March 8, 2025

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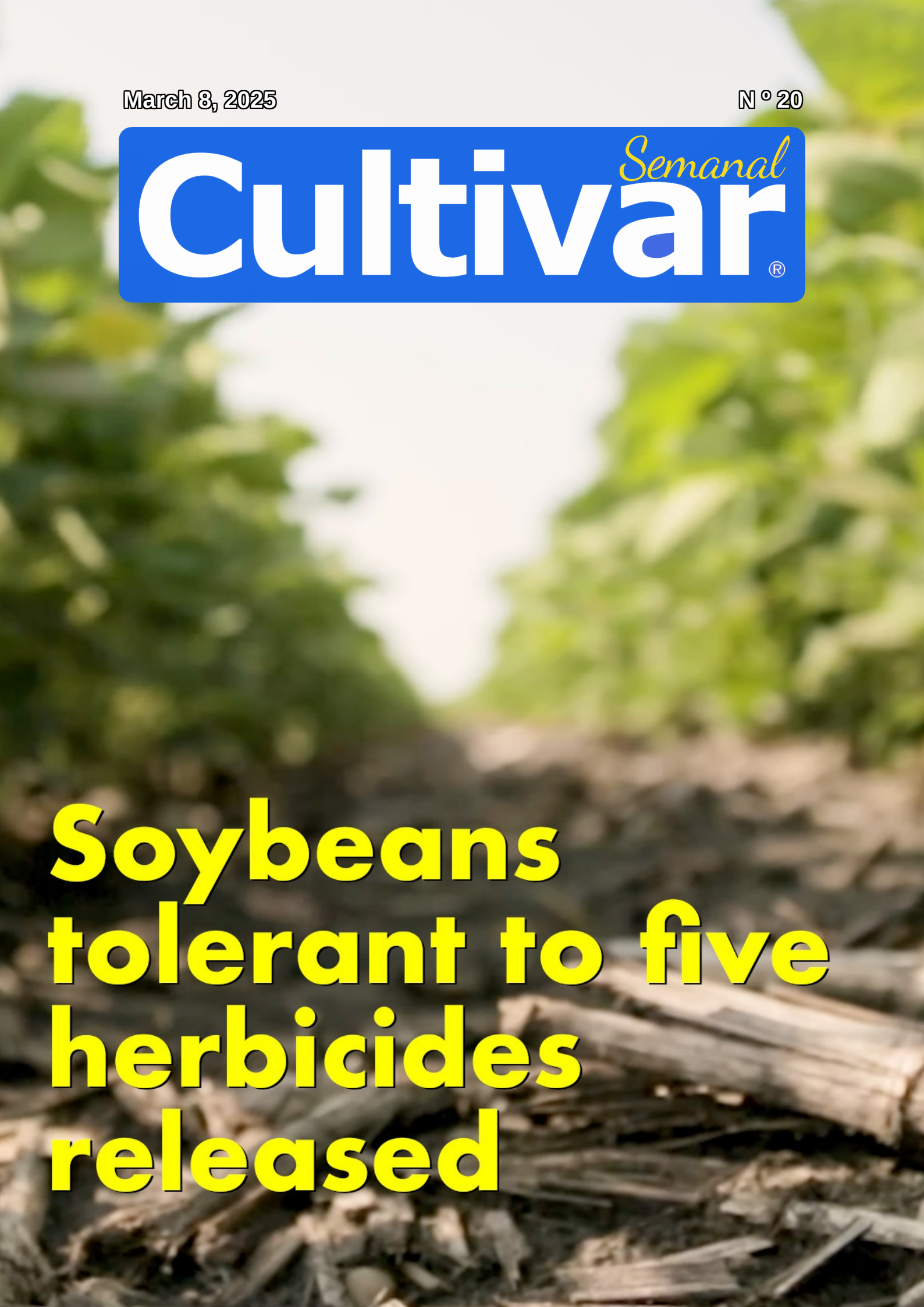
Cultivar Semanal ®



Soybeans tolerant to five herbicides released

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Bayer launches Vyconic soybean with five herbicide tolerances

It combines resistance characteristics to the herbicides dicamba, glufosinate, mesotrione, 2,4-D and glyphosate

03.03.2025 | 14:47 (UTC -3)

Cultivar Magazine

Bayer has announced the launch of Vyconic technology for soybeans. According to the company, it will be the first to offer tolerance to five herbicides in a single genetic event. The presentation took place during the Commodity Classic 2025, in Denver, United States.

Vyconic's key innovation is its combination of resistance to the herbicides dicamba, glufosinate, mesotrione, 2,4-D and glyphosate.

Two tolerances have been added in relation to previous generations: mesotrione and 2,4-D. Both herbicides are effective in combating broadleaf weeds.

The company also highlights that Vyconic will be developed with advanced genetics to ensure high production potential.

According to Kacy Perry, soybean business leader for Bayer's Crop Science division in North America, the new technology will allow farmers to customize their weed management programs, which can result in greater control effectiveness and higher productivity.

According to Brian Naber, president of Bayer's Crop Science division for North America, Australia and New Zealand, the launch of Vyconic reflects the company's commitment to innovation in agriculture.

The technology is expected to be available to farmers in the United States and Canada starting with the 2027 crop year. In the meantime, Bayer will continue to develop proprietary herbicide formulations to optimize weed management with

Vyconic.

In Brazil, Bayer applied for registration of the Vyconic brand on 27/02/2024.

Update: Bayer confirms Vyconic in Brazil in 2028 (click here to read)

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Corn farmers need more fertilizer annually

Research highlights increased demand due to climate change and productivity

07.03.2025 | 14:48 (UTC -3)

Cultivar Magazine

Photo: Alex Schaffer / Iowa Soybean Association

Corn farmers in the U.S. Midwest have needed to increase nitrogen fertilizer application by 1,2 percent annually over the past three decades to maximize profitability, according to a study by Iowa State University (ISU).

The trend, linked to nitrogen loss in wetter springs and rising yield targets, challenges the previous assumption that optimal fertilizer rates remain static over time.

Analyzing data from experiments at ISU and the University of Illinois between 1991 and 2021, the researchers found that optimal nitrogen rates rose in parallel with corn yields, which also grew by 1,2 percent per year.

“It’s like a bank account: If you withdraw more, you have to deposit more,”

explained co-author Michael Castellano, a professor of agronomy.

The results confirm reports from Iowa farmers, who were already reporting increased fertilizer use.

efficiency gains

Although nitrogen use has increased, practices such as crop rotation, improved drainage, and spring application have improved efficiency.

Today, growers are seeking to apply 0,7 pounds of nitrogen per bushel (a measure of volume), up from 1,2 pounds per bushel 30 years ago.

Matthew Helmers of ISU highlighted that tools such as the recently launched N-

FACT (Nitrogen Fertilizer Application Advisory Tool) offer specific recommendations for each area, balancing profitability and sustainability.

More information can be found at

doi.org/10.1038/s41467-024-55314-7

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Flavescence dorée threatens vineyards in Switzerland

Studies indicate that the neighboring forest may act as a reservoir for the disease

07.03.2025 | 14:10 (UTC -3)

Cultivar Magazine

When infected with flavescence dorée, grapevine leaves become brittle, curl toward the underside of the leaf, and may turn yellow, red, orange, or purple - Photo: Agroscope

Flavescence dorée, a disease caused by phytoplasma *Candidatus Phytoplasma vitis* , is advancing on vineyards in the canton of Ticino, Switzerland. And causing concern among winegrowers. Transmitted by the insect *Scaphoideus titanus*, known as the American grapevine leafhopper, the disease has no effective treatment and leads to the death of infected plants.

Researchers at the Swiss center of excellence for agricultural research, Agroscope, have been investigating the disease for years. Initially, its spread was thought to be exclusively an agricultural problem.

However, recent studies indicate that the neighboring forest may act as a reservoir for the disease. Abandoned vines in old

vineyards end up taking root and growing on trees in the forest, serving as a source of infection.

Since 2016, a collaboration between Agroscope and the Swiss Institute for Forest, Snow and Landscape Research (WSL) has been analyzing this dynamic. At thirteen test sites, researchers collected wild grapevine leaves and transmitting insects for laboratory analysis.

The results confirmed that wild grapevines are affected by the same pathogens as cultivated grapevines. Furthermore, the genetic material of the pathogens was identified as identical in both types of grapevines.

The American vine leafhopper *Scaphoideus titanus* is the main vector of flavescence dorée - Photo: Agroscope

The project also revealed that other insects, such as the oriental leafhopper (*Orientus ishidae*), can also carry phytoplasma, making the spread of the disease even more complex.

According to Marco Conedera, project coordinator for the WSL, the fact that

forests serve as a reservoir for the pathogen explains why traditional control measures have not been sufficient to contain the advance of flavescence dorée.

