this opportunity to study the most suitable technologies for their production, those that will yield economic results.

“Profitability is decided by the details, and the technologies applied in the field are important for protecting the farmer's margin. The intelligent use of implements, technologies, inputs, and even fuel can ensure that the producer saves money and obtains a greater financial return from their production,” says Elizeu.

Fuel cost

Fuel costs weigh heavily on the operating budget. Fleet modernization allows producers to move from less flexible operating systems to intelligent management, where the machine consumes only what is strictly necessary for the task being performed. The continuously variable transmission (CVT),

available in tractors such as the Q Series and T Series, optimizes the use of engine power, allowing for fuel savings of an average of 25% to 30% compared to conventional transmissions. "For a producer who operates hundreds of hours per harvest, this difference pays for the investment in technology and shields the operation against the volatility of diesel prices," emphasizes Elizeu.

Economic sustainability also encompasses input savings. For fertilizer application, manual steering can result in an overlap of approximately 4,5% at the headlands. With Valtra Guide and Section Control, this overlap can be reduced to zero. “We're talking about eliminating seed and fertilizer waste. The technology ensures that the

product is applied only where needed, without wasting inputs that significantly impact the final cost.”

Soil compaction

Another crucial point for the 2026 harvest is crop preservation. Soil compaction can reduce future productivity and requires extra expenses for decompaction. Technologies such as Weight Transfer, which distributes the chassis load ensuring that the machine's weight is evenly balanced, are a solution to this problem. “Less compacted soil absorbs water and nutrients better, guaranteeing the productivity of future harvests. Machines with better weight-to-power distribution protect the producer's greatest asset,

which is the land. This is true ESG in agricultural practice," emphasizes Elizeu.

For Valtra, the start of the year represents the ideal time for producers to recalculate costs and adopt technologies that guarantee long-term financial stability. Through energy efficiency and precision in the field, the brand reaffirms its role as a partner to producers in the pursuit of significant results.

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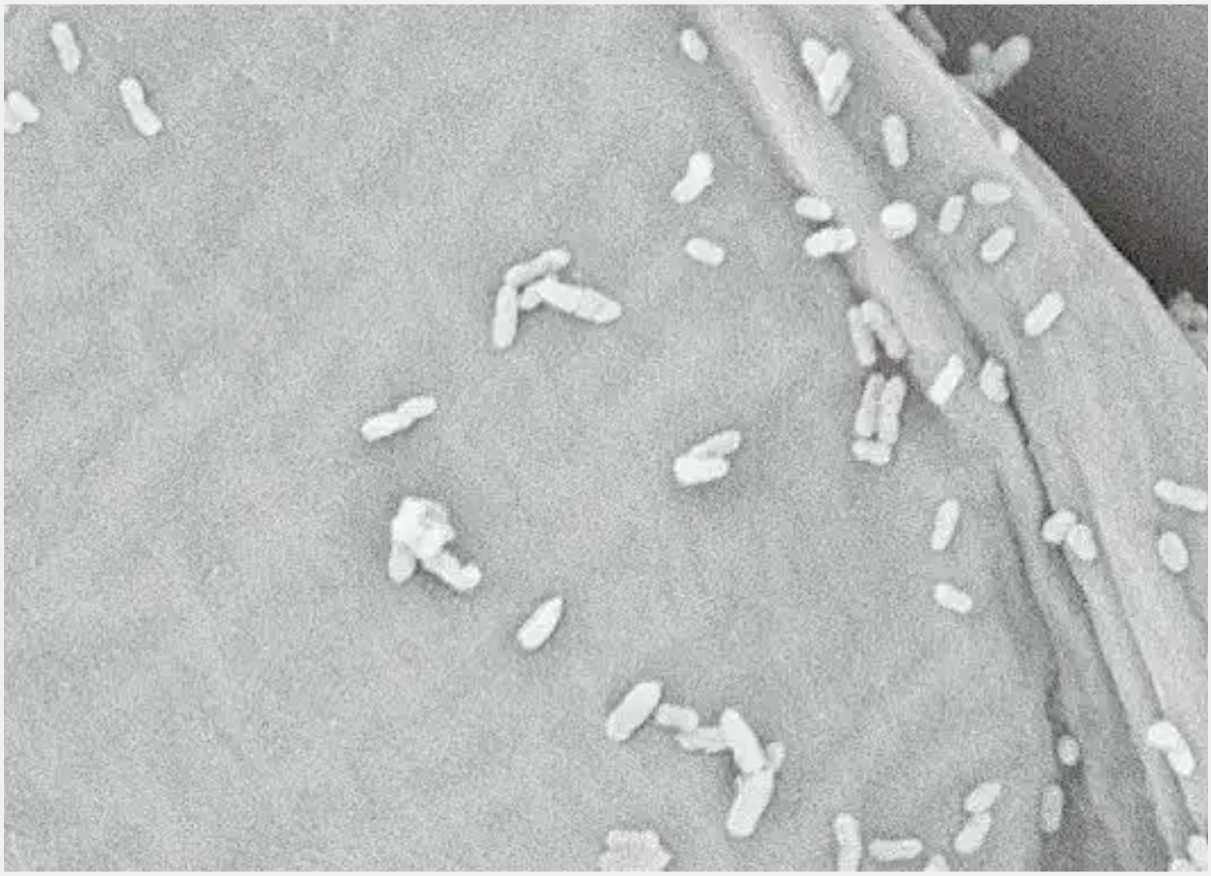
Microorganisms enhance nitrogen absorption.

