January 24, 2026

N º 63

Cultivar Semanal

Which soil does Spodoptera prefer?

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Soil affects the development of Spodoptera frugiperda

Study reveals that more fertile soils increase pest growth and reduce its sensitivity to insecticides

23.01.2026 | 10:14 (UTC -3)

Cultivar Magazine

Photo: Frank Peairs, Colorado State University

The type of soil used for growing corn directly affects its development fall armyworm (*Spodoptera frugiperda*)and in the effectiveness of chemical control. The conclusion comes from a scientific study that analyzed the relationship between soil, host plant, nutrition, and insect response to insecticides. The results indicate that more fertile soils favor plant growth, increase caterpillar weight, and reduce susceptibility to insecticide lambda-cyhalothrin.

The research evaluated corn grown in three soil types: red latosol, cinnamonic soil, and black soil. These soils exhibit marked differences in fertility, pH, and organic matter content. The experiment measured plant growth, leaf nutritional composition, and the biological

performance of caterpillars fed on this plant material.

Corn grown in black soil and cinnamonic soil showed greater height, larger stem diameter, and greater biomass accumulation. The leaves of these plants concentrated more soluble sugars, proteins, and free amino acids. The red latosol, with lower fertility, resulted in smaller plants with lower nutritional content.

These differences were directly reflected in the pest insect. Caterpillars fed on corn from black soil and cinnamonic soil reached greater body weight from the fourth instar onwards. Larval development occurred in less time, although adult longevity was greater. Larval and total

survival rates also increased in these two soils when compared to the red latosol.

Nutritional indices

The study also analyzed the nutritional indices of the caterpillars. Insects that fed on corn grown in more fertile soils showed a higher growth rate and better efficiency in converting ingested food into biomass. Relative consumption was lower, indicating higher nutritional quality of the diet. In the red latosol, the caterpillars consumed more food, but converted less into weight gain.

chemical control

In chemical control, the results are noteworthy. The susceptibility of the caterpillar to the insecticide lambda-cyhalothrin varied according to the soil of origin of the corn. Caterpillars fed on corn from red latosol showed a lower average lethal concentration. Those from corn grown in black soil and cinnamonic soil required doses between 1,6 and 2 times higher of the insecticide to achieve the same level of mortality.

Statistical analysis showed a positive correlation between caterpillar weight and the lethal concentration of the insecticide. The greater the body weight, the greater the tolerance to the product. Structural modeling confirmed that the soil does not directly affect the effectiveness of the

insecticide. The effect occurs indirectly, mediated by plant growth, the nutritional value of the leaves, and the increase in insect weight.

Detoxification enzymes

The study also evaluated detoxification enzymes. Caterpillars fed with red latosol corn showed higher activity of carboxylesterases, glutathione S-transferases, and cytochrome P450. Despite this, these caterpillars showed lower tolerance to the insecticide. The proposed explanation suggests that the lower body weight reduces the dilution effect of the product in the insect's organism.

The research also identified two key amino acids in this process: leucine and valine. Leucine showed a positive correlation with caterpillar weight and insecticide tolerance. Valine showed the opposite effect. Tests with supplementation of these amino acids confirmed that leucine increases survival after exposure to the insecticide, while valine reduces it.

The authors highlight that managing the fall armyworm can be more complex in areas with fertile soils, such as black and cinnamonic soils. Under these conditions, corn grows better, but the pest insect also develops more and responds less to chemical control.

Further information at doi.org/10.1016/j.pestbp.2026.106952

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New BASF solutions target nematodes, diseases and caterpillars.

Nematode treatment, new fungicide, and insecticide advance in the pipeline.

21.01.2026 | 07:20 (UTC -3)

Cultivar Magazine

Marcelo Batistela

BASF announced three new products that will be marketed in Brazil in the coming years. Highlights include a new transgenic trait for soybeans capable of controlling lesion and cyst nematodes. Another innovation is an insecticide formulated with the broflanilide molecule for managing all caterpillar pests in soybean, cotton, and corn crops. Finally, the fungicide Pavecto, capable of controlling target spot, cercospora leaf spot, septoria leaf spot, and Asian soybean rust. All technologies are expected to be on the market within the next two to three years.

The main highlight involves the new trait called NRS (nematode resistance soybean). This technology offers effective control against the main nematodes affecting the crop. Among them, the root-

lesion nematode*Pratylenchus brachyurus*) and the cyst nematode (*Heterodera glycines*), explains Rafael Vicentini, marketing director for soybean cultivation systems at BASF.

This trait is contained in the GMB151 transgenic event, developed through transformation mediated by *Agrobacterium tumefaciens* using the pSZ8832 vector containing the cry14Ab-1.be hppdPf-4Pa expression cassettes. They express the Cry14Ab-1 and modified 4-hydroxyphenylpyruvate dioxygenase (HPPD-4) proteins. The Cry14Ab-1 protein, a protein crystal derived from *Bacillus thuringiensis*, confers resistance to plant-parasitic nematodes. The HPPD-4 protein, derived from Pseudomonas fluorescens, confers tolerance to HPPD-

inhibiting herbicides.

According to data from BASF, in 160 field tests conducted in the country over seven years, the trait demonstrated control of over 90% of the root-lesion nematode, in addition to improved protection against the cyst nematode.

The technology should be marketed through the Credenz and SoyTech soybean seed brands.

Broflanilide molecule

For insect control, the company will offer an insecticide formulated with the molecule. broflanilide"The product features a novel mode of action and a broad spectrum against difficult-to-manage

caterpillars," says Graciela Mognol, marketing director at BASF.

Graciela Mognol and Rafael Vicentini

Broflanilide acts as a non-competitive allosteric modulator of GABA-activated chloride channels in dieldrin-resistant receptors in insects. It irreversibly blocks nerve transmission, causing excessive hyperpolarization, paralysis, and death. Its

mode of action is unique (IRAC Group 30).

Laboratory tests indicate a rapid effect, with a high level of control a few hours after exposure, in addition to a residual effect lasting 14 to 21 days. The technology does not exhibit cross-resistance.

Pavecto fungicide

In disease management, BASF prepares the fungicide Pavecto. The product combines the new Pavecto molecule (methyltetraprole) with prothioconazoleThe proposal targets diseases that are difficult to control in soybeans, such as Asian soybean rust, target spot, cercospora leaf spot, and septoria leaf spot. Trials indicate productivity gains of more than three sacks

per hectare.

The fungicide belongs to subgroup 11A in the FRAC classification. It belongs to the group of quinone external inhibitors (QoIs), like strobilurins, but has a different chemical structure, called tetrazolinone. This structure allows the molecule to inhibit the cytochrome b protein, essential for mitochondrial respiration in fungi, even in the presence of the G143A mutation, which renders traditional fungicides ineffective. The result is effective control of resistant populations.

Farmer and BASF

BASF has reinforced its decision to operate as an integrated solutions company for agriculture. This guideline originates from the farmer and guides research, development, and investment. This assessment was presented by Marcelo Batistela, vice president of agricultural solutions at the company, while discussing the company's new innovation cycle and the known challenges of the sector.

According to Batistela, agriculture presents recurring and variable problems with each harvest. The executive emphasized that no harvest is the same as the previous one. He advocated for close contact with producers to understand current pain

points and anticipate future challenges. The strategy prioritizes the customer as the starting point for decisions and recognizes agricultural activity as being built by people.

The company decided to reorganize its operations based on this logic. The move sought to overcome the traditional fragmentation between genetics, biotechnology, chemistry, and digital. The proposal combines technologies under a single umbrella, aligned with how farmers operate in the field. Batistela defined the transition as the shift from a product-oriented company to a customer-oriented company.

In the model advocated, value arises from productive potential. The foundation involves genetics, biotechnology, and crop

protection, with the use of chemical and biological solutions. Digitalization appears as a tool to support decisions in increasingly complex systems. Batistela also pointed out the limitations faced by producers in the face of climate and exchange rates. The answer lies in innovation, knowledge, and new financing models.

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AGCO announces new leadership structure in Latin America.

Rodrigo Junqueira expands his leadership at Massey Ferguson, and Marcelo Traldi takes over AGCO's operations in the region.

19.01.2026 | 17:38 (UTC -3)

Larissa Souza dos Santos

Rodrigo Junqueira, Vice President of Massey Ferguson Latam, and Marcelo Traldi, Vice President of Fendt and Valtra Latam and General Director of AGCO Latam.

AGCO announced today (January 19th) a restructuring of its leadership. As part of a

global strategy, Rodrigo Junqueira will assume the vice-presidency of Massey Ferguson for all of Latin America, including Mexico, a country that plays a significant role in the brand's growth.

The appointment reinforces AGCO's focus on strengthening Massey Ferguson's presence in strategic markets. Junqueira, who previously served as vice president of Massey Ferguson South America and director of AGCO South America, will now lead Massey Ferguson's operations throughout the Latin American region.

In Mexico, AGCO has a dedicated Massey Ferguson operation with a strong presence through its 16 dealer groups, more than 106 service stores, and a tractor factory located in Querétaro, in the central region

of the country, employing approximately 200 people.