Currently, disease control is based on the use of insecticides, eradication of infected vines and planting of certified pathogen-free seedlings. However, proximity to forest areas can compromise the effectiveness of these strategies. Removing wild vines appears to be a promising alternative to prevent the disease from spreading to new wine-growing regions in Switzerland.

More information can be found at

doi.org/10.1007/s42161-024-01775-0

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Sunflower sowing in Goiás ends on March 31

Planting restrictions are part of a phytosanitary strategy

07.03.2025 | 13:37 (UTC -3)

Cultivar Magazine, based on information from Anna Letícia Azevedo

Photo: Wenderson Araujo

The deadline for sowing sunflowers in Goiás ends on March 31, according to Normative Instruction No. 01/2022 of the Goiás Agricultural Defense Agency (Agrodefesa). The measure seeks to contain volunteer soybean plants (tigera) that germinate between the sunflower rows, preventing the proliferation of Asian rust, a disease caused by the fungus. *Phakopsora pachyrhizi* (learn more here).

Sunflower is a second-season crop in the state and its production has grown in recent years. Goiás leads the national ranking, and the 2024/2025 harvest is expected to reach 76,2 thousand tons, an increase of 70,5% compared to the previous cycle.

Planting restrictions are part of a phytosanitary strategy. The emergence of soybean tiger leaf spot in sunflower crops can favor the spread of Asian rust. There are no selective herbicides to control these plants in sunflower crops registered by the Ministry of Agriculture and Livestock (Mapa), which reinforces the importance of adopting preventive measures.

Agrodefesa's Plant Health Manager, Daniela Rézio, explains that defining sowing and harvesting deadlines aims to minimize phytosanitary risks.

The calendar must be followed to ensure that the soybean health gap period is respected, preventing volunteer plants from serving as hosts for the fungus that causes Asian rust.

The regulation also requires the destruction of volunteer soybean plants in the vicinity of sunflower crops. Only those within the crop can remain until harvest.

For crops sown after March 14, the standard determines the use of short-cycle cultivars, with development of up to 105 days. Harvesting must occur by July 15.

In addition, crop registration with the Goiás Agricultural Defense System (Sidago) is mandatory and must be completed within 15 days after the end of sowing. This measure allows production to be monitored and plant health actions to be planned.

The president of Agrodefesa, José Ricardo Caixeta Ramos, highlights that sunflower cultivation has been consolidated in Goiás

due to its climate adaptation and low incidence of pests. The growth in production reinforces the importance of sanitary measures to preserve productivity and avoid losses to the sector.

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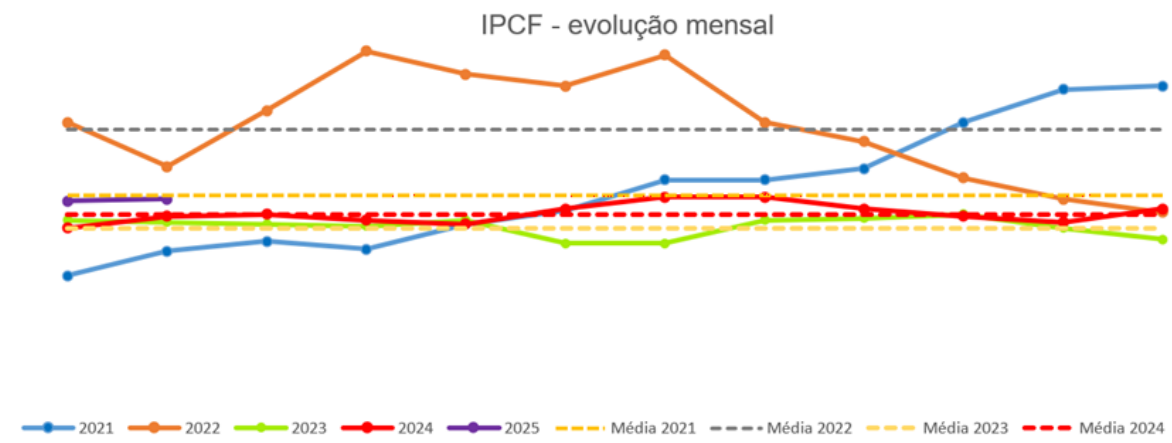
Fertilizer prices rise in February

Average elevation was about 3%

07.03.2025 | 10:41 (UTC -3)

Cultivar Magazine, based on information from Eliane Dalpizol



The Fertilizer Purchasing Power Index (IPCF) for February 2025 closed at 1,1, up 0,6%. Despite a recovery in the price of some commodities, the increase in the average price of fertilizers contributed to the result for the period.

In February, fertilizers showed an average increase of around 3%, driven mainly by the rise in urea and potassium chloride (KCl).

So far, the fertilizer market has been buoyant in 2025, with the end of the second corn planting season approaching and preparations and planning for the next summer harvest beginning, with an emphasis on soybeans.

It is worth paying attention to the harvest in North America, which should have a smaller soybean area this year, according to data from the United States Department of Agriculture (USDA) Annual Forum, falling below market forecasts.

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Bayer seeks authorization to raise funds

Information from Bloomberg Agency

07.03.2025 | 10:09 (UTC -3)

Cultivar Magazine

Bayer AG is seeking shareholder approval to raise capital if it needs funds quickly to deal with its legal problems in the United States. The company's shares plunged after the announcement, according to Bloomberg.

The German company is expected to seek approval at its annual meeting next month for a possible share offering equivalent to 35% of its current share capital, according to a letter from Supervisory Board Chairman Norbert Winkeljohann.

The funds would be used exclusively to strengthen the balance sheet during the resolution of legal disputes in the US, with no intention of financing mergers or acquisitions, according to the executive.

Bayer shares fell as much as 10% on the news, marking their biggest intraday drop since November. The stock has been falling in value since its 2018 acquisition of Monsanto, which reduced the company's market value to about €22 billion ($24 billion). The Monsanto purchase brought products to Bayer's portfolio that have become the subject of litigation in the U.S.

If the fundraising is approved, current shareholders should have subscription rights.

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How soybean diseases reach Brazil

By Erlei Melo Reis and Andrea Camargo Reis

07.03.2025 | 08:51 (UTC -3)

Photo: Paulo Santos

In 1917, Elmer Drew Merrill, in compliance with international rules of botanical nomenclature, proposed that the correct

scientific name for soybeans should be *Glycinemax* (L.) Merrill. The word *Glycine*, is a term derived from the Greek root *glyks* , meaning sweet, probably in allusion to the sweet tuber produced by *Celery*, the plant on which Linnaeus originally based his description of the genus. It was later moved to another genus.

Today, the most widely accepted theory regarding the center of origin of soybeans is that they emerged as a domesticated plant in the middle east of northern China in the 2838th century (early Chou dynasty). "The first written account of soybeans was in the books of Pen Ts'ao Kang Mu, containing the description of the plant by Emperor Shen Nung, in XNUMX BC."

In 1931, Japanese botanists Makino and Nemoto first proposed that soybeans originated in Manchuria.

Soybeans were first mentioned in the United States in an 1804 publication by James Mease, and the first reports of their introduction into South America date back to 1882 in Brazil.

Today, the area cultivated with soybeans in Brazil is over 48 million hectares.

In Brazil, 40 diseases caused by fungi, bacteria, nematodes and viruses are reported. The main ones are caused by fungi and nematodes.

Pathogens that attack the aerial organs of soybeans (leaves, stems and pods) were first reported in Japan and Korea (close to the center of origin), then in the United

States and finally in Brazil.

The transport of soybean genetic material (seeds) has spread the crop's pathogens to all areas where it is currently grown. Some pathogens were reported for the first time in greenhouses at research institutes.

Have quarantine services in the countries to which soybeans were transported been efficient in detecting and preventing their entry into continents and countries? Furthermore, have programs aimed at producing and maintaining disease-free seeds not been seen as a useful tool for integrated management of soybean diseases?

Once introduced into the countries, and since its cultivation is highly attractive to producers (price and liquidity), soybeans

are grown in monoculture. The old problem of soil erosion was almost completely solved with direct planting.

Photo: Marcelo Madalosso

However, the combination of these two practices - monoculture and direct planting - contributes to the survival of phytopathogens and the consequent

worsening of the intensity and damage caused by diseases.

Basic concepts

Control - “It is the use of measures that aim to prevent or reduce the incidence/severity of plant diseases, in order to avoid or reduce the damage caused”.

Control involves the set of tactics to minimize the damage caused by diseases. When deciding to control a disease, one should consider the expected control effectiveness. For example, would the goal be to reduce disease intensity and damage by approximately 40, 50, 60, 70, 80, 90, or >90%?

Integrated Control (IC) - According to the Food and Agriculture Organization of the United Nations (FAO) (1968), CI “is a system of pest management that uses all appropriate techniques and methods, in the most compatible manner possible, to maintain populations of pests at levels below those that cause economic injury”.