Studies with canola identify bacteria of the genus Sphingopyxis associated with nitrogen use efficiency.

03.02.2026 | 13:52 (UTC -3)

Cultivar Magazine



Bacteria of the genus *Sphingopyxis* They colonize the root tissue - doi.org/10.1038/s41477-025-02210-7

Researchers have identified microorganisms capable of enhancing root growth and nitrogen absorption in plants. The results point to new nutritional management strategies with the potential to reduce dependence on nitrogen fertilizers. This progress stems from studies conducted by the Technical University of Munich and an international consortium, involving field experiments and large-scale genetic analyses.

The central discovery involves bacteria of the genus *Sphingopyxis*Initial trials with canola indicate that these microorganisms stimulate root system development, even in soils with limited nitrogen supply. The effect translates into a greater capacity for nutrient absorption by plants, without association with classic biological fixation

of atmospheric nitrogen.

The researchers analyzed plant-microorganism interactions at the genetic, metabolic, and physiological levels. The approach integrated genome, root transcriptome, and rhizosphere microbiome data. The dataset involved over a thousand paired samples collected from two contrasting agricultural environments. The focus was on canola.

Nitrogen absorption

The results show that approximately 45% of the natural variation in nitrogen absorption can be explained by the combination of host plant genetics and characteristics of the microbiome

associated with the roots. This data reinforces the notion that the plant actively modulates the soil microbial community, adjusting it to its nutritional demands throughout its cycle.

The analysis identified 203 bacterial variants strongly influenced by the plant genotype. Many of these variants show a direct association with nitrogen levels in the tissues. Among them, *Sphingopyxis* It stood out for the recurrence and intensity of its interaction with genes related to carbon and nitrogen metabolism.

Inoculation experiments confirmed the functional role of these bacteria. Plants treated with isolates of *Sphingopyxis* They exhibited a higher density of lateral roots. The effect occurred both under suitable

conditions and under nitrogen restriction. The increase in root area broadened contact with the soil and favored the absorption of available nutrients.

Indirect action

The data indicate that the mechanism does not involve the direct fixation of atmospheric nitrogen. Tests in nitrogen-free media confirmed the bacterium's inability to grow under these conditions. The action occurs indirectly, through the modulation of root development and hormonal metabolism of the plant.

Metabolomic analyses and laboratory tests have shown that *Sphingopyxis* It produces compounds associated with auxin

biosynthesis. These hormones regulate the formation of lateral roots and cell elongation. The greater root branching observed in the experiments aligns with this physiological mechanism.

Microbial consortia

The study also evaluated the interaction of the bacteria with microbial consortia. Even when applied in conjunction with other rhizosphere species, *Sphingopyxis* It maintained the positive effect on aboveground biomass, root mass, and nitrogen accumulation. The result suggests compatibility with natural agricultural soil communities.

Another relevant point involves the genetic control exerted by the plant over bacterial colonization. Canola-specific genes have shown a direct relationship with the presence and activity of *Sphingopyxis* in the roots. In plants with mutations in these genes, the positive effect of inoculation disappeared. The finding reinforces the idea of ??co-regulation between plant and microorganism.

Researchers are now working on developing probiotic mixtures for plants. The proposal involves combining different beneficial microorganisms capable of acting in a complementary way in the absorption and utilization of nutrients. The strategy includes selecting plant genotypes with a greater capacity to recruit efficient microbiomes.

More information at

doi.org/10.1038/s41477-025-02210-7

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AGCO brings electric tractor and new solutions to World Ag Expo 2026

Fendt and Massey Ferguson showcase award-winning equipment and integrated warranty program in California.

03.02.2026 | 10:29 (UTC -3)

Cultivar Magazine, based on information from Bob Blakely

AGCO will showcase new technologies and award-winning equipment during the World Ag Expo, February 10-12, in Tulare, California. The company will display innovations from its Fendt and Massey Ferguson brands. The booth will be located in the front area of ??the park, offering more space and a shared Ride-and-Drive track with the Quinn Company dealership.

The main highlight will be the North American debut of the Fendt e100 Vario electric tractor. This compact model uses a battery, delivering high efficiency and a focus on resource conservation. The electric system accepts both traditional and electrified implements. A full recharge takes less than five hours, expanding its use in agriculture and municipal services.

Fendt will also be showcasing other well-known product lines. Among them are the 1000 Vario Gen4, the 200 V/F/P Vario designed for vineyards, orchards, and specialty crops, as well as the Rogator 900 Series sprayer, unique on the market with a rear boom and adjustable ground clearance in two heights.

Massey Ferguson will showcase advancements in easy-to-operate machines with embedded technology. The booth will feature the MF 9S tractor, the line of compact utility vehicles, and the Hesston by Massey Ferguson hay equipment. Visitors will also learn about MF Always Running, an integrated warranty program that aims for cost predictability, risk reduction, and increased machine uptime in the field.

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Diego Borelli takes over as director of strategy and planning at Bayer.

Executive to lead the "CP Strategy & Planning" area for Latin America.

03.02.2026 | 09:55 (UTC -3)

Cultivar Magazine

Diego Borelli has begun a new professional chapter at Bayer. The executive has assumed the position of

"Latam CP Strategy & Planning Director." He will be based in São Paulo.