The restructuring also expands Marcelo Traldi's role. Currently vice president of Fendt and Valtra in South America, the executive will now be responsible for AGCO's operations throughout Latin America, assuming the position of vice president of Fendt and Valtra Latin America and general manager of AGCO Latin America.

The career path of Rodrigo Junqueira

With a solid career spanning over 30 years in major multinational agribusiness companies, Rodrigo Junqueira possesses

extensive technical and strategic experience for this new challenge. The executive holds a degree in Agricultural Engineering from the University of São Paulo (USP), an MBA in Marketing from the Escola Superior de Propaganda e Marketing (ESPM), and specialization from the Executive Development Program of the Fundação Dom Cabral and the Kellogg School of Management. In 2026, Rodrigo Junqueira will assume the new position of Vice President of Massey Ferguson Latin America.

The career path of Marcelo Traldi

Marcelo Traldi has 30 years of solid experience focused on developing after-

sales strategies and creating sustainable customer experiences. Having worked for multinational companies in the sector, Traldi joined AGCO in 2017 as director of parts for South America, later assuming the vice presidency of after-sales and finally leading the Fendt and Valtra brands in South America. The executive holds a degree in Business Administration from FMU and an MBA in Marketing from Fundação Getulio Vargas (FGV), with certification from Ohio University. In 2026, Marcelo Traldi will assume a new position as vice president of Valtra and Fendt Latin America and general manager of AGCO Latin America.

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Host plant reduces the efficiency of predatory mites.

Study shows that potato reduces reproduction of Phytoseiulus persimilis by mediating interaction with Tetranychus evansi.

23.01.2026 | 14:21 (UTC -3)

Cultivar Magazine

Photo: Biobest

The predatory mite *Phytoseiulus persimilis* It exhibits poor reproductive performance when feeding on the pest mite. *Tetranychus evansi*This is especially true when the pest develops on potato plants. The conclusion comes from a scientific study that points to a significant limitation in the use of this natural enemy in biological control programs.

The research evaluated the development, longevity, and fertility of *P. persimilis* when feeding on two species of pest mites, *T. evansi* e *Tetranychus urticae*, created on two host plants: beans and potatoes.

The results indicate a sharp decline in the reproductive capacity of *P. persimilis* when the prey was *T. evansi*The effect intensified when the pest mite developed

on potatoes. In this combination, the predator exhibited a shorter oviposition period, lower daily egg production, and lower total fecundity.

Population growth

The intrinsic population growth rate of the predator fed with *T. evansi* The value derived from potatoes reached 0,08. This value represents a 55,56% reduction compared to the same predator fed with potatoes. *T. evansi* raised on beans. Compared to *T. urticae* Created from beans, the reduction exceeded 65%.

The study shows that the host plant does not significantly affect the predator's development time from egg to adult. The

impact appears in the adult stage, directly harming reproduction and population survival. The interaction between plant and prey explains part of this effect.

Secondary compounds

According to the authors, secondary compounds present in crops of the nightshade family, such as potatoes, can be accumulated by *T. evansi*These compounds are not well metabolized by the predator and reduce its biological efficiency.

The data reinforces that *T. evansi* does not constitute suitable prey for *P. persimilis* in agricultural systems based on solanaceous plants. The study points to

the need to search for other natural enemies or integrated strategies for managing this pest, which is considered highly destructive in crops such as potatoes and tomatoes.

Further information at doi.org/10.3390/insects17020133

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Cottonseed virus circulated in the US for almost 20 years without being detected.

Study finds cotton infected since 2006 and confirms the presence of CLRDV in California.

23.01.2026 | 08:28 (UTC -3)

Cultivar Magazine

Photo: Bob Kemerait, University of Georgia

Researchers have identified cotton leafroll dwarf virus (CLRDV) in old samples dating back to 2006 in the United States. The discovery changes the timeline of the disease in the country.

CLRDV officially appeared in US records in 2017. The new analysis shows infections in samples from Mississippi in 2006, Louisiana in 2015, and California in 2018. The data indicate a prolonged presence in the Cotton Belt, with silent spread across different regions.

The work brings together scientists from the USDA Agricultural Research Service and Cornell University. The team re-evaluated public genetic databases and found viral sequences compatible with current isolates from the US. The

approach confirmed high genetic identity and a country-specific clade, ruling out the hypothesis of recent introduction.

To validate the findings, researchers collected cotton in California in 2023. Analyses confirmed the presence of the virus in the state. The result marks the first official local detection.

The study also points to evidence of the virus in an unusual location. Sequences appeared in material from the digestive tract of a bovine animal in California. The evidence suggests ingestion of contaminated feed, without indicating animal infection. This data reinforces the widespread circulation of the pathogen before formal recognition.

Further information can be found at doi.org/10.1094/PDIS-06-24-1265-SC

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Study maps how ants detect odors and pheromones.

Research identifies differences in the sense of smell between worker ants and winged females and points to applications in pest management.

23.01.2026 | 07:53 (UTC -3)

Cultivar Magazine

Photo: Will Ericson - CCBY4

Researchers in the United States have identified how... red fire ant (*Solenopsis invicta*) It detects pheromones and odors from the environment. The study analyzed sensory responses in the antennae of worker ants and winged females. The results indicate differences between castes and pave the way for new strategies to control the pest.

The study measured the activity of olfactory neurons in a specific type of antennal sensillum, called basiconic. The tests included 62 compounds, including pheromones and general odors present in plants, insects, and the environment.

The sensilla basiconica showed a broad detection capacity. Most compounds elicited moderate or strong responses.

This pattern indicates a generalist olfactory system, capable of recognizing various chemical signals relevant to the colony's survival.

Three groups

The analysis separated the sensilla into three functional groups. Group SBI showed the most intense responses. Group SBII showed intermediate responses. Group SBIII reacted weakly to most of the odors tested. This pattern occurred in both worker ants and winged females.

Differences between castes

Despite the similarities, differences emerged between castes. Worker bees responded more intensely to nine compounds. Winged females reacted more strongly to six odors. The authors associate these variations with the distinct functions of each caste within the colony.

The study also detected strong responses to substances linked to defense, foraging, and interaction with other species. Compounds such as terpenes, aldehydes, ketones, alcohols, and acids strongly activated the most sensitive sensilla. Some of these odors had already been identified in samples from the fire ant itself.

According to the authors, detailed mapping of the red fire ant's sense of smell helps to understand its chemical ecology. This

information can guide the development of synthetic attractants, repellents, and pheromones. This approach may contribute to more specific control methods with less environmental impact.

More information at doi.org/10.3390/insects17020129

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Agricultural Market - January 23, 2026

Brazilian harvest progresses with good volumes, but weather and market conditions are putting pressure on prices.

23.01.2026 | 07:42 (UTC -3)

Vlamir Brandalizze - @brandalizzeconsulting

Soybean prices continue to rise on the Chicago Board of Trade. The March

contract has already surpassed US$10,60 per bushel, and the July contract is flirting with US$11. The advance reflects a combination of tight global supply and strong demand, especially from China. Brazilian production, even with localized losses in Piauí, is expected to exceed 6 million tons already harvested. Mato Grosso leads with 9% of the area harvested. Excessive rainfall is delaying the harvest in central states.

Domestic demand for soybeans in Brazil is also growing. The animal feed sector is hitting record highs, and biodiesel requires more raw materials. Shipments have already exceeded 1,8 million tons in January, compared to 1,069 million in the same month of 2025. Soybean meal exports totaled more than 1,3 million tons,

both at a record pace. Revenue has already surpassed R$ 7 billion.

However, domestic prices are discouraging producers. The price per sack at ports has fallen from R$140 to the range of R$128 to R$132. With high costs, producers tend to sell up to 65% of their harvest to balance the books, which puts pressure on premiums. Values, which were above 40 points, have fallen to 20, with forecasts suggesting they may become negative.

Corn situation

In the corn market, the fundamentals are positive in the medium and long term. Global demand for animal feed is growing

due to the consumption of eggs, milk, and meat. Biofuel production in the US is expected to increase, driving the use of corn and soybean oil. In Brazil, the last second crop saw 94 million tons sold, equivalent to 83%. There are still 25 million tons available.

Planting of the new second crop begins under intense rains in Mato Grosso, which is hindering the work. As an alternative, interest in sorghum, which is cheaper and more resistant, is growing. The area is expected to exceed 2 million hectares, with production between 7 and 7,5 million tons. Domestic demand is strong and there is external interest, including from China.

Wheat situation

Wheat is facing difficulties. Despite a record harvest in Brazil, with more than 7,5 million tons, prices remain low. The domestic market is importing at a strong pace, with almost 300 tons imported in the first 11 days of January. Argentine wheat, also with a record harvest, is putting even more pressure on prices. The weak dollar discourages Brazilian exports.

In Rio Grande do Sul, prices are rising slightly, from R$ 1.030 to R$ 1.060 per ton. In Paraná, prices are increasing from R$ 1.150 to as high as R$ 1.200. Even so, the market remains weak. Mills cite slow sales of flour, including for bread. The market is waiting for producers to have cash flow issues to resume business.