Integrated Disease Management (IDM) - a year later, the National Academy of Sciences of the United States (NAS) (1969) presented the official concept of IDM as being “the utilization of all available techniques, within a unified program, in such a way as to maintain the population of harmful organisms below the LDE and to minimize deleterious side effects to the environment”. IDM meets the technical requirements of sustainability in

agriculture.

Damage - is any reduction in the quantity (kg/ha) and/or quality of production (Nuter et al., 1993).

Loss - financial reduction (R$/ha) per unit area, due to damage (Nuter et al., 1993).

Scientists conclude that the most rational procedure is to practice integrated disease management. To do this, it is essential to know the damage that the disease causes. The damage depends on the amount of disease, expressed by a mathematical function that contains the coefficient of damage (Cd).

Component tactics of integrated disease

management (IDM)

Elimination of primary inoculum - The primary inoculum sources for soybean pathogens are seeds, crop residues, volunteer plants, alternative hosts and virus reservoirs. In the case of soil fungi, with saprophytic competition ability, the place where they are found is the soil, containing plant organic matter.

Therefore, in MID, pathogens must be reduced or eliminated from the cited sources.

Production and maintenance of undamaged seeds - The center of origin of soybeans, according to Nikolai Ivanovich Vavilov (1887-1943), is the region of Manchuria, in China. From this

center, soybean seeds were taken all over the world.

The main source of soybean seeds for Brazil continues to be the United States. However, there was a large flow of seeds of transgenic RR soybean cultivars introduced into Brazil from Argentina. The introduction of RR cultivars from Argentina continues to be intense.

The literature confirms that the main diseases of the aerial organs of soybeans were first described in the United States and later in Brazil. Some exceptions are Cercospora blight, frogeye, septoria and downy mildew, which were first described in Japan, but always first in the United States and only later in Brazil. It can be inferred that the source of inoculum for the

pathogens was the soybean seed introduced into Brazil. In the same way, they were and are being taken to states, municipalities and plantations.

It can be inferred that soybean pathogens have accompanied the crop wherever it is grown, thanks to their association with the seeds.

The table below presents a history of occurrence of the main soybean diseases in relation to the country, year and author of the first description.

Nome comum da doença	Agente causal	País, ano e autor do registro			
		Centro de origem da soja e outros	Estados Unidos (maior fluxo de sementes)	Brasil	Argentina
Antracnose	*Colletotrichum truncatum*	Japão, 1917 - Takimoto, (Apud, Andrus & Moore, 1935)	Andrus & Moore (1935)	Tochetto *et al.*, 1961	Bonacic *et al.*, 1982
Cancro-caulívora	*Diaporthe phaseolorum* var *caulivor*a	-	Morgan Jones (1954)	Costamilan, *et al.*, 2008	Pioli *et al.*, 2001
Cancro-meridionalis	*D. phaseolorm* var *meridionalis*	-	1973 - Backman *et al.*, 1985	Yorinori *et al.*, 1989	Pioli *et al.*, 1999
Crestamento cercospora	*Cercospora kikchii*	Japão, 1921 - Susuki (Apud, Murakishi, 1951)	1951 - Gardner (Apud, Murakishi, 1951)	1963 Gomes (1996)	Barreto *et al.*, 1981
Olho-de-rã	*Cercospora sojina*	Japão, 1915 (Hara, Apud, Lehman, 1928)	1924 - Lehman (Lehman, 1928)	Yorinori (1971) Reis & Kimati (1973).	Ploper *et al.*, 2000
Septoriose	*Septoria glycines*	Japão, 1914 (Hemi, Apud, Wolf & Lehman, 1922)	Wolf & Lehman (1922)	Luzzardi *et al.*, 1972	Mitidieri, 1986
Seca-haste e da-vagem	*Phomopsis sojae*	-	Lehman (1920)	?	Barreto *et al.*, 1981
Míldio	*Peronospora manshurica*	Japão, 1921 - Miura (Apud, Lehman, 1923)	Lehman (1923)	Vernetti & Ferreira, 1966/1967 - (Vernetti & Ferreira, 1970)	Mitidieri, 1980

History of the first reports of the occurrence of pathogenic fungi in aerial organs of soybean crops in some countries

There is difficulty in collecting data on soybean seed pathology, especially in studies conducted in Brazil. Most reports do not refer to proof of pathogenicity,

following Koch's postulates (Agrios, 2004). They are usually related to the description of the disease in a crop or region, sometimes mimeographed and/or typed (reports).

Some pathogens of the crop do not depend on the seeds to be transported to all the places where the soybean will be grown. In this case, soil fungi, usually polyphagous, are included, such as *Sclerotium rolfsii*, *Rhizoctonia solani*, *Fusarium tucumaniae*, *F. cuneirostrum*, *F. virguliforme*, *F. brasiliensis* e *Macrophomina phaseolina*. It is difficult to recover the history of this group, identifying the year and the author of the description of its occurrence in Brazil. The same occurs with *Sclerotinia sclerotiorum*, which may be transmitted to the seeds as

sclerotia between them, or as infective mycelium of the cotyledons.

“In nature, pathogens do not separate from the hosts on which they depend nutritionally.” “All necrotrophic parasites of aerial organs are present in the seeds.” Therefore, “in all crops originating from infected seeds, leaf spots, cankers and anthracnose will occur in the aerial organs” (Reis and Casa, 1998; Reis et al., 2004).

To produce undamaged seeds, it is necessary to continuously maintain generations of foundation seeds (small quantities), produced in a greenhouse (RH < 70%), without leaf wetness (rain splashes or irrigation water). If there are no secondary cycles, the seed produced will be undamaged.

Treatment of soybean seeds with fungicides is not sufficiently effective to prevent seed-cotyledon-aerial organ transmission. After transmission, under a favorable environment, secondary cycles are triggered from each focus, resulting in the growth of the disease in the crop.

If the seed has a low incidence of a pathogen, it probably requires several years of repeated cultivation in the same area (monoculture) to allow time for the inoculum to increase and thus cause an epidemic. This must have occurred in the first crops cultivated in Brazil, with seed from the United States. The inoculum is increased, mainly in crop residues, by successive years of monoculture, under a favorable environment. It is the density of inoculum in the straw that causes the

epidemic, damage and the need for chemical control. With a high incidence in seeds, it may be necessary to have fewer monoculture harvests for the disease to reach epidemic status.

Photo: MT Foundation

In the current situation, with most of the cultivated area under direct planting and

soybean monoculture, the adoption of IDM is limited.

Conclusions and doubts

In a new area, in the first year of cultivation, the disease appears or manifests itself in localized foci, where the infected seed was positioned. Transmission occurs and several secondary cycles will follow.

In the direction and place where the seeds are carried, the pathogens follow them.

What has been and is being done to prevent the introduction of soybean pathogens from other countries into Brazil? Have the actions in this regard (legislation

and inspection) been and are they still effective?

By **Erlei Melo Reis** *(University of Buenos Aires, Instituto Agris) and* **Andrea Camargo Reis** *(Agris Institute)*

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RS 2024/25 Harvest: corn and rice harvest advances

Irregular rainfall has led to partial recovery in some soybean areas

06.03.2025 | 17:56 (UTC -3)

Cultivar Magazine

Photo: Vanessa Almeida de Moraes

The drought continues to affect soybean crops in Rio Grande do Sul, causing losses in several regions, mainly in the Center-West of the state. Irregular rainfall has led to partial recovery in some areas, while in others, water shortages have caused symptoms such as leaf curl and abortion of reproductive structures. The crop is in the grain filling phase in 57% of the areas and in the maturation phase in 20%, but the harvest is still in its infancy, reaching only 3% of the planted area.

Corn harvesting is progressing rapidly, with 68% of the area already harvested, benefiting from low air humidity. Rice, on the other hand, is showing momentary water stability and harvesting is progressing, although grain quality in some

crops has been impacted by excessive heat.

Soybeans: drought compromises

Irregular rainfall resulted in significant losses for soybeans in Rio Grande do Sul. Crops in the Central-West region were the most impacted, with severe damage and a reduction in estimated productivity. In the East, where rainfall was more significant, crops maintain a production potential closer to that initially projected.

The Emater/RS survey indicates that the expected average productivity was 3.179 kg/ha, but this should be reduced. The updated figures will be released on March

11, during the 25th Expodireto. Meanwhile, the harvest progress remains slow, reaching only 3% of the cultivated area, especially in crops that had their cycle shortened due to the drought.

In the producing regions, the presence of thrips remains high, exceeding the threshold of economic damage in the Northwest of the State. On the other hand, phytophagous bugs and defoliating caterpillars remain under control within the parameters of integrated pest management.

To avoid losses due to volatilization and drift, producers have prioritized the nighttime application of fungicides against Asian rust and insecticides, with dosage adjustments according to the phenological

phase of the crops.

Corn: stable productivity

The state's corn harvest has already reached 68% of the cultivated area, boosted by favorable weather conditions. Recent rains benefited the second-crop corn crops, ensuring better development. However, the areas planted between November and December had their production potential reduced due to water shortages and high temperatures in January and February.