Borelli had been with Bayer since 2019. Prior to his appointment, he served as interim "Latam CP Strategy & Planning Director" between March 2025 and January 2026. He also led the "Latam Supply Chain Intelligence" area as a senior manager for almost four years.

In recent years, she was responsible for the development and implementation of supply chain strategies in Latin America. She led roadmap governance across regions and functions. She coordinated integrated performance management between businesses and geographies. She worked in inventory and cost planning and control. She led logistics network

design models in the region. She was also responsible for the governance of product master data.

Before Bayer, Borelli worked at Monsanto, where he led outbound logistics operations in Brazil. His career also includes experience in demand planning, product allocation, and customer service, always related to the agribusiness supply chain.

The executive holds an MBA in business management from Atitus Educação. He also completed a specialization in leadership at FIA.

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Predator resists insecticides and remains effective in pest control.

Research reveals that Xylocoris sordidus continues to prey on pest eggs even after exposure to insecticides.

03.02.2026 | 09:25 (UTC -3)

Cultivar Magazine

Treatments	Parameters	Estimates ± SE	df	X^2	P
Control	Intercept	4.2646 (± 0.5778)	1	54.47	< 0.0001
	Linear	-0.6010 (± 0.0834)	1	51.88	< 0.0001
	Quadratic	0.0186 (±0.00305)	1	37.06	< 0.0001
	Cubic	-0.00017 (±0.000030)	1	31.73	< 0.0001
Match®	Intercept	1.5471 (± 0.2330)	1	44.08	< 0.0001
	Linear	-0.1052 (± 0.0154)	1	46.88	< 0.0001
	Quadratic	0.0000896 (± 0.000196)	1	20.90	< 0.0001
Altacor®	Intercept	0.2752 (± 0.1238)	1	4.94	0.0262
	Linear	-0.0254 (± 0.00276)	1	84.88	< 0.0001

Estimated parameters of the logistic regression between the proportion of eggs of *Corcyra cephalonica* attacked by *Xylocoris sordidus*, after the application of Match and Altacor with prey densities of 1 to 64 eggs - doi.org/10.37486/1809-8460.ba21001

A predator used in the biological control of pests retains its predatory capacity even when exposed to selective chemical insecticides. The result comes from an experiment conducted in a laboratory in the interior of São Paulo state. The study evaluated the behavior of the stink bug. *Xylocoris sordidus* after direct and indirect contact with two active ingredients widely used in agriculture. The data indicate that the insect retains control potential for the first 72 hours after release, even in environments treated with pesticides.

The research analyzed the functional response of the predator when fed with moth eggs. *Corcyra cephalonica* The tests also measured the direct and indirect toxicity of these molecules on the natural

enemy. The results show a reduction in the rate of prey consumption in the presence of the insecticides, but without immediate elimination of predatory activity.

research method

In the study, the insects were kept under controlled temperature, constant humidity, and a defined photoperiod. The researchers used adult insects. *X. sordidus* up to 24 hours old. Before the tests, the predators were fasted for 24 hours. The procedure aimed to standardize feeding motivation during the bioassays.

The eggs of *C. cephalonica*Eggs, also up to 24 hours old, served as prey. Densities

ranged from one to 64 eggs per plate. Each treatment had ten replicates per density. The trials compared three situations: a control group without insecticide; a group with eggs treated with chlorantraniliprole; and a group with eggs treated with lufenuron.

Functional response

The evaluation of the functional response indicated a type II pattern in all treatments. This type of response characterizes predators that increase consumption as prey density increases, until reaching a plateau. This behavior frequently occurs in predatory bed bugs. Statistical analysis confirmed that, even under the effect of insecticides, the predator maintained this

basic predation pattern.

In the control treatment, the logistic regression showed a more complex structure. The intercept, linear, quadratic, and cubic terms showed high statistical significance. This indicates greater flexibility in predatory behavior when there is no chemical interference. In the insecticide treatments, the model was reduced to the intercept and linear components. This data suggests a simplification of the predator-prey interaction under chemical exposure.

Attack rate

The predator attack rate varied between treatments. The lowest value occurred in

the treatment with chlorantraniliprole. This result indicates a reduction in the efficiency of locating or attacking prey. Despite this, the same treatment showed the shortest handling time. Once consumption began, the predator completed feeding in a shorter period.

In the control group, the attack rate showed a higher value. Handling time also increased. This indicates a greater time investment in capturing and processing prey. In the lufenuron treatment, the values ??were in an intermediate position. The combination of attack rate and handling time resulted in distinct estimates of maximum consumption over 24 hours.

The calculation of the ratio between total exposure time and handling time estimated

the maximum number of prey consumed. The highest value occurred in the treatment with chlorantraniliprole. This was followed by the treatment with lufenuron. The control showed the lowest value. This data suggests that, despite the lower attack rate, the predator can maintain significant consumption when it encounters prey in environments with certain chemical residues.

Direct toxicity

In addition to predatory behavior, the study analyzed the direct toxicity of insecticides. The adults of *X. sordidus* The subjects were exposed to the dry residue of the formulations at the maximum recommended doses. Mortality was

assessed after one hour and after 24 hours. Initial results did not indicate an immediate lethal effect.

With prolonged exposure, mortality progressively increased. Both active ingredients led to 100% mortality by the sixth day. The effect occurred late. The interval of up to 72 hours showed high survival rates. This period coincides with the window considered critical for predator activity after release in the field.