Rice situation

In the rice sector, the harvest is still sporadic. Santa Catarina officially begins harvesting on the 23rd. The crop is in good condition, with expectations of over 11 million tons in Brazil. However, the market is stagnant. The industry is avoiding purchases, and retailers are maintaining promotions, with 5 kg packages priced between R$ 13 and R$ 17. Brazilian rice, one of the cheapest in the world, is not attracting increased demand.

The price remains below the official minimum of R$ 63. The government has not signaled support for sales. The industry is locked in a tug-of-war with retailers. Even with supply and quality, the

domestic market is not reacting. Exports could provide some relief.

Bean situation

Beans, on the other hand, are experiencing a price increase. The decrease in planted area and weather problems have limited supply. Good quality carioca beans are being traded between R$ 230 and R$ 260. Commercial beans are above R$ 215. Black beans have risen from R$ 120 to as much as R$ 180 in a month, with expectations of reaching R$ 200. Next week should bring more pressure with restocking in retail.

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Massey Ferguson releases book with memoirs from former employees.

Former employees gathered to celebrate the brand's legacy in Brazil.

22.01.2026 | 15:18 (UTC -3)

Flavia Amarante

AGCO's Jundiaí (SP) plant hosted former employees who built their professional

careers at Massey Ferguson in a gathering dedicated to celebrating the brand's legacy in Brazil. Through conversations and shared memories, the event provided an opportunity to relive professional journeys and strengthen friendships built over decades. The occasion was marked by the launch of the book "Legendary Massey Ferguson," a work that brings together stories, experiences, and memories of professionals who were part of the company's history over the decades.

Written by journalist Eloisa Rangel, the book records accounts from 45 former employees who helped consolidate Massey Ferguson as one of the leading companies in the agricultural sector in the country, bringing together experiences ranging from the factory floor to the

company's presidency. “Learning about the reality of those who actively participated in the development of Brazilian agribusiness was inspiring and allowed us a very human recovery of memory. The book is a tribute to those who made the history of the brand and of Brazilian agriculture,” says the author.

As a form of recognition and tribute, copies of the book were distributed to each of the former employees during the event. "This book represents our legacy. It's the culmination of all the stories that built something so exceptional that it's difficult to even describe. It's a celebration of a group that has remained united for 40 years, maintaining this trajectory, this friendship, and this passion for the brand. It's unforgettable, and this book is the

crowning achievement of it all," says Lucia Meilei, a former Massey Ferguson employee.

For Fernanda Teixeira, AGCO's Communications Manager for South America, the initiative reinforces the company's connection with its own history. “In a year in which Massey Ferguson celebrates 65 years in Brazil and more than 175 years worldwide, seeing the pride of those who helped the brand grow is contagious. Valuing people goes far beyond good delivery; it's about bringing these people back 'home' and recognizing those whose eyes shine with our history. It's a friendship we need to carry on to future generations, ensuring we have many more Legends in the future.”

The initiative also included an online meeting with current Massey Ferguson employees, fostering an exchange between generations. During the event, members of the "Legendários" group shared their experiences and work memories, reinforcing the values, culture, and pride of belonging to the brand.

The group, affectionately nicknamed "Legendários" (Legendary Ones), is made up of professionals from different areas and departments who have worked at the company since the mid-1960s and 1970s. With a tradition of holding annual reunions, the group grows with each edition. This year, participants were able to explore the different areas of AGCO's operations in Jundiaí, such as the Parts Distribution Center, the AGCO Academy Training

Center, the Reman Transmission Center of Excellence, and the Customer Experience Center, in an experience that connected the past, present, and future of Massey Ferguson in Brazil.

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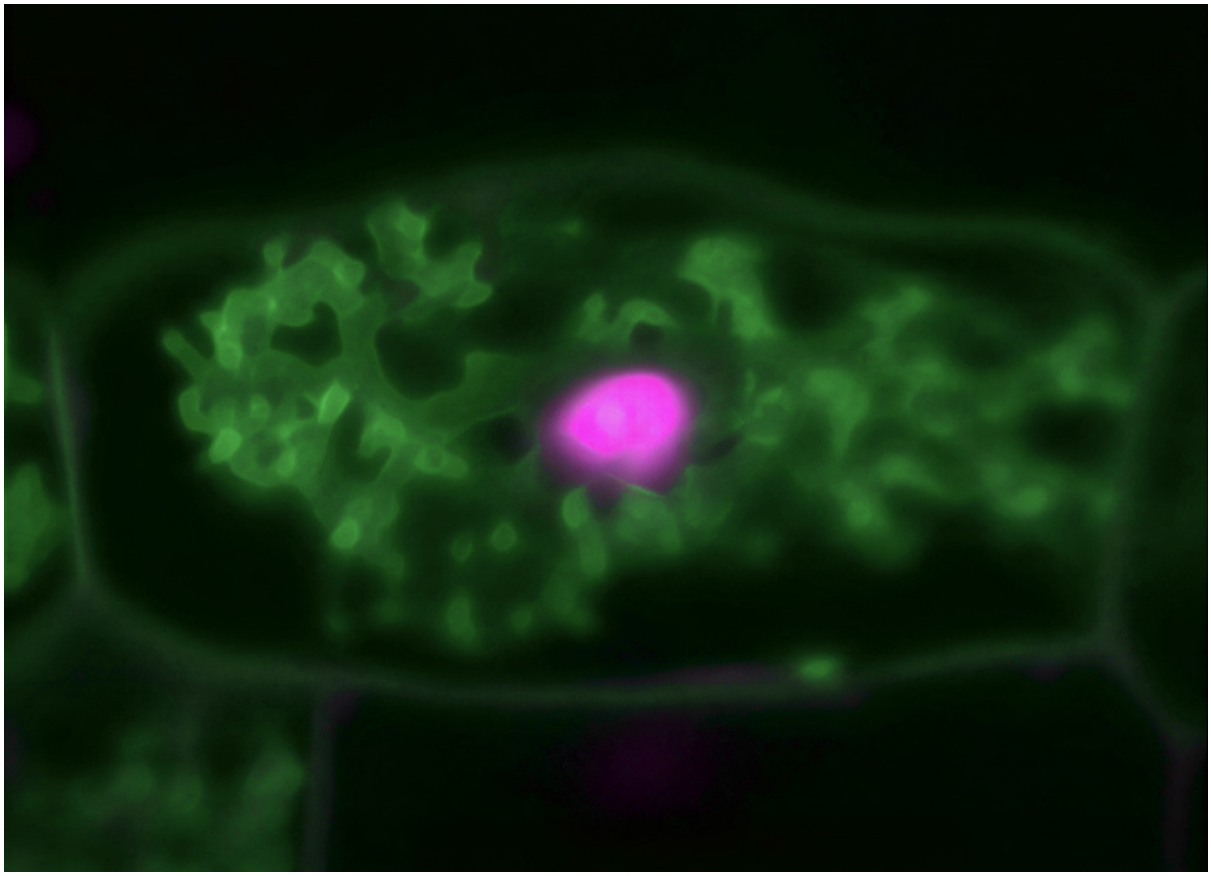
Scientists reveal how plants and fungi cooperate at the molecular level.

Tools identify key mycorrhizal proteins and pave the way for more nutrient-efficient crops.

22.01.2026 | 14:10 (UTC -3)

Cultivar Magazine



The green signal indicates that CKL2 interacts with a 14-3-3 protein in the membranes of root cells colonized by a fungus. The pink signal (in the cell nucleus) serves as a control to confirm cell transformation. The plant is *Medicago truncatula* and the fungus is *Rhizophagus irregularis* -

Photo: Boyce Thompson Institute

Researchers at the Boyce Thompson Institute have identified how plants and fungi coordinate, at the molecular level, a partnership that sustains approximately 80% of the planet's plant species. The study details which proteins interact within the roots to enable the exchange of nutrients. The discovery expands the possibilities for developing cultivars that are more efficient in the use of phosphorus and other minerals.

The association between plants and soil fungi has existed for about 450 million years. The fungi penetrate the roots and provide minerals. The plants reciprocate with sugars and lipids produced in photosynthesis. Despite the agricultural importance of this relationship, data on

how it is organized within cells was lacking.

The team, led by Professor Maria Harrison, combined two experimental approaches. The first uses a yeast screening system, coupled with DNA sequencing, to map interactions between thousands of proteins. The second confirms these interactions directly in living roots, through fluorescence, only when the proteins physically connect at the correct location in the cell.

The methods made it possible to overcome a historical limitation in the field. The cells where the exchange between plant and fungus occurs are rare in root tissue. This made it difficult to observe specific interactions between proteins.

With the new tools, scientists were able to identify molecular partners exactly where the symbiosis takes place.

Concept proof

As a proof of concept, the group analyzed the CKL2 protein, essential for arbuscular mycorrhizae. Screening identified proteins from the 14-3-3 family as the main partners of CKL2. Tests on roots confirmed the interaction in the periarbuscular membrane, the region where nutrient exchange between organisms occurs.

When researchers reduced the levels of 14-3-3 proteins in the plants, fungal colonization decreased by about 31%. The

result indicates a direct role for these proteins in maintaining the symbiosis.