The average productivity projected by Emater/RS is 7.116 kg/ha. In some regions, such as the Western Frontier, the

harvest was completed with productivity ranging from 5.400 to 8.400 kg/ha in dryland areas and exceeding 12.000 kg/ha in irrigated areas.

Regarding phytosanitary control, second-crop corn has a higher incidence of aphids and leafhoppers compared to first-crop corn, requiring continuous monitoring to prevent transmission of the stunt virus.

Rice: heat affects grain quality

Rice crops have seen harvest progress in all producing regions of Rio Grande do Sul. Despite the temporary recovery of water resources, the intense heat impacted grain quality, especially in the

west of the state, where the proportion of whole grains fell below the commercial standard of 55%. This phenomenon is attributed to the prolonged exposure of panicles to high solar radiation during physiological maturation.

The initial productivity estimated by Emater/RS is 8.478 kg/ha. In some locations, such as Jaguari, productivity exceeds initial projections, reaching 9.000 kg/ha, while in others, such as Cacequi and Restinga Seca, there was a reduction.

Beans 2nd crop: good conditions

The second-season bean crops are mostly in vegetative development, favored by

recent rains. However, there is a forecast of a reduction in the area actually planted due to the difficulties faced by producers in establishing the crop during the dry season.

Phytosanitary monitoring indicates a satisfactory scenario, with occasional occurrences of mites and cowpea. These infestations are being controlled to avoid economic damage. Emater/RS estimates an average productivity of 1.572 kg/ha for this harvest.

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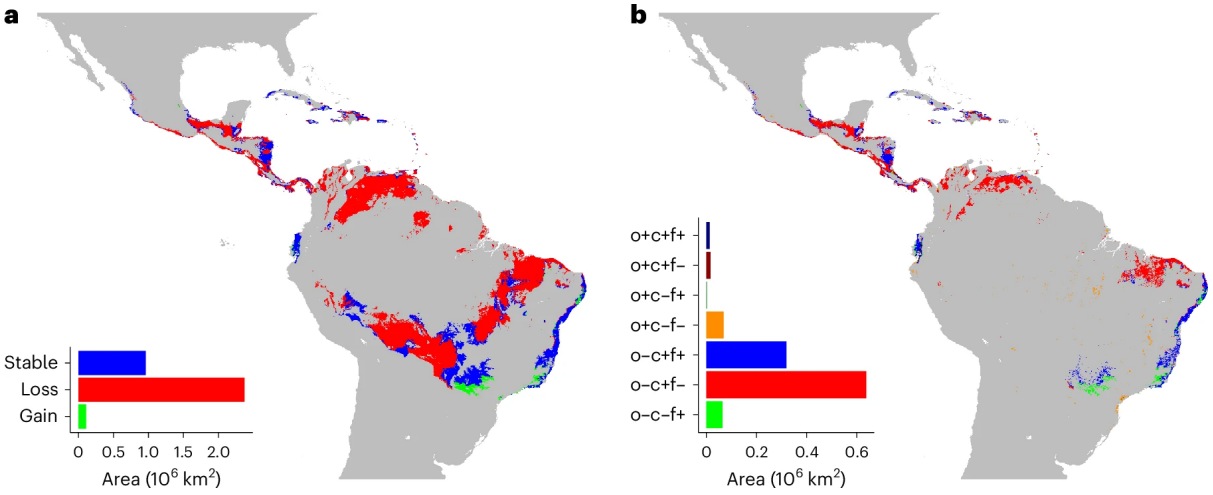
Climate change threatens banana production

The results indicate that global warming will reduce productivity

06.03.2025 | 15:40 (UTC -3)

Cultivar Magazine



(a) Suitability based on climatic and soil factors. Green areas are currently unsuitable (suboptimal) but will become suitable (optimal) in the future; red areas are currently suitable but will become unsuitable. Blue areas will remain suitable. **(B)** Observed distribution and suitability based on climatic, edaphic, and socioeconomic factors. Grid cells are classified by observed banana presence (o+) or absence (o?), predicted current suitability (c+) or unsuitability (c?), and predicted future suitability (f+) or unsuitability (f?). The inset shows the total area of ??each category except the o?c?f? category (gray).

Banana production could become economically unsustainable in much of

Latin America and the Caribbean by 2080. All due to climate change. This is according to a study by the University of Exeter, which reveals that 60% of exporting regions will face difficulties in growing the fruit if there is no urgent intervention.

The research indicates that socioeconomic factors also make it difficult to adapt to the climate. Most plantations are located near densely populated areas and ports, which limits the possibility of moving to regions with more favorable climatic conditions.

Professor Dan Bebber, who led the study, warns that climate change poses a direct threat to global food security and the livelihoods of millions of workers. He advocates investments in adaptation, such

as expanding irrigation and developing more heat-resistant banana varieties.

The study used high-resolution satellite imagery to map banana production areas in Latin America and the Caribbean and estimate the ideal climate conditions for cultivation. The results indicate that global warming will reduce productivity in producing regions and increase workers' exposure to extreme temperatures.

The impacts will be most severe in countries such as Colombia and Costa Rica, which may become too hot for ideal cultivation. In contrast, Ecuador and parts of Brazil are expected to remain important producers, as the impact of the climate in these areas will be less intense.

More information can be found at

doi.org/10.1038/s43016-025-01130-1

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Heatwave and drought threaten coffee harvest in Brazil

High temperatures and water restrictions compromise grain filling and harvest quality, worsening losses for coffee growers

06.03.2025 | 09:25 (UTC -3)

Ana Luiza Silva Felippe

High temperatures and lack of rainfall are severely impacting coffee crops in Brazil, raising concerns among producers and experts. The extreme heat wave is compromising photosynthesis, damaging the formation of beans and increasing the incidence of shriveled and malformed fruits, increasing risks for the 2025 harvest.

According to Marcelo Jordão, an agricultural engineer and researcher at the Procafé Foundation, excessive temperatures can cause necrosis of leaf tissue and leaf burn.

“Intense heat reduces the plant’s ability to capture and use sunlight to produce energy, impacting not only its growth but also the formation of grains. Prolonged exposure to extreme heat compromises

the structure of the leaves and reduces their photosynthetic efficiency," he explains.

The drought further aggravates the situation, causing water stress and impairing the filling of the beans. The impact is more severe in crops with late flowering, which is common this year due to the delay in rainfall. Since the beans still contain a high water content at this stage, they become more vulnerable to dehydration, increasing the risk of deformation and compromising the productivity and quality of the coffee.

Crops with early flowering – stimulated by early rains or irrigation – present a slightly more favorable scenario, as the grains are already at an advanced stage of

granulation, reducing thermal damage.

Measures to mitigate impacts

To reduce losses, experts recommend an integrated management approach.

“The adoption of resilient practices is essential to ensure the sustainability of the sector. The use of sunscreens validated by research, well-nourished plants – with an adequate balance of calcium, magnesium, potassium, manganese and nitrogen – and efficient irrigation are factors that help with thermal regulation and reduce the impacts of heat stress,” highlights Jordão.

Faced with this challenging scenario, producers need to monitor their crops

closely and implement adaptive management strategies to minimize climate impacts, protecting the productivity and quality of Brazilian coffee.

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US grants patent for Bioceres' HB4 GM wheat

HB4 wheat has greater tolerance to drought

06.03.2025 | 07:37 (UTC -3)

Cultivar Magazine, based on information from Paula Savanti

Bioceres Crop Solutions announced that it has received approval from the United States Patent and Trademark Office (USPTO) for the first patent specific to HB4 wheat (IND-ØØ412-7). This is the first of four patent applications the company is seeking for HB4 wheat in the United States.

HB4 wheat has greater drought tolerance and improved weed management options compared to conventional wheat.

The technology has already received approval from the U.S. Department of Agriculture (USDA) for cultivation and the Food and Drug Administration (FDA) for use in food and feed. The United States is the world's fourth-largest wheat producer, with about 40 million acres harvested last

crop year.

Bioceres Crop Solutions also said it will follow the guidelines of the US Wheat Associates (USW) and the National Association of Wheat Growers (NAWG) for the responsible commercialization of biotechnologies in the industry.

These guidelines include ongoing dialogue with associations, obtaining regulatory approvals in key export markets, establishing limits for the presence of GMOs in conventional batches, providing detection tests and product management measures, such as education programs and the use of certified seeds.

The commercial launch of HB4 wheat in the U.S. will occur through a broad licensing model, aligned with the

company’s global strategy for its HB4 technology.