Indirect toxicity

Indirect toxicity was also included in the analysis. In this case, the predators fed on contaminated eggs. The evaluation measured the longevity of the adults over

time. The results did not indicate a reduction in survival when compared to the control. In the lufenuron treatment, longevity exceeded that of the group without insecticide.

The data indicates that ingesting contaminated prey did not compromise the predator's vital functions. The effect suggests low sublethal toxicity of lufenuron when ingested indirectly. The result reinforces the product's selectivity towards natural enemies, at least under the conditions tested in the laboratory.

This work was developed by Sarah C. da Silva, Ariane Assine, Vinicius F. Nascimento, Leticia B. Lacerda, Noemi ML de Oliveira, Lucas Bernardi, Dagmara G. Ramalho, and Sergio A. De Bortoli.

More information at
doi.org/10.37486/1809-8460.ba21001

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ADM closes 2025 with a drop in profit and projects recovery in 2026.

Company reports net profit of US$1,1 billion in 2025

03.02.2026 | 08:16 (UTC -3)

Archer Daniels Midland (ADM) ended 2025 with a net profit of US$1,1 billion, a 44% decrease year-over-year. Earnings per

share were US$2,23. Adjusted EPS reached US$3,43. In the fourth quarter, net income totaled US$456 million, with EPS of US$0,94. The company attributed the performance to the global trade environment and the lack of clarity in US biofuel policy.

Total operating income by segment reached US$3,2 billion in 2025, a 23% decrease compared to 2024. In the fourth quarter, this indicator reached US$821 million, a 22% drop. Cash flow from operating activities totaled US$5,5 billion for the year.

The Agricultural Services and Oilseeds segment reported operating profit of US$1,6 billion in 2025, down 34%. The company cited lower soybean exports from North America, weaker crushing margins,

and negative mark-to-market impacts. In the fourth quarter, the segment's profit fell 31% to US$444 million.

Carbohydrate Solutions generated an operating profit of US$1,2 billion in 2025, a 12% decrease. ADM reported lower global demand for starches and sweeteners and higher corn costs in Europe, partially offset by higher margins in ethanol. In the fourth quarter, the segment declined 6% to US$299 million.

The Nutrition segment reported an operating profit of US$417 million in 2025, an 8% increase compared to the previous year. This growth was driven by the performance of animal nutrition and a recovery in specialty ingredients. In the fourth quarter, the segment's profit fell 11% to US$78 million due to the absence of

insurance revenue recorded in 2024.

For 2026, ADM projects adjusted EPS between US$3,60 and US$4,25. The company indicated that reaching the upper limit of the projection depends on greater clarity in US biofuel policy, continued expansion of crushing margins, industrial efficiency gains, and strengthening demand. The investment plan foresees capex between US$1,3 billion and US$1,5 billion.

The company announced a 2% increase in its quarterly dividend, to US$0,52 per share. The decision marks the 53rd consecutive year of dividend growth.

Company Outlook

Growth expected to accelerate throughout 2026

	FY26	Planning Assumptions
Ag Services & Oilseeds	Expect operating profit growth driven by continuation of strengthening crush margins and improving global trade flows	• FY 2026: Expect soybean crush margins to strengthen, driven by improved policy clarity • Crush execution margin improvement dependent on timing of U.S. biofuel policy, magnitude of renewable volume obligations and small refinery exemptions, and pace of industry adoption of new mandates • Volume growth expected from soybean and milo exports, supported by strong corn export program
Carbohydrate Solutions	Expect operating profit to be stable year-over-year with S&S softness offset by ethanol margin strength	• Ethanol strength expected to offset continued softness in S&S • Robust export opportunities expected to continue for ethanol, domestic ethanol demand expected to increase with U.S. biofuel policy clarity, and margins supported by policy incentives • S&S softness expected to be driven by continuation of consumer behavior trends to purchase fewer packaged goods
Nutrition	Expect operating profit to increase year-over-year, driven by continued operational improvement and revenue growth	Human Nutrition: • Flavors growth expected to be driven primarily by North American demand, supported by EMEA growth • Continued recovery expected in Specialty Ingredients • Health & Wellness growth expected to be driven by biotics, including expanding commercial applications for post-biotics Animal Nutrition: • Margin expansion expected with continued pivot to higher-margin products, including execution of Alltech joint venture, and benefits from other portfolio actions
Corporate & Other	Expect corporate costs to increase year-over-year	• ADMIS interest income expected to be lower due to lower interest rate environment • Continued investment in R&D and digital platforms, the impact of lower performance-based incentive compensation related to 2025, and a higher effective tax rate is expected to increase corporate costs year-over-year