The authors made the experimental resources available to other laboratories. The expectation is to accelerate studies on proteins linked to plant nutrition. This advancement could support breeding programs aimed at reducing the use of synthetic fertilizers, with a direct impact on production costs and the environment.

More information at doi.org/10.1111/nph.70832

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John Deere announces changes to sprayers.

New generation of technology reaches more crops, gains real-time variable rate pricing, and enhances operational efficiency.

22.01.2026 | 11:07 (UTC -3)

Cultivar Magazine, based on information from Jenni Badding

John Deere has announced updates to its application portfolio for the 2027 model

year (MY27). The new features focus on maneuverability, visibility, and precision agriculture. The highlight is the new generation of See & Spray technology, now more comprehensive across crops and operating conditions.

The See & Spray Gen 2 extends localized application to more times during the growing season. The solution allows for more passes throughout the cycle. The system caters to operations of all sizes. The goal involves reducing input costs, dealing with short application windows, and addressing increased weed pressure.

According to the company, the MY27 line now features a single See & Spray platform. The integration replaces the previous Select, Premium, and Ultimate

levels. The change reduces complexity and facilitates adoption by growers.

Producers and applicators can configure the machine without loss of features. The system accepts single or double tanks. The package includes optional features such as full boom lighting for nighttime operations and the ExactApply or Individual Nozzle Control Pro nozzle systems.

The expansion of crops includes wheat, barley, and canola. Detection and treatment occur in real time. The technology adjusts strategies according to the crop and field conditions. The focus is on effective control and optimized use of inputs.

Real-time variable rate

The MY27 also incorporates real-time variable rate application. Previously, this feature only existed in See & Spray Select. Cameras detect live biomass and adjust doses at the nozzle level. This applies to fungicides, desiccants, and growth regulators. The feature eliminates the need to create prescriptions and expands its use in end-of-cycle applications.

Among the specific improvements, the company repositioned the central camera to the front of the sprayer. This reduces dust interference and improves detection. Customers from MY18 to MY26 will have access via an upgrade kit. Speed ??in targeted modes reaches 16 mph,

depending on the crop and configuration. Full boom illumination allows for nighttime applications in fallow areas.

The new capabilities are coming to the MY27 408R, 410R, 412R, 612R and 616R sprayers. The Hagie STS12, STS16 and STS20 sprayers will now offer See & Spray Premium as standard.

Four-wheel steering

The MY27 portfolio also receives four-wheel steering in the 400 Series. The feature includes Crab Steer. The rear wheels follow the tracks of the front wheels at the headlands. This solution reduces crop damage, soil compaction, and interference with drip tapes. The smaller

turning radius improves efficiency in uneven terrain.

Other updates cover the entire portfolio. The ExactInject direct injection system expands chemical flexibility and reduces cleaning time, with an aftermarket option. The G5Plus screen simplifies adjustments and monitoring. Integration with the Operations Center generates weed pressure maps and application data. Refueling alerts and estimated time to empty streamline logistics. The SmartView system improves visibility. Hagie machines are ready for AutoTrac Vision 2.0.

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European viticulture relies on cultural and physical management to control pests.

A scientific review details how decisions regarding planting and annual management reduce damage and economic risks in vineyards.

22.01.2026 | 09:04 (UTC -3)

Cultivar Magazine

Lobesia botrana Photo: Todd Gilligan, USDA

European viticulture is facing reduced availability of insecticides and a loss of molecule efficacy. This scenario is pressuring producers to adopt alternative strategies for controlling grapevine pests. A recent scientific review demonstrates that vineyard design, cultural management, and physical methods directly influence the population dynamics of insects and mites, keeping them below the economic damage threshold.

The study, conducted by researchers at the University of Udine, analyzed the reality of viticulture in Europe. The review gathers information on practices historically neglected due to the widespread availability of insecticides, but

which are now reappearing as relevant tools within integrated pest management.

Climate and location of the vineyard

The choice of planting location determines part of the phytosanitary risk. The average annual temperature determines the number of generations of pests such as *Lobesia botrana* e *Eupoecilia ambiguella* Warmer regions favor additional cycles for these species, increasing quantitative and qualitative losses. In colder areas, the number of generations decreases and the economic risk is reduced.

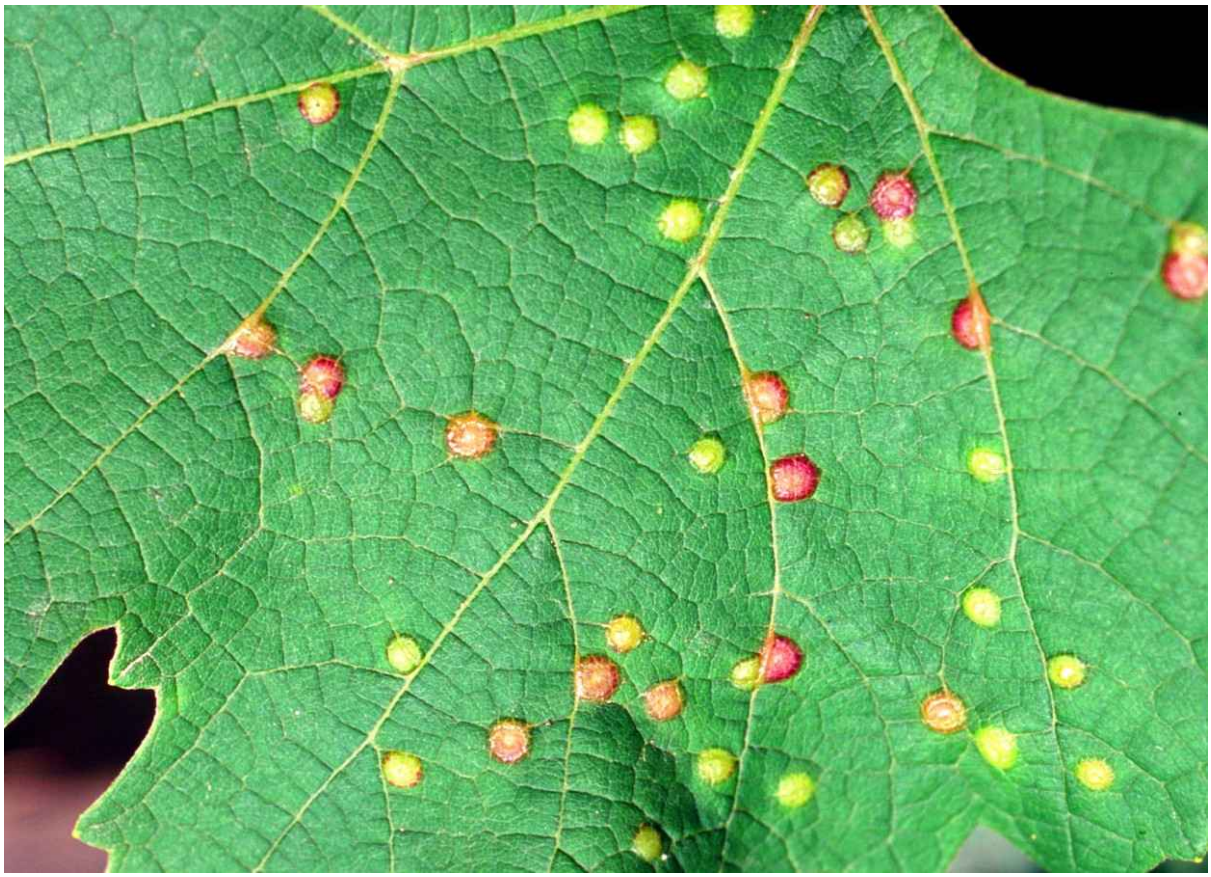
Climate warming also expands the distribution of sap-sucking insects such as

leafhoppers. *Hebata vitis* e *Jacobiasca lybica*These insects feed on the phloem and cause yellowing or reddening of the leaves, followed by reduced photosynthesis and productivity. In dry years, water stress intensifies the symptoms and damage.

Soil and surrounding characteristics

The type of soil directly influences the development of underground pests. *Daktulosphaira vitifoliae* It has less impact in sandy soils, where its root dispersal is limited. However, fertile and vigorous soils favor sucking insects and increase the incidence of indirect damage associated

with fungi.



Daktulosphaira vitifoliae Photo: Jim Occi

The area surrounding the vineyard acts as a source of infestation. Areas with spontaneous vegetation, orchards, woods, or abandoned vineyards harbor species such as *Drosophila suzukii*, *Apolygus spinolae* e *Methcalfa pruinosa*The review

indicates that simply identifying these sources allows for focused monitoring and control at the edges, reducing costs and applications.

Cultivars and agronomic practices

The choice of cultivar influences susceptibility to different pests. Some varieties show a higher infestation rate of mites, such as... *Eotetranychus carpini* e *Panonychus ulmi*Others suffer more damage from carpophagous generations of *L. botrana*Late-harvest cultivars are more exposed to *Planococcus ficus*This increases the risk of losses and transmission of viruses.

Nutritional management plays a central role. Excessive nitrogen fertilization increases populations of *P. ulmi*, *H. vitis* e *P. ficus*Poorly managed irrigation creates microclimates that favor the development of these insects. Irrigation systems with dense canopies hinder the penetration of products and promote the survival of pests and vectors.