For more information, click:

- US Government Approves Bioceres HB4 Wheat Production
- Bioceres announces commercial release of GMO wheat in Brazil

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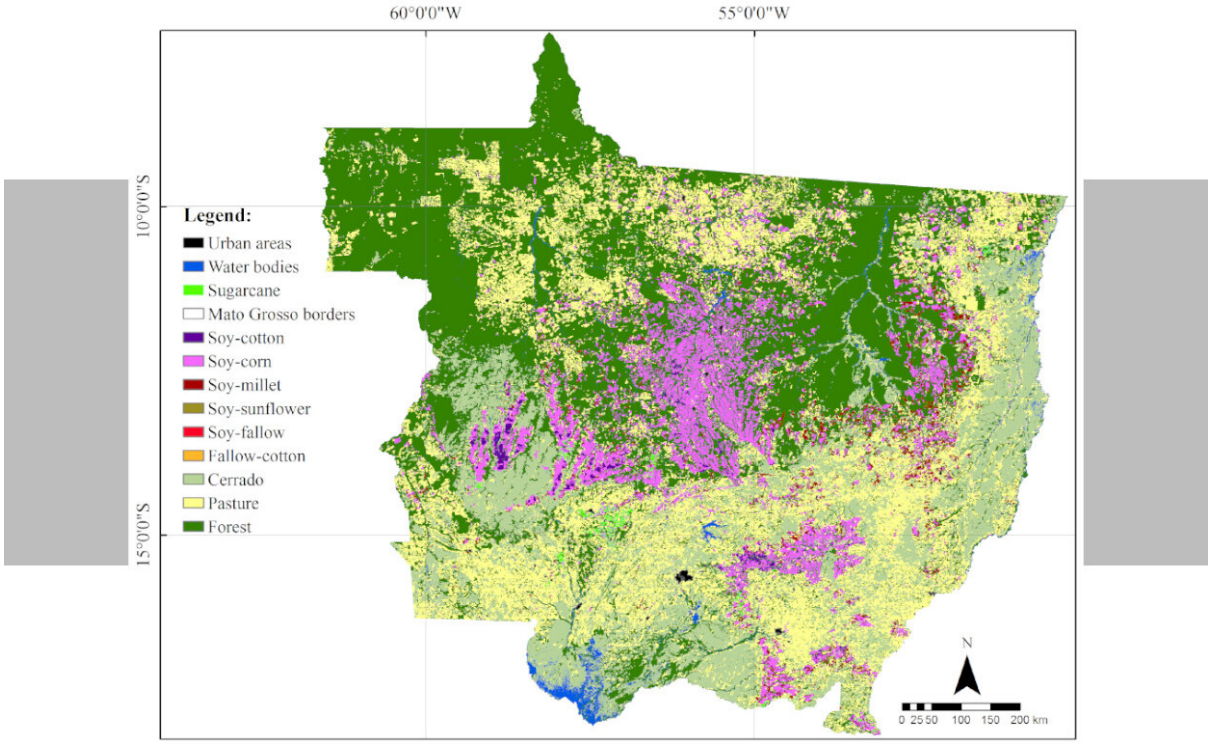
Researchers develop technology for agricultural mapping

The tool is based on data cubes and image analysis by geo-objects

06.03.2025 | 07:17 (UTC -3)

Cultivar Magazine, based on information from Luciana Constantino



A new geospatial intelligence methodology was developed by researchers at São

Paulo State University (Unesp) in Tupã to improve land use mapping and territorial planning. The tool, based on the combination of data cubes and image analysis by geo-objects, allowed for the precise identification of native vegetation, agricultural areas and double crops in the state of Mato Grosso.

The technology combines the data cube architecture, disseminated by the Brazil Data Cube project of the National Institute for Space Research (INPE), with the Geobia (Geographic Object-Based Image Analysis) approach.

The method was applied to time series of images from NASA's Modis sensor, enabling the identification of vegetation and crops such as soybeans and corn

throughout a harvest. The study indicated that the model achieved 95% accuracy in mapping, outperforming traditional approaches based on the analysis of isolated pixels.

Geobia groups similar pixels into geo-objects and analyzes their characteristics, such as shape and texture, improving landscape interpretation.

Data cubes store information in time and space dimensions, facilitating the monitoring of land cover evolution.

The methodology reduces classification errors in transition areas, where different land uses meet.

According to Michel Eustáquio Dantas Chaves, professor at the Faculty of

Science and Engineering at Unesp and corresponding author of the scientific article, the method can be applied to images from other satellites, such as Landsat and Sentinel, expanding its applicability for mapping and environmental monitoring.

Practical application

Mato Grosso was chosen as the study area because it is the largest grain producer in Brazil, accounting for 31,4% of national production. The territory of Mato Grosso is also home to parts of the Amazon, the Cerrado and the Pantanal, making it a strategic region for studies on land use and environmental conservation.

The research used data from the 2016/2017 harvest to validate the methodology, classifying planting areas, such as soybean-corn and soybean-cotton, as well as natural vegetation and bodies of water.

The model showed high precision in delimiting forests and agricultural lands, standing out as a useful tool for territorial planning and productivity estimates.

More information can be found at
doi.org/10.3390/agriengineering7010019

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Chevrolet debuts Silverado EV ZR2 at Mint 400

Presentation precedes launch of Silverado EV Trail Boss

05.03.2025 | 15:09 (UTC -3)

Cultivar Magazine, based on information from Sean Szymkowski

Chevrolet has revealed the Silverado EV ZR2 concept, an electric race truck designed for off-road competition. The vehicle will make its debut at the legendary Mint 400 race, competing in the Open Production EV category for the Hall Racing team. Chad Hall, the team’s driver, will drive the model in the race.

According to information from Chevrolet, the EV ZR2 has 98% of GM production components and incorporates "Multimatic Adaptive Spool Valve" technology, ensuring advanced performance for uneven terrain.

The Silverado EV ZR2 features rugged features including a raised suspension with specific off-road tuning, Multimatic shock absorber technology, locking differentials and reinforced underbody protection.

Five months in development, the model features 3-inch BF Goodrich KM37 Mud-Terrain tires and a tri-motor electric propulsion system capable of generating 1.100 horsepower and 11.500 lb-ft of torque.

Chevrolet engineers will track the Silverado EV ZR2’s performance at the Mint 400 to gather data on its capability and endurance. This information will be used to develop future Chevrolet performance vehicles and parts.

The Silverado EV ZR2's introduction comes ahead of the Silverado EV Trail Boss, which is scheduled for summer 2026. It will be the first electric variant of the Silverado lineup to be geared toward off-roading, and will feature upgrades such as a standard lift, 18-inch wheels, 35-inch

all-terrain tires and new driving modes for rugged terrain.

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Heather Remley takes over as CEO of BASF Corporation

Change takes place from April 1st

05.03.2025 | 13:25 (UTC -3)

Cultivar Magazine, based on information from Antje Schabacker

Heather Remley and Christian Aucoin

Heather Remley will assume the roles of President and CEO of BASF Corporation, Florham Park, New Jersey, effective April 1, 2025.

Heather was born in Pennsylvania, USA. She holds a bachelor's degree in mechanical engineering from Lafayette College. She earned a master's degree in business administration from Boston College.

The current CEO of BASF Corporation, Marc Ehrhardt, has decided to leave the company.

Christian Aucoin will succeed Heather Remley. He was born in Baton Rouge, LA, USA. He studied chemical engineering at Louisiana State University. He received his doctorate in chemical engineering from

Columbia University in New York City.

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La Niña weakens and could end in coming months, says WMO

There is a 60% chance that conditions will return to neutrality between March and May

05.03.2025 | 10:46 (UTC -3)

The La Niña weather phenomenon, which emerged in December 2024, is expected to be short-lived. The World Meteorological

Organization (WMO) has reported that there is a 60% chance that the event will dissipate and conditions will return to neutral between March and May 2025.

For the period from April to June, this chance rises to 70%. The possibility of a new El Niño forming during this period is considered negligible.

WMO bases its forecast on measurements from the Global Centres for Seasonal Forecast Production, which point to a return of sea surface temperatures in the equatorial Pacific to average levels.

Despite the trend towards neutrality, experts warn that long-term forecasts are more uncertain at this time of year due to the so-called “boreal spring predictability barrier”.