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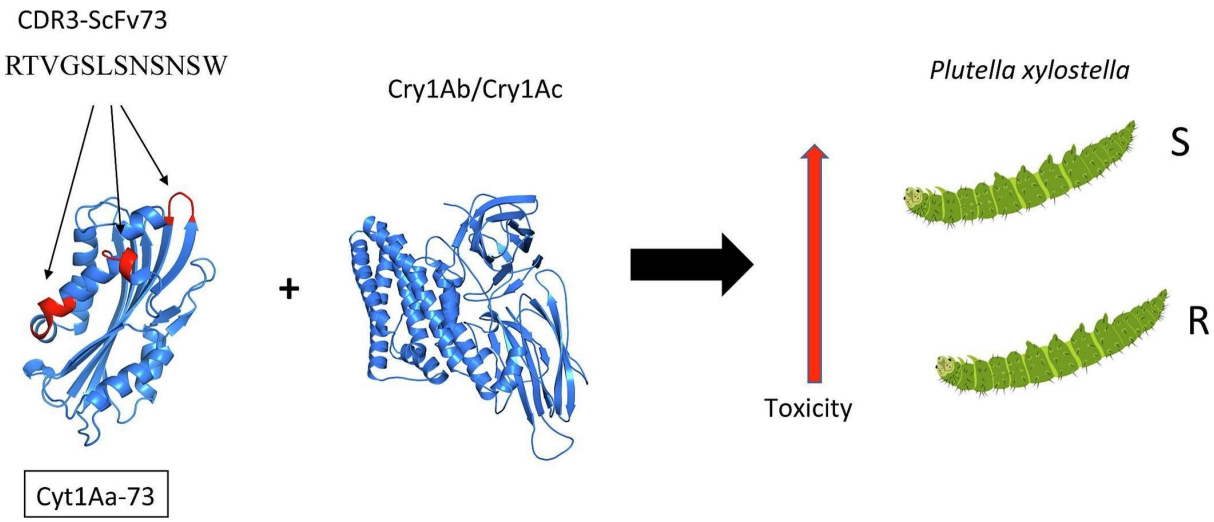
Modified Cyt1Aa protein enhances the action of Cry1A toxins.

Molecular engineering creates a surrogate receptor that increases the effectiveness of Cry1Ab and Cry1Ac.

03.02.2026 | 08:08 (UTC -3)

Cultivar Magazine



Researchers have demonstrated that the Cyt1Aa protein of *Bacillus thuringiensis* It can be modified to act as a surrogate receptor for Cry1Ab and Cry1Ac toxins, extending its toxicity against...

diamondback moth (*Plutella xylostella*), including in resistant strains. The study points to a new strategy to combat resistance to Bt crops, a problem already recorded in 11 pest species.

The study modified the Cyt1Aa toxin so that it binds to Cry1A toxins currently used in transgenic plants. The modification allowed Cyt1Aa to induce the oligomerization of Cry1Ab and Cry1Ac, a key step for the insertion of these toxins into the insect's intestinal membrane and for larval death.

The authors inserted the CDR3 sequence of a monoclonal antibody fragment, known to bind to the Cry1A recognition region, into three exposed regions of Cyt1Aa. The resulting hybrid proteins, named Cyt1Aa-

73, then recognized Cry1Ab and Cry1Ac in a manner similar to natural receptors in the caterpillar gut.

Bond tests

Binding assays showed affinity of the hybrid proteins for Cry1Ab and Cry1Ac in the nanomolar range, while unmodified Cyt1Aa showed virtually no interaction with these toxins. Bioinsecticidal tests confirmed the functional effect of this interaction.

In bioassays with susceptible larvae of *P. xylostella*Mixtures of Cry1Ab or Cry1Ac with Cyt1Aa-73 increased mortality to levels between 60% and 80%, even when Cry1Ab proteins were used in sublethal

doses. Cyt1Aa-73 proteins, in isolation, did not cause a significant increase in mortality.

The Cyt1Aa-73L7 variant showed the best performance. In in vitro assays, this protein most efficiently induced the formation of Cry1Ab and Cry1Ac toxin oligomers, a structure associated with insecticidal action.

Resilient population

The most relevant effect appeared in a resistant population of *P. xylostella*In the NO-QAGE lineage, where resistance to Cry1Ac is associated with a mutation in the ABCC2 transporter, isolated Cry1Ac showed mortality close to 10%. The

combination of Cry1Ac with Cyt1Aa-73L7 increased mortality to values ??between 56% and 70%.

The results indicate that the modified Cyt1Aa is able to circumvent one of the main resistance mechanisms to Cry1Ac by replacing the function of the absent or altered intestinal receptor. The work suggests that Cyt1Aa could serve as a platform for the development of new combinations of Bt toxins.

Further information at doi.org/10.1016/j.pestbp.2026.106970

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Tickets are now on sale for DLG-Feldtage 2026.

The open-air market takes place from June 16th to 18th in Bernburg, Germany.

02.02.2026 | 13:30 (UTC -3)

Cultivar Magazine, based on information from Malene Conlong

Ticket sales for DLG-Feldtage 2026 opened this week. The event takes place from June 16th to 18th at the International

DLG Crop Production Center in Bernburg, Germany. The fair brings together agricultural production professionals and adopts the theme "Crop Production Out of the Box".

More than 200 exhibitors have already confirmed their attendance. The program includes a technical exhibition and demonstrations focused on plant production, genetic improvement, plant protection, fertilization, and agricultural machinery. The event takes place in an open-air fair format.

A daily ticket costs 22 euros when purchased in advance online. This represents a saving of 6 euros compared to the on-site ticket office. Visitors can choose any of the three days. The

organization also offers the "Green Day Ticket," at an additional cost, to support reforestation programs in Germany.

For the first time, the event is offering a pass valid for all three days, costing 48 euros. DLG members have free entry on two days of the fair. Sales are exclusively online.

Visitors have on-site accommodation options. The DLG-Feldtage Camp offers areas for tents and trailers, as well as restrooms, parking, and a common area. The organization also maintains partnerships with tour operators in various agricultural countries.

The technical program highlights areas such as DLG Spotlights, Expert Stages, and Pop-up Talks. Meeting points in the

experimental fields address oilseed and protein crops, resilient production systems, and climate risk management. The agenda also includes the DLG Plaza and the CropNight networking event.