Cultural and physical methods

The review highlights the effectiveness of physical practices in the direct or indirect control of pests. Defoliation in the bunch area reduces infestations of *L. botrana* by increasing the mortality of eggs and newly

hatched larvae. Adhesive strips on the trunk limit the movement of P. ficus and ants associated with the pest.

Exclusionary networks reduce the entry of *d.suzukii* During maturation, the removal of loose bark from the trunk exposes hibernating forms of scale insects and moths to natural mortality factors. Sprinkler irrigation mechanically interferes with the mite population and hinders colonization by sucking insects.

Manual collection also appears as a valid strategy in specific situations. The removal of larval nests from *Hyphantria cunea* and the elimination of initial beetle infestations (such as *Altica ampelophaga*They reduce the pressure on future generations.

Diseases and insect vectors

The study focuses on grapevine yellowing diseases, such as bois noir and flavescence dorée. In the case of flavescence dorée, the main vector, *Scaphoideus titanus*It depends on vineyard management and the elimination of infected plants. The presence of alternative hosts outside the production area compromises the effectiveness of isolated chemical control.

Integration as a central strategy

The review concludes that cultural and physical practices do not act in isolation, but rather enhance the efficiency of integrated pest management. By simultaneously affecting pests such as *L. botrana*, *P. ficus*, *H. vitis*, *D. vitifoliae* e *d.suzukii*These strategies reduce dependence on insecticides and contribute to the sustainability of European viticulture. Agronomic decisions, made even before planting, define a large part of the phytosanitary risk throughout the production cycle.

Further information at doi.org/10.3390/insects17010113

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Scientists map the genome of Rhizoctonia solani AG-8

CSIRO study paves the way for new management strategies.

22.01.2026 | 08:04 (UTC -3)

Cultivar Magazine

Demonstration of *Rhizoctonia solani* in the fields - Photo: CSIRO

Researchers at CSIRO, Australia's national science agency, have deciphered the most detailed genetic map ever obtained of the fungus. *Rhizoctonia solani* AG-8, a soilborne pathogen that causes disease in various crops. The study will aid in disease management strategies.

The study succeeded, for the first time, in sequencing and assembling the pathogen's genome at the chromosome level. Researchers identified that the fungus possesses two distinct sets of genetic material, called haplotypes. This condition, known as dikaryotes, explains part of the pathogen's ability to evade traditional control strategies.

According to the scientific team, the two haplotypes exhibit relevant genetic

differences. Each can perform distinct functions during plant infection. Analyses showed that genes from one of the genetic sets tend to be more activated during crop attacks, even when this haplotype appears in lower abundance in the fungus.

The study also revealed that each haplotype has approximately 50 million base pairs distributed across 16 chromosomes. The chromosome-scale assembly overcame limitations of previous research, which worked with fragmented and incomplete genomes.

The genetic data opens up opportunities for broader studies on the fungal population in grain-producing regions of Australia. The new genomic reference allows for investigation into how the

pathogen adapts to different crops and environments.

The researchers' expectation involves the development of more precise management strategies. Detailed knowledge of the genome can guide agricultural practices, crop rotation, and future research aimed at reducing the impact of the disease on crops.

Further information can be found at doi.org/10.1093/g3journal/jkaf252

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Rovensa Group announces changes in executive leadership.

Ignacio Domínguez takes over as president and CEO, while Christian Iaconucci is appointed Vice-CEO.

21.01.2026 | 16:50 (UTC -3)

Cultivar Magazine, based on information from Rovensa

Christian Iaconucci and Ignacio Domínguez

The Rovensa Group began 2026 with changes to its leadership structure. Ignacio Domínguez, who had chaired the Board of

Directors since 2023, will now hold the positions of both Chairman and CEO of the company. Christian Iaconucci has been appointed Vice-CEO of the group. The changes are effective immediately.

According to the company, the appointments follow the completion of the integration process of 12 companies specializing in biosolutions, which resulted in the consolidation of Rovensa Next. This phase was led by Javier Calleja, who stepped down as CEO after its conclusion. With the integration complete, Rovensa states that it is now entering a new cycle focused on accelerating growth and strengthening operational efficiency.

Ignacio Domínguez assumes the executive presidency after a consolidated career in

the global agricultural inputs sector. Before joining Rovensa, he held leadership positions at Adama Agricultural Solutions, including president and CEO, in addition to having worked for several years at American Cyanamid and Syngenta. At the helm of the Rovensa Group, Domínguez will be responsible for defining corporate strategy, governance, shareholder and board relations, as well as decisions related to investments, mergers and acquisitions.

"We are experiencing an exciting moment for the Rovensa Group, and it is a privilege to lead our company in this next chapter as President and CEO, ensuring that Rovensa continues to be a driving force in sustainable agriculture worldwide," said Domínguez.

Christian Iaconucci joins the Rovensa Group with nearly three decades of experience in international leadership, having worked in Latin America, North America, and Europe. The executive has built his career in management, strategy, finance, and business transformation, with over 16 years dedicated to the agricultural sector. Before joining Rovensa, he held senior leadership positions at the Syngenta Group, where he was involved in strategic initiatives in crop protection.

As Vice-CEO, Iaconucci will be responsible for leading the group's daily operations, executing the annual plan, and overseeing business performance. He will also lead organizational transformation initiatives and work seamlessly with business units, reporting directly to the

president and CEO.

"I look forward to working closely with Ignacio and the entire team to consolidate the Group's success and continue its work to generate a positive impact on global agriculture," the executive concluded.

According to Rovensa, the new leadership configuration aims to support the company's long-term strategy, expanding its global presence and reinforcing its positioning in solutions focused on sustainable agriculture.

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AGCO appoints new VP of Sales for North America.

Brad Arnold takes over commercial leadership in one of the company's key global markets.

21.01.2026 | 14:01 (UTC -3)

Cultivar Magazine

Brad Arnold (pictured) has been appointed Vice President of Sales for AGCO in North America, leading the company's commercial strategy in one of its key

global markets. The executive has been with the company for seven years and has held key positions within the group, reinforcing his familiarity with the portfolio and distribution network. He will be based in Atlanta, Georgia (USA).

Throughout his career at the company, Arnold led strategic brands and units, such as Massey Ferguson in North America and Precision AGCO, in addition to managing global products as senior vice president.

According to the executive, the focus of the new role will be the alignment between business, distribution channels, and partners. "The integration of our commercial operations with the dealer network will bring greater efficiency and strengthen our ability to serve farmers," he

stated.

Before AGCO, Arnold built his career at companies like Precision Planting and Caterpillar, holding leadership positions. He holds a degree in Business Administration from Eastern Illinois University and a master's degree in Christian Studies.

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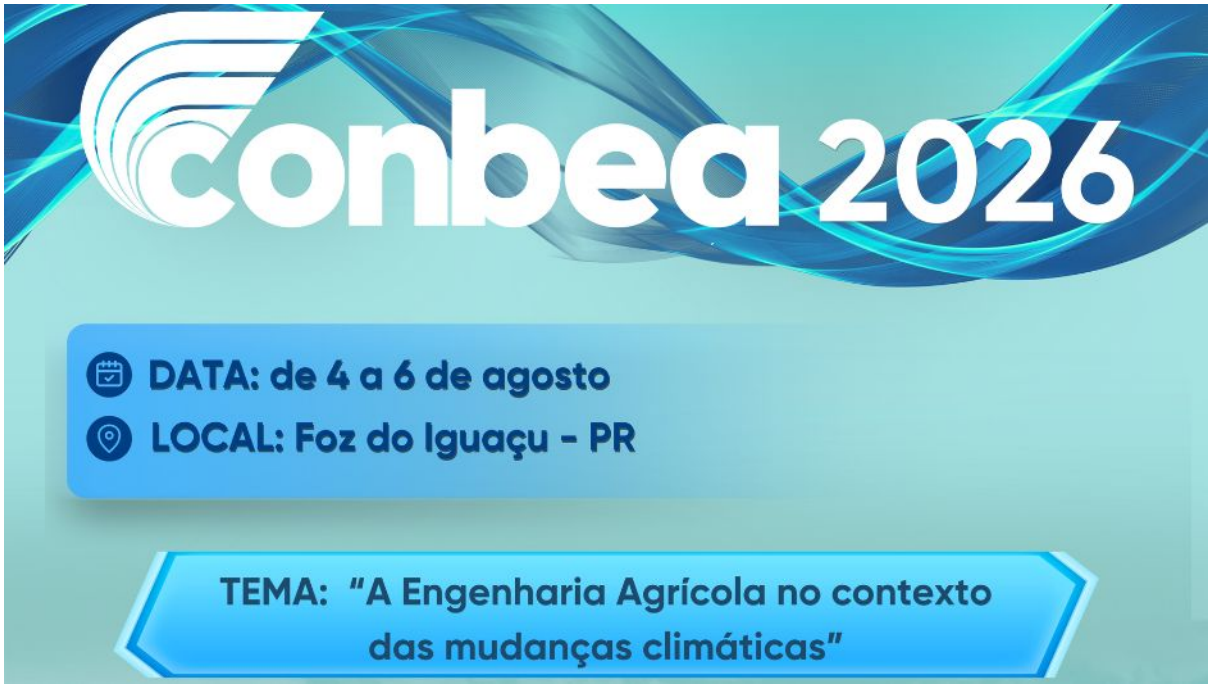
Conbea 2026 discusses agricultural engineering and climate.