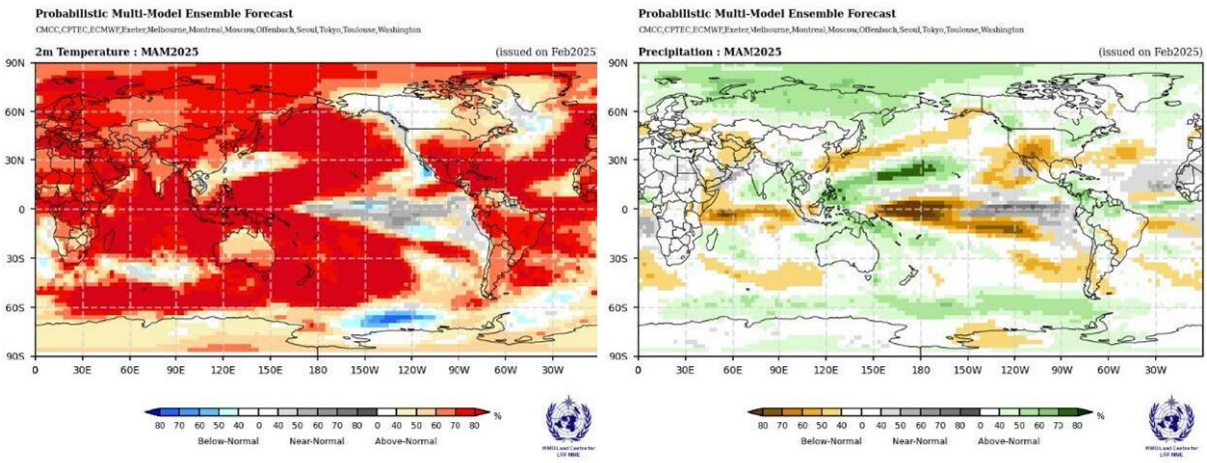
WMO Secretary-General Celeste Saulo highlighted the importance of seasonal forecasts for various sectors. “These forecasts can save millions of dollars in areas such as agriculture, energy and transport. They also help save lives by enabling early action to reduce disaster risks,” she said.

The La Niña phenomenon is characterized by the cooling of waters in the central and eastern Pacific, affecting wind patterns, atmospheric pressure and rainfall in various parts of the world. It usually causes climate impacts opposite to those of El Niño, especially in tropical regions.

Despite the presence of La Niña, January 2025 was the warmest January on record. According to the WMO, this shows that the impact of global warming is overriding

natural climate patterns. To expand its analysis of global climate, the organization also monitors variables such as the North Atlantic Oscillation, the Arctic Oscillation and the Indian Ocean Dipole.

The latest WMO seasonal forecast predicts that sea temperatures are expected to remain above normal in almost all oceans, with the exception of the eastern equatorial Pacific. As a result, above-average temperatures are expected over virtually all land areas of the planet in the coming months.



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Bayer announces 2024 results

The group's net loss reached €2,55 billion

05.03.2025 | 06:42 (UTC -3)

Cultivar Magazine

Bayer announced today that group sales in 2024 reached €46,6 billion, down from €47,6 billion in 2023. The company

expects 2025 to be a pivotal year in its restructuring process.

To boost its results in the coming years, the company has included the profitability of the Crop Science division as one of its strategic priorities, launching a five-year plan to improve earnings and productivity.

According to Bill Anderson, CEO of Bayer, the company has three solid divisions with good long-term prospects. However, he stressed that it will need to face challenges before moving into a phase of sustainable growth.

The profitability plan for the Crop Science division includes measures relating to the product portfolio, research and development, production and commercial functions, aiming for an annual contribution

of more than €1 billion to profits by 2029. The total number of employees in the company fell from 99.723 (2023) to 92.815 (2024), a reduction of 6,9%.

The company also set targets for the division's growth, including additional sales of €3,5 billion driven by innovations by 2029. The EBITDA margin target before special items is projected to reach an average of 20% by the end of the period.

Bayer Group (EUR million)	Q4 2023	**Q4 2024**	Change (%)	FY 2023	**FY 2024**	Change (%)
Sales	11,862	**11,729**	-1.1 +0.1*	47,637	**46,606**	-2.2 +0.7*
EBITDA before special items	3,023	**2,349**	-22.3	11,706	**10,123**	-13.5
EBITDA margin before special items	25.5%	**20.0%**	-	24.6%	**21.7%**	-
EBIT	2,189	**134**	-93.9	612	**-71**	-
Special items	*247*	**-722**	-	*-6,977*	***-5,507***	-
EBIT before special items	1,942	**855**	-56.0	7,589	**5,436**	-28.4
Net income**	1,337	**-335**	-	-2,941	**-2,552**	-
Earnings per share (EUR)**	1.36	**-0.34**	-	-2.99	**-2.60**	-
Core earnings per share (EUR)	1.85	**1.05**	-43.2	6.39	**5.05**	-21.0
Free cash flow**	4,261	**3,312**	-22.3	1,311	**3,107**	+137.0
Number of employees***	99,723	**92,815**	-6.9	99,723	**92,815**	-6.9

2024 Financial Results and Outlook

Group sales in 2024 reached €46,6 billion, down from €47,6 billion in 2023. The group's net loss reached €2,55 billion (in 2023, it was €2,94 billion).

For 2025, Bayer projects sales of between €45 and €47 billion, which represents a range of -3% to +1% on an adjusted basis. Net financial debt is estimated at between €31 and €32 billion at the end of the year.

Crop Science Division Performance

Crop Science sales fell by 4,3% to €22,3 billion (from €23,79 billion in 2023). The

decline was driven by falling prices for crop protection products due to strong competition.

In Latin America, the reduction in corn planted area and the drop in prices negatively affected results. In the United States, there was a slight increase in sales due to the increase in soybean planted area and the greater demand for agricultural pesticides.

Key Data – Crop Science

€ million	Q4 2023	Q4 2024	Change (%)[1] Reported	Change (%)[1] Fx & p adj.	2023	2024	Change (%)[1] Reported	Change (%)[1] Fx & p adj.
Sales	**5,630**	**5,385**	**–4.4**	**–2.3**	**23,270**	**22,259**	**–4.3**	**–2.0**
Change in sales[1]								
Volume	+14.7%	–0.4%			+1.2%	+0.1%		
Price	–8.7%	–1.9%			–4.9%	–2.1%		
Currency	–4.9%	–2.1%			–2.2%	–2.3%		
Portfolio	0.0%	0.0%			–1.6%	0.0%		
Sales by region								
Europe/Middle East/Africa	610	570	–6.6	–11.2	4,668	4,521	–3.1	–0.3
North America	1,946	2,014	+3.5	+1.9	9,135	9,268	+1.5	+1.5
Asia/Pacific	567	650	+14.6	+14.9	2,287	2,219	–3.0	–0.6
Latin America	2,507	2,151	–14.2	–7.1	7,180	6,251	–12.9	–8.1
EBITDA[1]	**1,088**	**788**	**–27.6**		**4,968**	**3,966**	**–20.2**	
Special items[1]	18	(129)			(70)	(359)		
EBITDA before special items[1]	**1,070**	**917**	**–14.3**		**5,038**	**4,325**	**–14.2**	
EBITDA margin before special items[1]	19.0%	17.0%			21.7%	19.4%		
EBIT[1]	**975**	**(170)**	**.**		**(3,486)**	**(2,756)**	**.**	
Special items[1]	579	(409)			(6,034)	(4,416)		
EBIT before special items[1]	**396**	**239**	**–39.6**		**2,548**	**1,660**	**–34.9**	
Net cash provided by operating activities	**3,535**	**3,651**	**+3.3**		**1,850**	**3,197**	**+72.8**	
Cash flow-relevant capital expenditures	468	402	–14.1		1,268	1,162	–8.4	
Research and development expenses[2]	247	717	+190.3		1,896	2,611	+37.7	

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] After special items and depreciation/amortization/impairments

Sales by Strategic Business Entity

€ million	Q4 2023	Q4 2024	Change (%)[1] Reported	Change (%)[1] Fx & p adj.	2023	2024	Change (%)[1] Reported	Change (%)[1] Fx & p adj.
Crop Science	**5,630**	**5,385**	**–4.4**	**–2.3**	**23,270**	**22,259**	**–4.3**	**–2.0**
Corn Seed & Traits	1,522	1,454	–4.5	–2.6	6,857	6,559	–4.3	–2.5
Herbicides	1,388	1,314	–5.3	–7.7	5,926	5,468	–7.7	–6.8
of which glyphosate-based products[2]	784	615	–21.6	–19.2	2,862	2,647	–7.5	–5.7
Fungicides	880	786	–10.7	–6.4	3,444	3,157	–8.3	–4.6
Soybean Seed & Traits	836	767	–8.3	–0.4	2,571	2,475	–3.7	+1.4
Insecticides	416	431	+3.6	+7.9	1,596	1,640	+2.8	+6.5
Cotton Seed	131	159	+21.4	+27.0	575	585	+1.7	+3.0
Vegetable Seeds	203	213	+4.9	+5.2	735	772	+5.0	+6.8
Other	254	261	+2.8	+0.5	1,566	1,603	+2.4	+3.3

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] As of 2024, our business with glyphosate-based products is for the first time being reported separately within the Herbicides strategic business entity; the prior-year figures are likewise shown separately.

Expectation of recovery

Bayer said it believes its Crop Science division is well positioned to grow above the market in the coming years. The company plans to strengthen its profitability through investments in innovation and operational efficiency. With the implementation of the Five Year Framework, the company expects to resume its growth trajectory from 2026 onwards, laying a more solid foundation for the future of the global agricultural sector.

The three-phase plan will strengthen Bayer's position in the sector, explains Rodrigo Santos, head of the division. The initiative aims to generate more than €1 billion in margin improvement, €1,5 billion in additional cash by 2029 and €3,5 billion in new revenues through innovation. The strategy includes optimizing working

capital, improving the production chain and focusing on high value-added products.