One of the highlights of the 2026 edition involves the FarmRobotix area, dedicated to robotics, automation, and artificial intelligence applied to agricultural production. The space includes a demonstration zone with autonomous robots, lectures, and guided tours.

The machinery demonstrations showcase 66 sets across six thematic areas, including crop protection, mineral fertilization, no-till farming, deep soil preparation, and mechanical weed control. The presentations take place daily, live, with commentary in German.

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Life Agro appoints José Ovidio Bessa as CEO.

Executive with over 25 years in agribusiness takes the helm to accelerate the company's sustainable expansion.

02.02.2026 | 10:45 (UTC -3)

Cultivar Magazine, based on information from Lucas Domenico

Life Agro announced the appointment of José Ovidio Bessa as its new CEO. The

company, headquartered in Chapecó, is a regional leader in plant technology. The decision aims to expand its geographic reach and portfolio. The strategy prioritizes responsible and sustainable growth.

Life Agro has built a significant position in the South and Southeast regions of Brazil. The company works closely with rural producers. The company invests in in-depth technical expertise. The operation translates agronomic knowledge into results in the field. The arrival of the new CEO reinforces this positioning.

José Ovidio Bessa has over 25 years of experience in agribusiness. The executive has worked for global companies such as FMC, ICL, and Agrivalle. Between 2015 and 2021, he participated in the growth of

Fertiláqua, culminating in the sale of the company to ICL in 2020. His career path includes strategic vision and a focus on results. The executive understands the journey of the rural producer.

According to Matias Tiecher, founding partner and member of the board of directors, shareholders are celebrating the arrival of the new CEO. He highlighted the alignment with Life Agro's values. Tiecher will remain with the company.

José Ovidio Bessa stated that the management will maintain close relationships with clients, technical excellence, and innovation applied to the realities of the field. The plan includes deepening partnerships, developing talent, and delivering solutions that generate sustainable value, productivity, and

longevity for agricultural systems.

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Essential oils are gaining ground in the control of Drosophila suzukii.

Scientific review highlights the potential of plant-based insecticides and emphasizes nanoencapsulation.

02.02.2026 | 09:41 (UTC -3)

Cultivar Magazine

Photo: Frank A Hale, University of Tennessee

The spotted-wing fly (*Drosophila suzukii* This pest causes significant losses in small fruits and remains largely controlled by synthetic insecticides with low selectivity. A scientific review indicates that plant-based insecticides, especially essential oils, exhibit high toxicity and relevant behavioral effects on the pest. However, the instability of these compounds in the environment restricts their application in the field and keeps nanoencapsulation as the main technological challenge.

The insect attacks thin-skinned fruits. The female pierces still-green fruits and lays eggs. The larvae accelerate rotting and favor secondary infections. In extreme situations, losses reach 20% to 30% of production. Current management depends

on synthetic molecules such as spinosyns, diamides, neonicotinoids, organophosphates, and pyrethroids. Widespread spraying reduces efficiency, increases drift, and puts pressure on the selection of resistant populations.

Plant compounds

The review analyzed 31 articles published between 2019 and 2024. The studies evaluated plant compounds focusing on lethality and behavioral modulation. Fifty plant species were tested in mortality assays, predominantly from the Lamiaceae and Asteraceae families. The studies analyzed 49 essential oils and 17 isolated compounds. Most bioassays were conducted in the laboratory and focused

on adult pests.

Essential oils have shown lethal effects through contact, ingestion, and fumigation. Topical exposure resulted in faster mortality than ingestion. Mechanisms include oxidative stress, tissue damage, and interference with the nervous system. Terpenic compounds cross the cuticle and respiratory system, reach internal tissues, and compromise vital functions.

In addition to mortality, the studies recorded behavioral effects. Thirty-nine plant species induced attraction, repellency, or deterrence of oviposition. Thirteen treatments attracted adults. Nine showed a repellent effect. Eight reduced egg laying. These results support strategies such as "push-pull" and "attract-

and-kill," with the potential to reduce widespread insecticide applications.

Physical-chemical instability

The physicochemical instability of essential oils remains a major obstacle. High volatility, photodegradation, and sensitivity to temperature and humidity make it difficult to maintain effective doses in the field. The review identified only one study that evaluated nanoencapsulated essential oil against *Drosophila suzukii*The study demonstrated greater durability and controlled release of the active ingredient compared to free oil.

The survey indicates a growth in the number of patents involving nanoemulsions and lipid nanoparticles with plant compounds. These technologies aim to increase stability, reduce volatility, and prolong the insecticidal effect. Despite industrial interest, field trials, ecotoxicological assessments, and economic feasibility studies are lacking.

The authors conclude that plant-based insecticides offer high potential for the integrated management of the spotted-wing fly. Nanoencapsulation emerges as a crucial step to enable agricultural use. The lack of research under real-world cultivation conditions keeps this topic a priority for the development of biorational products applicable in the field.

This work was developed by Gabriel N. Araújo, Luis O. Viteri Jumbo, Pedro B. Silva, Leonardo B. Souza, Anielle CA Silva, Lucas Anhezini, Gil R. Santos, Raimundo WS Aguiar, Eugênio E. Oliveira, and Jerusa M. Oliveira.