The congress will be held in August in Foz do Iguaçu, focusing on the challenges of climate change.

20.01.2026 | 16:50 (UTC -3)

Cultivar Magazine



Foz do Iguaçu (PR) will host the 54th Brazilian Congress of Agricultural Engineering (Conbea 2026) from August

4th to 6th, 2026. With the theme "Agricultural Engineering in the context of climate change," the event is among the leading scientific forums in the field in the country and is expected to bring together researchers, professors, professionals, and students for the presentation of technical papers, knowledge exchange, and debate on the current and future challenges of engineering applied to agriculture.

Organized by the Brazilian Association of Agricultural Engineering (SBEA), the congress is currently accepting submissions of scientific papers until February 22nd. Those interested can find more information and guidelines for registration and submission on the event's official website (www.conbea.org.br).

SBEA also highlights that members of the organization have access to exclusive discounts on registration for Conbea 2026.

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Rice cultivars emit methane at similar levels.

Study in floodplain areas of São Paulo finds no relevant difference between IAC 105 and Epagri 106 in irrigated cultivation.

20.01.2026 | 15:12 (UTC -3)

Cristina Tordin, Cultivar Magazine edition

Research conducted in a lowland area in the interior of São Paulo showed that rice cultivars with distinct agronomic

characteristics can exhibit very similar methane emissions during irrigated cultivation. The study was carried out in Pindamonhangaba, in the Paraíba Valley, and evaluated the IAC 105 and Epagri 106 varieties, which are widely used in the region.

Measurements indicated cumulative methane emissions of 118 kg per hectare for the IAC 105 cultivar and 109 kg per hectare for the Epagri 106 cultivar throughout the 2015 growing season—a difference considered statistically insignificant. This result is noteworthy because it diverges from some international literature, which tends to associate plant characteristics, such as height, biomass, and number of tillers, with variations in emissions of this greenhouse

gas.

Flooded rice is one of the main global anthropogenic sources of methane, a gas with a warming potential about 28 times greater than that of carbon dioxide. In Brazil, more than 80% of production occurs in flooded areas, which reinforces the importance of studies that assess the relationship between agricultural practices, cultivar selection, and climate impact.

According to Embrapa Environment researcher Magda Lima, the experiment evaluated seasonal emissions in crops grown in a pre-germinated system with a continuous water layer. The IAC 105 cultivar has an intermediate cycle, while Epagri 106 has a shorter cycle; differences that, in this case, did not result in

significant variations in methane emissions.

“Despite the differences in the development cycle, the two cultivars showed similar emission levels throughout the growing season. This indicates that, under the conditions evaluated, the choice between these varieties does not significantly alter the volume of methane released,” explains the researcher, also highlighting that the use of cultivars changes over time as new varieties are developed.

Throughout the crop cycle, emissions increased as the plants developed, following tillering, and peaked during flowering. This behavior is already known in irrigated rice systems and is associated

with greater microbial activity in flooded soil and the release of organic compounds by the roots, which feed methane-producing bacteria.

According to Unicamp researcher Giovana Batista, the study did not identify a correlation between agronomic characteristics of the plants—such as height, number of tillers, or grain productivity—and the volume of methane emitted. "Even parameters traditionally associated with emissions did not show a significant influence under the conditions evaluated," she states.

The emission factors estimated in the experiment were also below the average used by the Intergovernmental Panel on Climate Change (IPCC) for Brazil. While

the IPCC adopts an average value of 1,62 kg of methane per hectare per day for irrigated rice, the study estimated 0,98 kg for IAC 105 and 0,95 kg for Epagri 106. According to the researchers, late planting and a harvest marked by low rainfall throughout the state may have contributed to these lower numbers.

Another indicator analyzed was the productivity-adjusted global warming potential, which relates emissions to crop yield. Even with productivity lower than the potential of the cultivars, the index was identical for both: 1,02 kg of CO? equivalent per kilogram of rice produced, indicating a similar climate impact.

The authors emphasize that the results reinforce the need to expand studies with

more contrasting cultivars and under different management, climate, and soil conditions. "Identifying varieties and practices with a smaller climate footprint is strategic for the sustainability of rice farming," they assess.

In a context of climate change and increasing pressure for more sustainable production systems, the data contribute to improving national inventories of greenhouse gas emissions and can support public policies and technical decisions aimed at producing rice with less environmental impact.

The study involved researchers from Embrapa Meio Ambiente, Unicamp, FAJ, and Esalq and was published in *Contemporary Journal (vol. 5, no. 11, 2025)*.

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Mosaic has a new VP of Supply Chain for Brazil and Paraguay.

João Roberto Galhardo has 28 years of experience in the fertilizer sector and approximately 20 years with the company.

20.01.2026 | 11:10 (UTC -3)

Cultivar Magazine

With 28 years of experience in the fertilizer industry, **John Roberto Galhardo** (pictured) has assumed the position of

Vice President of Supply Chain for Brazil and Paraguay at The Mosaic Company Brazil. An agricultural engineer, the executive has a solid track record in strategic and operational planning and has been with the company for over 20 years.

Prior to his new position, Galhardo held the role of Senior Supply Chain Director, and has accumulated experience in sales and logistics throughout his career. He graduated from São Paulo State University (Unesp) and holds an MBA in Economics and Business Management.

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Massey Ferguson is betting on AI to increase efficiency on the field.

Embedded technologies optimize agricultural operations from planting to harvesting.

20.01.2026 | 10:48 (UTC -3)

Flavia Amarante, Cultivar Magazine edition

The incorporation of artificial intelligence into agricultural machinery has increased

operational efficiency in the field and contributed to cost reduction, increased productivity, and more rational use of inputs. At Massey Ferguson, AI-based solutions are present in various stages of agricultural production, from planting to harvesting, serving everyone from small farms to large operations.

According to the manufacturer, the strategy has been to make the technologies increasingly intuitive and accessible to producers. "We have been working to ensure that producers of all profiles and crops can take full advantage of the innovations, optimizing operations and reducing costs," says Lucas Zanetti, Product Marketing Manager at Massey Ferguson.

In tractors, artificial intelligence works in an integrated way between the on-board controller, the MF Guide autopilot, the transmission, and the engine. This combination allows for more efficient operation, with less wear on components and reduced fuel consumption. An example is the Dyna-7 transmission, available in the MF 8S series, which offers 28 forward and 28 reverse speeds, distributed in four groups and seven uninterrupted gears, automatically adapting to working conditions.

The MF 8S can also be equipped with the Massey Ferguson Connect telemetry system, which enables remote machine monitoring and real-time adjustments to improve performance. The Dyna-VT CVT

transmission automatically adjusts engine speed to achieve the desired speed, ensuring better performance according to the soil and terrain.

Planting, spraying and rational use of inputs

During the planting stage, precision is enhanced by parallelism between rows, preventing gaps or overlaps in seed distribution. Fleet management allows for real-time monitoring of machine performance and anticipation of maintenance needs, reducing unexpected downtime.

In fertilizer control, Massey Ferguson uses vApply Granular, a technology from Precision Planting, which manages

fertilizer application in two sections and can reduce fertilizer waste by up to 50%, according to the company.

In sprayers, automation also plays a prominent role. The MF 500R model features a weather station integrated into the MF Guide controller, which collects real-time climate data and helps the operator identify ideal conditions for pesticide application. The system also automatically controls boom height and hydraulic system operation, ensuring better coverage and application quality.

Another embedded technology is LiquidLogic, which automates processes such as premixing, recirculation, and application control, increasing precision and reducing input losses. The OptiPulse

system allows automatic control of droplet size, individually at each spray nozzle, reducing the risk of drift and environmental impacts.

Harvesting, data, and decision-making.

The brand's harvesters also incorporate artificial intelligence features. Equipped with autopilot, they contribute to reduced

grain loss and greater operational efficiency. Sensors automatically adjust the platform height, ensuring a more uniform cut.

The MF ProSense productivity monitor collects real-time data, enabling immediate decisions during harvest and providing strategic information for planning the next crop. The integration between soil analysis and productivity mapping helps identify areas that need corrections or increased fertilizer application, optimizing resources.

Technology even in hay.

Artificial intelligence is also present in haymaking operations. The MF 4160V balers use intelligent controllers to regulate cutting height, gate opening and closing,

and bale size definition. Models equipped with cameras allow for automatic adjustment of these parameters, ensuring greater uniformity and facilitating storage and transport.

According to Zanetti, precision agriculture is no longer exclusive to large farms. "Small, medium, and large farmers can implement autopilot, telemetry, and application control in their machines, achieving significant gains in productivity and cost savings," he concludes.

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Sebastián Puebla assumes the role of after-sales commercial manager, focusing on parts, for AGCO Latin America.

The professional will now be responsible for the company's tactical operations in the region.