Rodrigo Santos

In the seed segment, Santos adds, Bayer intends to consolidate its leadership in corn, expanding Preceon Smart Corn and introducing new biotechnologies in Europe and Sub-Saharan Africa.

For soybeans, the company expects to regain market share in the United States with the launch of the HT4 Vyconic in 2027

(read in "Bayer launches Vyconic soybean with five herbicide tolerances") and strengthen insect control in Latin America.

In crop protection, the company is betting on the launches of the fungicide Iblon, the insecticide Plenexos and the herbicide Icafolin.

Product Innovation Pipeline[1]

Crop/digital application	First launch	Product group	Indication	Product/trait/number of hybrids or varieties
Corn	Annual	Breeding/native trait	Crop efficiency	> 290 new corn seed hybrids in 2024
	2027	Biotechnology trait	Crop efficiency	Preceon™/short-stature corn
Soybeans	Annual	Breeding/native trait	Crop efficiency	~ 90 new soybean seed varieties in 2024
	2027	Biotechnology trait	Weed management	HT4
Cotton	Annual	Breeding/native trait	Crop efficiency	> 15 new cotton seed varieties in 2024
Crop Protection	Annual	Biological/small molecule LCM[2]	Crop efficiency, disease, pest and weed management	> 230 new crop protection registration approvals in 2024
	2025	Crop protection	Pest management	Plenexos™ (spidoxamat)
Vegetables	Annual	Breeding/native trait	Crop efficiency, disease management	> 90 new seed varieties in 2024
Digital applications	2025	Digital platforms	Platform	Microsoft partnership, providing B2B agricultural technology services
	2024	Value chain solutions	Carbon markets	Enable offset and inset approaches for carbon markets in North America, while advancing our pilot projects in other regions
	2024/2025	Tailored solutions	Crop efficiency	Corn seed hybrid selection and planting density recommendations for North America, Latin America and Europe Oilseed rape pest management in Europe/Middle East/Africa

As of December 2024

[1] Planned market launch of selected new products, subject to regulatory approval

[2] Life-cycle management

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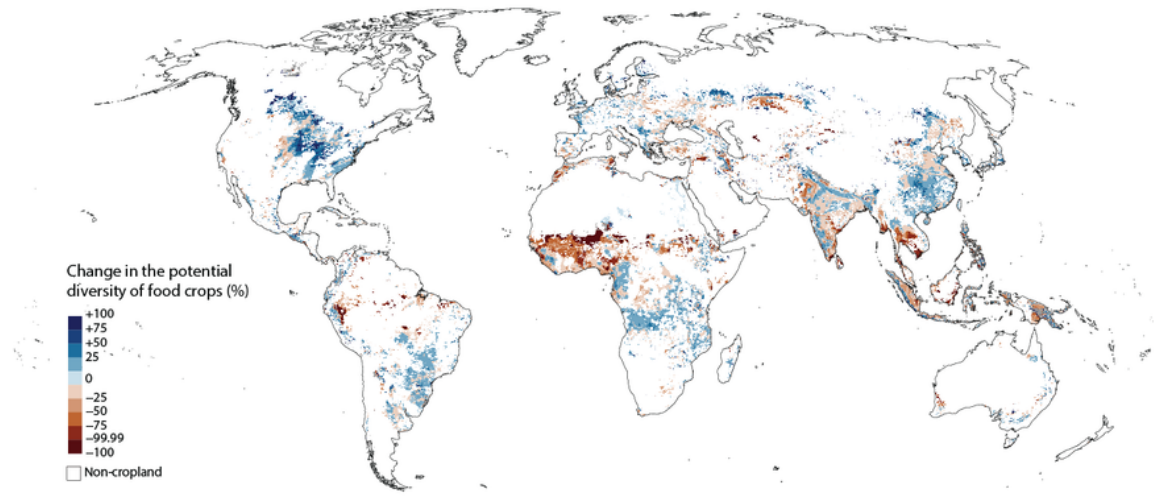
Global warming puts a third of global food production at risk

The impacts will be most severe in tropical regions, where up to half of production could become unviable

04.03.2025 | 16:52 (UTC -3)

Cultivar Magazine



Change in potential food crop diversity under a global warming scenario of +2 °C compared to the current situation (%) - Heikonen et.al 2025

A third of global food production could be compromised by climate change, according to research from Aalto

University. The study analyzed how changes in temperature, precipitation and aridity affect 30 food crops in different regions.

The impacts will be most severe in tropical regions, where up to half of production could become unviable if global warming exceeds 3°C.

Loss of diversity

The research suggests that crop diversity will also be affected, reducing food security. In low-latitude areas, the decline in crop variety could compromise the supply of essential calories and proteins. On the other hand, mid- and high-latitude regions could gain new crop options, such as temperate fruits.

“Loss of diversity makes food systems more vulnerable to climate shocks and reduces their ability to adapt,” said Sara Heikonen, a PhD student and lead author of the study.

Most threatened crops

The main foods at risk include rice, corn, wheat, potatoes and soybeans, which account for more than two-thirds of global energy intake. Crops essential for low-income regions, such as yams and pulses, will also be heavily impacted.

In sub-Saharan Africa, up to 75% of current production could be rendered unviable by a temperature increase of more than 3°C.

In contrast, at higher latitudes, global warming could expand cropland. However, these benefits could be limited by other factors, such as new pests and extreme weather events.

Global impact

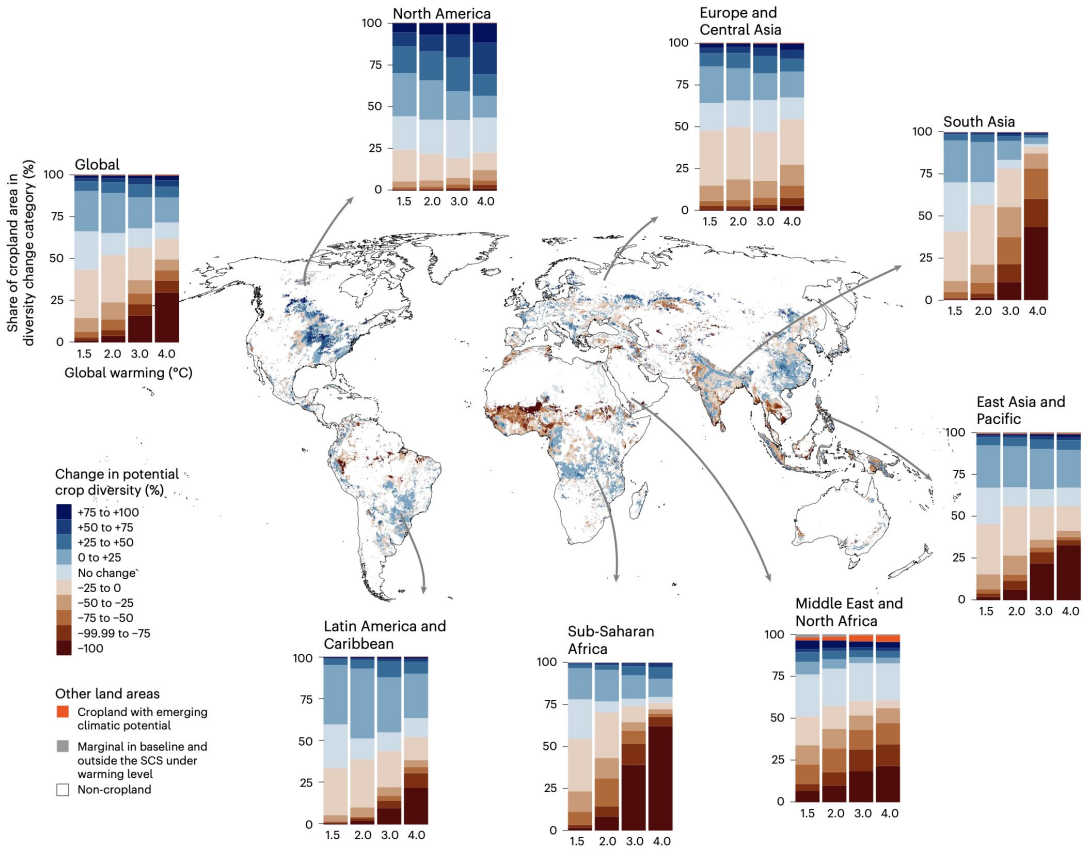
Even if the most severe effects occur in tropical regions, the impact on the global food system will be significant. The study warns that food security depends on a coordinated response, involving both emissions mitigation and agricultural adaptation.

“It’s not just a question of the affected regions. The global food system is interconnected, and everyone will feel the impacts,” concludes Heikonen.

The research reinforces the need for urgent action to ensure food production and distribution in the future.