Further information at doi.org/10.3390/agrochemicals5010008

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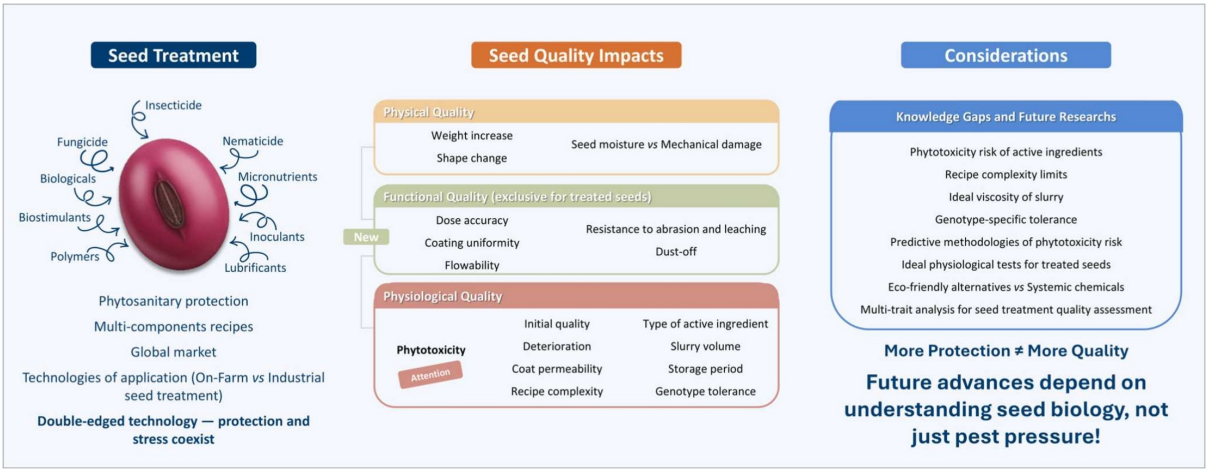
Seed treatment requires precision to preserve quality.

International review details physical, functional, and physiological effects of chemical treatment.

02.02.2026 | 08:23 (UTC -3)

Cultivar Magazine



doi.org/10.1016/j.plantsci.2026.113013

Seed treatment occupies a central position in modern agriculture. The technology protects seeds of high genetic value against pests and pathogens early in the cycle. It also ensures more uniform initial crop establishment. A scientific review

analyzed how these technologies affect the physical, functional, and physiological quality of seeds. The work compiles recent results and indicates technical limits that define when treatment protects or compromises the performance of the seed lot.

The review shows that chemical treatment is not limited to phytosanitary control. The process directly interferes with seed integrity. Application involves mechanical impacts, contact with biologically active molecules, and increased surface moisture content. These factors alter physical attributes such as seed coat mass and resistance. They also affect metabolic processes related to germination and vigor.

Functional quality

The authors highlight that the traditional evaluation of seed quality considers two pillars. The first includes purity, size, weight, and appearance. The second involves germination and vigor. This study introduces a third concept: functional quality. This attribute measures the operational performance of the treated seed during handling, transport, and sowing. It includes dose accuracy, coating uniformity, flowability, and absence of dust.

According to the review, functional quality defines whether the treated seed delivers the expected treatment effect in the field. Doses below the recommended level reduce the effectiveness of the active

ingredient. Doses above the recommended level increase the risk of phytotoxicity. In industrial systems, dose accuracy exceeds 95%. In treatments carried out on the farm, variability increases. Equipment calibration and operator skill then determine the final result.

Industrial treatment

The text points out that industrial processing offers consistent advantages. Closed systems reduce operator exposure. Atomizers ensure more uniform coverage. Abrasion is reduced. Dust shedding drops to levels below 4 grams per kilogram of seed when polymers are included in the formulation. These factors preserve both

functional and physiological quality.

On-farm treatment remains viable for economic and logistical reasons. It allows for flexible recipes and application in small volumes. However, the technical risk increases. Adapted equipment can cause mechanical damage. Dosage varies. In some cases, the process removes part of the industrial treatment already applied. The review links these factors to greater variability in field performance.

Physiological aspect

From a physiological standpoint, the study reinforces a central point: treatment does not improve the intrinsic vigor of the seed. This attribute is defined during production. Treatment only preserves potential when

executed correctly. When poorly managed, it accelerates deterioration. The main cause involves phytotoxicity induced by active ingredients, especially systemic insecticides.

The authors describe three levels of physiological damage. In the first, the seed germinates, but with reduced vigor. In the second, germination decreases and abnormal seedlings emerge. In the third, seed death occurs. The progression between these levels depends on storage time, spray volume, the number of components in the formulation, and the genotype.

The review shows that recipes with more than five components increase the risk of physiological damage. High volumes of

solution intensify the problem, especially when the formulation has low viscosity. More aqueous solutions accelerate imbibition. In dry seeds, this process causes membrane disorganization and solute loss. The result is reduced vigor and germination during storage.