20.01.2026 | 09:18 (UTC -3)

Cultivar Magazine

Sebastián Puebla (pictured) has been appointed After-Sales Commercial Manager, focusing on parts, for Latin America at AGCO, a position he assumed in January 2026. He works from Argentina, with responsibility for the company's tactical parts sales in the region. Sebastián continues to report to Felipe Mesquita, After-Sales Manager for the Latin American market.

Puebla was promoted after three years as commercial coordinator of export parts in South America, a role in which he led the development of the after-sales business in the Massey Ferguson and Valtra networks in countries such as Uruguay, Chile, Bolivia, Peru, and Ecuador. During this period, he led sales and marketing initiatives, dealer training, and actions

aimed at increasing the efficiency and profitability of operations, based on performance indicators and warranty management.

With a solid track record in after-sales service, the executive also has experience as After-Sales Territory Manager at AGCO in Argentina and previous experience in the automotive sector, where he worked for over a decade at Volkswagen in positions related to service management, customer relations, and operational quality.

With a degree in Business Administration and a specialization in Marketing, Puebla will be responsible for expanding and strengthening AGCO's after-sales operations in Latin America, a strategic area for customer loyalty and business sustainability in the agricultural machinery

market.

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Micronutrients are gaining a central role in cotton productivity.

Scientific review points to boron, iron, manganese, and zinc as key to the crop.

20.01.2026 | 06:24 (UTC -3)

Cultivar Magazine

Photo: Wenderson Araujo, CNA

Cotton productivity demands more than just nitrogen, phosphorus, and potassium. A North American scientific review shows that boron, iron, manganese, and zinc directly influence yield, boll retention, and fiber quality. Neglecting these micronutrients amplifies production failures even in areas well-fertilized with macronutrients.

The study brings together physiological, molecular, and agronomic advances on the role of these elements in cotton. The authors highlight effects on photosynthesis, cell wall integrity, hormonal signaling, and stress tolerance. These processes support root development, reproductive formation, and boll filling.

Boron deficiency reduces pollen germination and carbohydrate transport. The problem increases the shedding of reproductive structures and limits the utilization of phosphorus and potassium. Adequate levels favor the retention of flower buds, boll fixation, and maintenance of photosynthetic activity.

Iron plays a role in chlorophyll synthesis and electron transport. A lack of this nutrient causes chlorosis, reduces photosynthesis, and compromises boll retention, especially in soils with high pH. Manganese participates in photosystem II and antioxidant defense. Deficiency affects enzymes, accelerates leaf senescence, and reduces growth. Zinc regulates enzymes, hormones, and reproductive

development. Deficiency causes short internodes, smaller leaves, and poorly formed bolls.

Absorption and balance

The review identifies key genes in controlling the absorption and balance of these micronutrients. Among them are BOR1 for boron, IRT1 for iron, NRAMP1 for manganese, and ZIP family transporters for zinc. These genetic targets pave the way for breeding programs focused on nutrient use efficiency.

Advanced phenotyping technologies are gaining prominence. Drones with multispectral sensors make it possible to detect nutritional stress and differences

between genotypes. Techniques such as single-cell RNA sequencing help to map regulatory networks associated with nutritional efficiency.

The authors indicate new avenues for research. The use of microRNAs, gene editing via CRISPR, and precision nutritional management appear as strategies to increase the efficiency of boron, iron, manganese, and zinc. The integration of these approaches can reduce environmental impacts and close productivity gaps in cotton.

The conclusion reinforces the need to review fertility programs. The balance between macro and micronutrients defines the performance of cotton plants in sustainable systems. An exclusive focus

on N, P, and K leaves room for avoidable losses in yield and quality.

Further information at doi.org/10.3390/ijpb17010007

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Defensive metabolites in corn attract nematodes.

Study shows that benzoxazinoids alter rhizosphere bacteria and guide root-knot nematodes to the roots.

20.01.2026 | 06:14 (UTC -3)

Cultivar Magazine

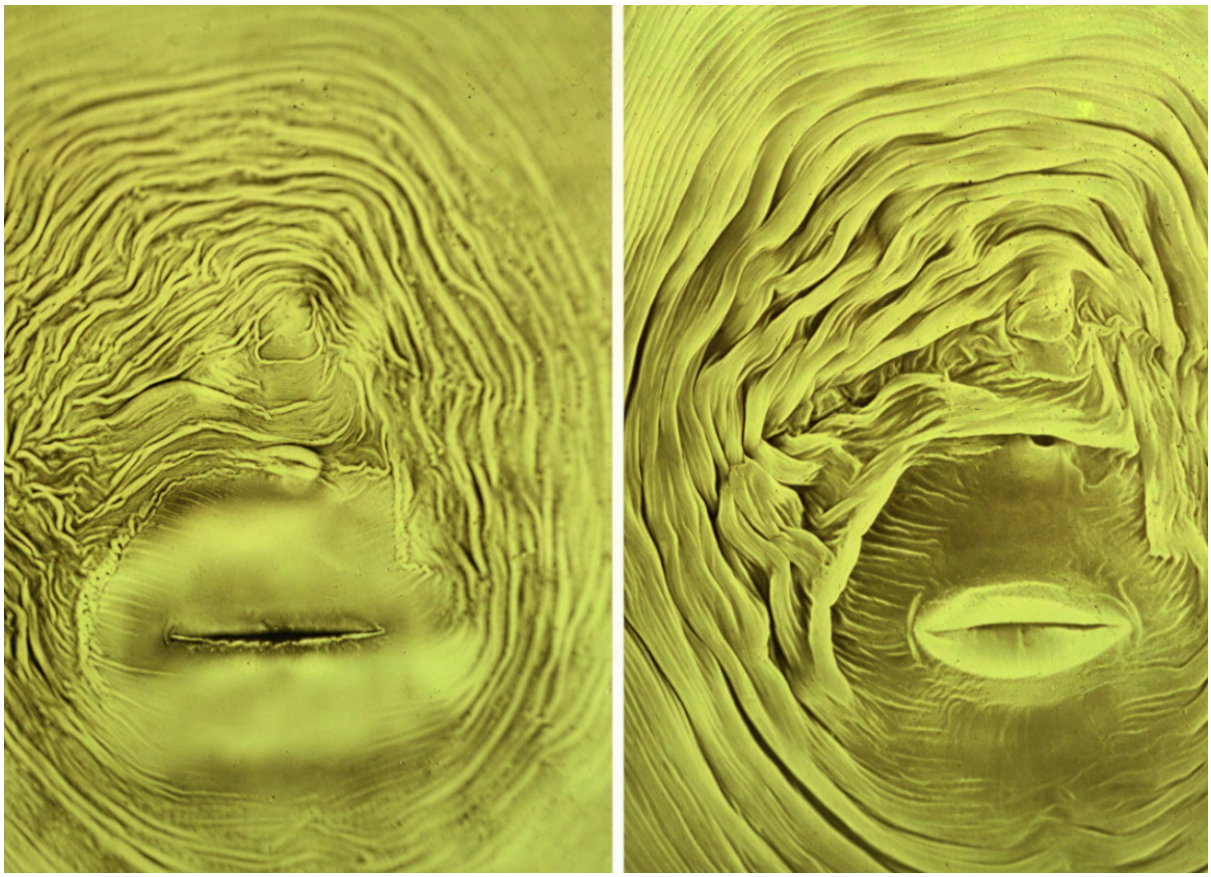

Photo: Jonathan D Eisenback, Virginia Polytechnic Institute

Plant-parasitic nematodes are among the most destructive soil pests in global agriculture. Recent research has identified that benzoxazinoids (BXs), secondary defense metabolites of maize, facilitate the location of the host plant by root-knot nematodes*Meloidogyne incognita*) and increase root infection.

This study investigated the interaction between plant metabolites, rhizosphere microorganisms, and host-searching behavior. The results indicated that benzoxazinoids released by maize roots, especially 6-methoxybenzoxazolin-2-one, act as potent attractants for nematodes. The effect occurred only in the presence of a soil matrix.

Analysis showed that this compound alters the abundance and composition of rhizosphere bacteria. These bacteria play a central role in both attracting and infecting nematodes. Microorganisms associated with benzoxazinoid-producing plants emit volatile compounds such as methyl ketones and 2-phenylethanol.

Nematodes use these volatiles as chemical signals to locate host plants. Detection involves specific chemosensory genes, including Mi-odr-1, Mi-odr-7, and Mi-gpa-6.

The study provides mechanistic evidence that nematodes exploit plant-microorganism interactions, shaped by secondary metabolites, to optimize host seeking and maximize their performance in

agricultural soil.

Further information at doi.org/10.1038/s41477-025-02205-4

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CNH appoints Sarah Lynn Waltner as global platform manager.

Executive to lead the company's global crop protection platform.

19.01.2026 | 17:28 (UTC -3)

Cultivar Magazine

CNH promoted a reorganization in its structure and defined **Sarah Lynn Waltner** (pictured) as Global Platform Manager for Crop Protection. The executive will

assume the role from the United States, with responsibility for the company's strategy and solution development in this area on a global scale.

Having recently led the global commodities division in Precision Technology at CNH, Sarah has built a career focused on integrating technology, operations, and the supply chain. Prior to that, she accumulated over 18 years of experience at Raven Industries, where she held management positions in global sales, logistics, operations, and general management.

Trained as an electrical engineer at South Dakota State University, the executive also holds an MBA from the Carlson School of Management at the University of Minnesota.

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Allterra has a change in its Marketing management.

Karime Nahass arrives to integrate brand, product, and market strategy.

19.01.2026 | 16:18 (UTC -3)

Mariana Cremasco

Allterra begins 2026 with another strategic reinforcement in its executive structure. Karime Nahass assumes the position of Marketing Director, with the mission of

leading the Marketing and Research & Development (R&D) areas, in addition to integrating the brand, product and market development fronts, in support of the company's technology portfolio expansion plan.

With over 15 years of experience in agribusiness, especially in the seed sector, Karime has built a solid career in Marketing and Sales, with direct involvement in business development and team management. Throughout her career, she has held significant positions in major companies in the sector, such as Syngenta, where she worked for over six years and most recently held the position of Commercial Director, and Monsanto/Bayer, where she remained for over nine years, ending her tenure as

Business Manager.

His experience includes portfolio development and management, go-to-market strategies, product pipeline structuring, and defining commercial strategies, involving pricing, marketing, and sales, always with a strong connection between strategic vision and execution in the field.

Karime holds a degree in Business Administration from the Federal University of Lavras, an MBA from the Getúlio Vargas Foundation (FGV), and executive training in Business Strategy from the University of La Verne in the United States.

Recognized for a leadership style marked by agility, focus on results, and strong execution capabilities, the executive

stands out for her ability to develop teams, connecting performance and organizational culture. At Allterra, her focus will be on strengthening the connection between strategy and execution, contributing to the positioning of the portfolio's technologies in the market and to the generation of sustainable value for the business, at a time of company consolidation and strengthening of an integrated vision between innovation, market, and people.

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Neem, moringa, and bacteria reduce Spodoptera frugiperda in corn.

A combination of plant extracts and antimicrobial agents achieves up to 80% mortality in larvae.

19.01.2026 | 07:09 (UTC -3)

Cultivar Magazine

Photo: Phil Sloderbeck, Kansas State University

Study identified high efficiency in controlling fall armyworm (*Spodoptera frugiperda*) The strategy involved using a combination of neem and moringa extracts and plant-associated bacteria. It achieved up to 80% mortality in larvae, the most vulnerable stage of the pest, and reduced leaf damage under both greenhouse and field conditions.

The research evaluated ethanolic extracts of neem (*Azadirachta indicates*) and moringa (*Moringa oleifera*) along with bacteria isolated from corn leaves, roots, and stalks. Tests indicated better performance when management occurred in the early stages of infestation.

Chemical analysis by chromatography identified eight bioactive compounds in the plant extracts, with insecticidal, pesticidal,

and antibacterial action. Among them are fatty acids and esters associated with the inhibition of insect development.

The researchers also isolated 89 bacteria from the corn and selected four with the greatest potential for biocontrol. The strains belong to the genera Bacillus and Enterobacter. In a greenhouse, two of them exceeded 80% effectiveness in controlling the pest.

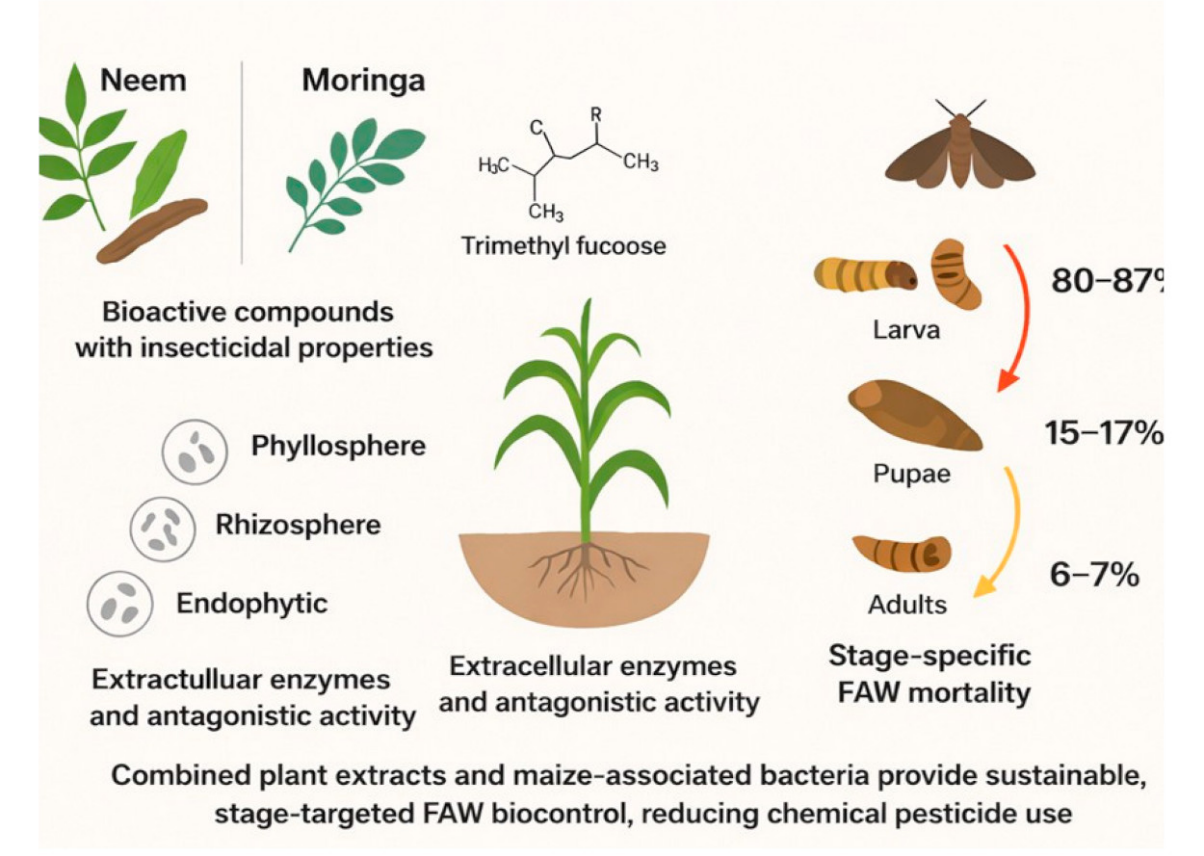
Efficiency in control

The results showed a direct correlation between enzyme production by bacteria and efficiency in controlling the caterpillar. Strains with higher chitinase, protease, and glucanase activity performed better.

Tests with plant extracts indicated a dose-dependent effect. Intermediate and high concentrations caused high mortality in larvae. Pupae and adults showed low susceptibility, with mortality below 17% and 7%, respectively.

In the field, treated plants showed less defoliation and better vegetative development compared to the untreated area. Chemical control was not included in the tests.

More information at doi.org/10.3390/insects17010110



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US Supreme Court to hear Durnell v. Monsanto case

Ruling could unify understanding on pesticide labeling.

18.01.2026 | 15:09 (UTC -3)

Cultivar Magazine

Photo: Tim Mossholder

The United States Supreme Court has decided to hear the case Durnell v. Monsanto, currently a subsidiary of Bayer. The company filed its appeal with the court in April 2025. The ruling will address the divergence among federal courts regarding the application of federal preemption in the litigation involving the glyphosate-based herbicide Roundup.

Technically, the judges will answer the following question: "whether the Federal Insecticide, Fungicide, and Rodenticide Act precludes a claim of failure to provide a warning based on the label, in cases where the EPA (United States Environmental Protection Agency) has not required the warning."

Bayer has stated that it expects a decision on the merits by June of this year. The company's CEO, Bill Anderson, said the decision also represents progress in Bayer's strategy to contain the litigation.

The Supreme Court had already requested an opinion from the U.S. Attorney General. In December, the government representative, John Sauer, agreed with the need for a review of the case. In his petition, Sauer argued that upholding the Durnell case decision would allow juries to disregard the EPA's (U.S. Environmental Protection Agency) technical analyses of glyphosate safety.

Sauer argued that the EPA repeatedly approved Roundup labels without warnings about cancer. He believes the

preemption provision in the Federal Insecticides, Fungicides, and Rodenticides Act (FIFRA) must be respected. The Attorney General also warned of the risk that manufacturers will face conflicting requirements across the 50 U.S. states.

Monsanto argues that the division among federal courts necessitates a unified position from the Supreme Court. The Third Circuit Court of Appeals ruled in the Schaffner case that FIFRA prevents lawsuits based on allegations of failure to provide warning under state law. However, the Ninth and Eleventh Circuit Courts, as well as the Missouri Court of Appeals, have ruled otherwise.

The Durnell case was tried in October 2023 in St. Louis, Missouri. The jury dismissed two charges and refused to

award punitive damages. However, it found that the company failed to warn about alleged product risks and awarded $1,25 million in damages. The company appealed in August 2024. In February 2025, the appeals court upheld the conviction. The Missouri Supreme Court declined to review the case. Monsanto then appealed to the U.S. Supreme Court in April.

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