Seed moisture content

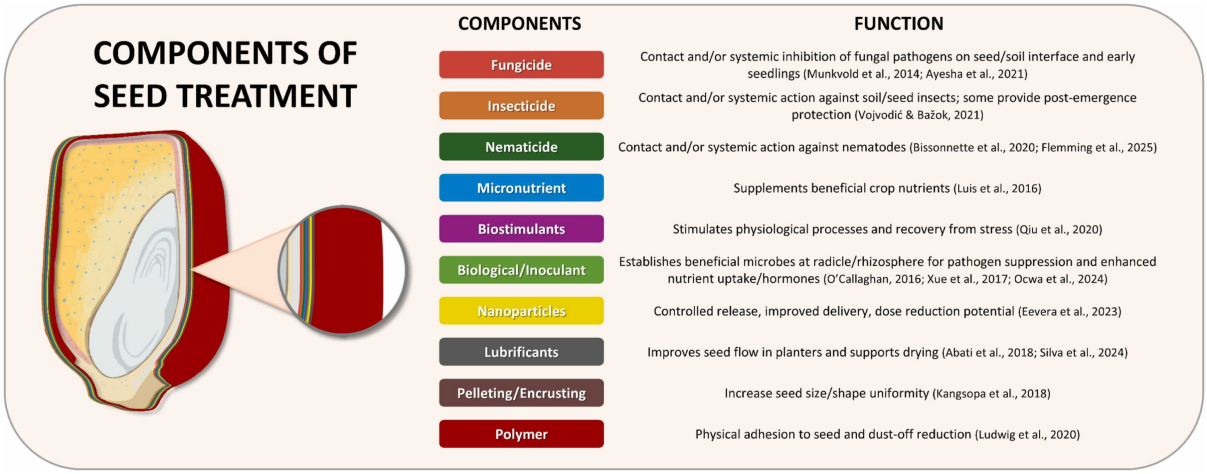
The seed moisture content at the time of treatment appears to be a decisive factor. Very low moisture content increases susceptibility to immediate mechanical damage. High moisture content reduces the initial impact but favors latent deterioration during storage. The literature indicates optimal ranges close to 11% for soybeans in industrial systems.

The study also highlights the importance of polymers. These components increase the adhesion of active ingredients, reduce leaching, and decrease dust generation. In soybeans, the use of polymers prevents losses of up to 20% of the active ingredient due to washing. In rice, insecticide retention more than doubles under simulated rain conditions.

Finally, the authors point out knowledge gaps. There is a lack of integrated data on the interaction between initial batch quality, spray composition, and storage time. The review indicates the need for safer formulations and more precise application technologies. The objective remains clear: to protect seeds and seedlings without compromising the physiological quality that sustains crop yield.

The work was developed by Venicius Urbano Viela Reis, Everson Reis Carvalho, and Imtiyaz Khanday.

More information at doi.org/10.1016/j.plantsci.2026.113013



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CNH launches service to protect European farmers against extreme weather.

Integrated financing solution ensures automatic reimbursement during periods of excessive rain or drought.

02.02.2026 | 08:09 (UTC -3)

Cultivar Magazine, based on information from CNH

CNH Capital, in partnership with BNP Paribas Leasing Solutions, announced the launch of a parametric service aimed at agricultural clients in Europe. The initiative involves collaboration with Shepherd Compello and Swiss Re. The objective is to enhance financial security in extreme weather scenarios.

The service integrates with CNH Capital's financing contracts. The solution mitigates the financial cost of not using agricultural machinery during periods of excessive rain or prolonged drought. The model eliminates the need for damage assessments and claims processes.

The mechanism works based on predefined climate parameters. Activation occurs automatically when independent

satellite data confirms the intensity and duration of adverse weather events. The client does not need to submit documents or open a refund request.

When activated, the service guarantees the farmer a reimbursement equivalent to one monthly installment of the financing per year. This amount injects liquidity at a time when the weather compromises field operations.

Implementation begins gradually this month. Spain is receiving the first phase. Expansion to other European countries is planned by 2026.

According to Elias Mendes, director of CNH Capital in the EMEA region (Europe, Middle East and Africa), the initiative reinforces the commitment to customer

resilience. He states that climate volatility puts pressure on agriculture and demands simple and immediate solutions. The executive highlights the integration of innovation directly into financing.

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Volatiles from potatoes attacked by aphids reduce the pest.

Chemical communication between plants affects Myzus persicae and attracts natural enemies for up to 48 hours.

29.01.2026 | 08:31 (UTC -3)

Cultivar Magazine

Photo: Jim Baker, North Carolina State University

Potato plants exposed for 48 hours to volatiles released by aphid-infested plants showed reduced pest performance and increased attraction of natural enemies. The effect occurred only in the first 48 hours after exposure, according to a study conducted in a controlled airflow system.

The experiment evaluated herbivory-induced volatile compounds, known as HIPVs. Recipient plants received volatiles from plants of the same species infested with aphids or from uninfested plants. After exposure, researchers performed bioassays with the green aphid (*Myzus persicae*) and with its natural enemies, the ladybug *Harmony axyridis* and the parasitoid *Aphidius gifuensis*.

Between zero and 48 hours after exposure, plants that received HIPVs showed lower aphid survival and reduced nymph production. The settlement rate did not change. Both natural enemies showed greater attraction to these plants.

Chemical analysis showed a significant increase in the total emission of volatiles by the recipient plants immediately after exposure. Seven compounds showed higher levels in this interval. Between 48 and 96 hours after exposure, there were no differences in insect behavior. The chemical profile changed. Some of the initial compounds ceased to appear at elevated levels, while another group of six substances remained above the control.

The data indicate that brief exposure to aphid-induced volatiles activates rapid and temporary indirect defenses in neighboring plants. The process creates a short window of protection, with reduced performance of... *Myzus persicae* and greater recruitment of *Harmony axyridis* e *Aphidius gifuensis*This dynamic reinforces the ecological role of chemical communication between plants and points to the potential for management strategies with time-adjusted defensive induction.

Further information at doi.org/10.1002/ps.70577

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