More information can be found at

doi.org/10.1038/s43016-025-01135-w



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New Skymaps software promises to reduce farming costs

Drone cameras capture details that satellites can't always see

04.03.2025 | 15:51 (UTC -3)

Cultivar Magazine, based on information from Martin Kapso

Czech startup Skymaps has launched CultiWise, an advanced software that generates high-precision prescription maps in just a few hours using a compact drone.

The new technology promises savings and increased productivity, with gains of up to 20% and the possibility of a return on investment in the first harvest.

The feature is available to subscribers of CultiWise, which operates in the cloud and starts at €5 per hectare. The optional drone starts at €4,2.

Faster decisions

Variable rate application of inputs relies on satellite imagery to identify areas that

require different amounts of fertilizers and pesticides. However, weather conditions can delay this analysis.

CultiWise’s new feature allows producers to capture crop images on the same day and begin application immediately.

“With this new functionality and the compact drone, farmers can capture data instantly and start spraying the same day,” says Kornel Cziria, CTO of Skymaps.

High precision mapping

The software allows the upload of images captured by the drone, generating prescription maps in minutes or hours. These maps identify the areas of the crop that require different amounts of inputs and

inform the producer about the expected savings.

Skymaps estimates that the technology can reduce input costs by up to 20% and increase productivity by 10%. The CultiWise drone, which covers 200 hectares per hour, offers centimeter-level accuracy and can operate with multispectral or RGB cameras.

Wide applicability in agriculture

The system can be used on a variety of crops, including corn, winter wheat, soybeans, sugar beet, sunflower, rapeseed, potatoes and onions.

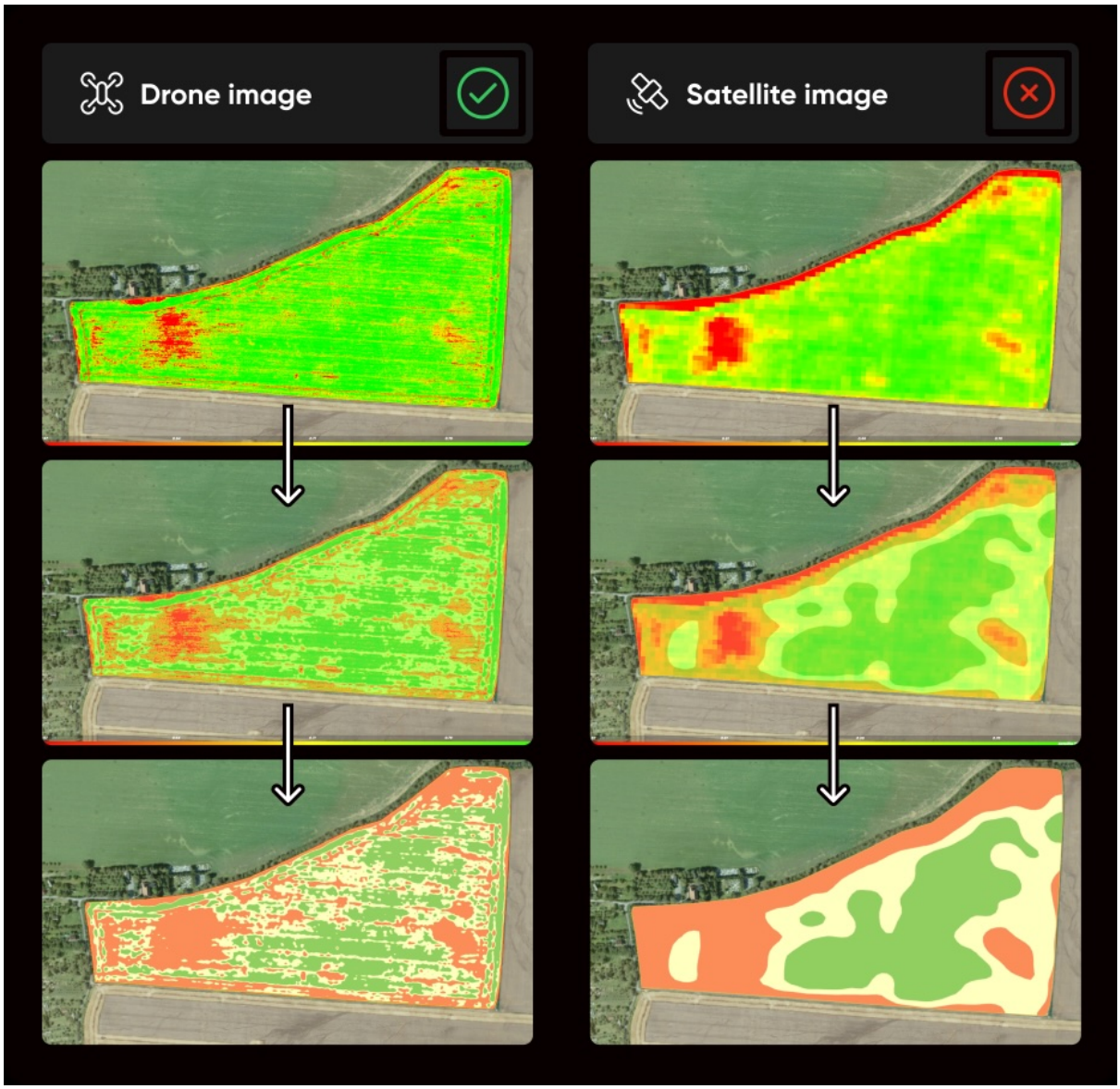
The precision of the mapping allows for localized and variable rate application, with equipment from companies such as Amazone, Agrifac and John Deere.

Superior accuracy to satellites

Drone cameras capture details that satellites can’t always capture, eliminating ground-based interference and allowing for a clearer assessment of plant health. This is especially useful in early growth stages and in wide-row crops.

CultiWise currently has over 1.000 subscribers in 15 countries, including Argentina and the United States. The solution aims to make precision agriculture

more accessible, helping farmers reduce costs and comply with environmental regulations on the use of pesticides and fertilizers.



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Agrilevante 2025 highlights agricultural mechanization in the Mediterranean

The fair is aimed at farmers, technicians and operators in the agricultural sector

04.03.2025 | 15:38 (UTC -3)

Cultivar Magazine

Simona Rapastella, CEO of FederUnacoma, during an interview

Agrilevante 2025 will be held in Bari, Italy, from October 9 to 12. Organized by the Italian Federation of Agricultural Machinery Manufacturers (FederUnacoma), the event is already 75% full, with an expected attendance of 350 exhibitors from 20 countries. The previous edition received 95 visitors, including 4 foreigners from 60 countries, and the number is expected to be surpassed in 2025.

The fair is aimed at farmers, technicians and operators in the agricultural sector from the Mediterranean, the Balkans, the Middle East, North Africa and Sub-Saharan Africa.

The technologies presented cover tractors, operational machines, equipment and

components, with a focus on solutions for arable crops, vineyards, orchards, horticulture and livestock.

The aim is to boost productivity, preserve biodiversity and tackle challenges such as water scarcity and the complex structure of the region's soils.

Among the new features are the Levante Green area, dedicated to gardening equipment and green area care, and the Extend area, which will house institutional bodies. Another attraction will be the REAL area, focused on agricultural robotics, with exhibitions and demonstrations of automated systems.

The program will include conferences on technical topics, such as olive growing and digital applications, and political and

economic issues, such as trade prospects in the Mediterranean and the Mattei Plan for Africa. Also noteworthy is the Agrilevante Machinery Competition, which will award innovations in agricultural mechanization and environmental care.

The agricultural machinery market in the region continues to grow. In North Africa, demand increased by 22,2% between 2022 and 2024, rising from €611 million to €747 million. In the Balkans, demand increased by 8% between 2022 and 2023, followed by a 6% decline in 2024, due to contractions in Croatia (-8%) and Serbia (-23%).

Turkey recorded growth between 2022 and 2023, but slowed down in 2024. In Israel, imports fell by 22,4% in 2023 and a further 14% in 2024, impacted by the conflict in

the region.

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Bayer confirms Vyconic in Brazil in 2028

Technology will be offered together with greater resistance to caterpillars

04.03.2025 | 10:23 (UTC -3)

Cultivar Magazine

Bayer has announced that the fourth generation of herbicide resistance

technology is expected to hit the Brazilian market in 2028. And it will be accompanied by greater resistance to caterpillars.

Known as HT4, to be marketed in the United States under the brand name Vyconic, the set of herbicide resistances includes the products 2,4-D, dicamba, glyphosate, glufosinate ammonium and mesotrione. (Read more at "Bayer launches Vyconic soybean with five herbicide tolerances")

This technology should be offered in conjunction with the new generation of Intacta (SIP3), which will have more proteins to control a broader spectrum of caterpillars. Although the company has not confirmed this, sources suggest that its composition will include: Bt Cry1Ac;

Cry1a.105 and Cry2AB2; and Cry1A.2 and Cry1B.2.

The company refers to the technology suite as SIP3HT4.

* * *

Update: Bayer reports that despite the application for registration of the Vyconic brand, the commercial name to be used in Brazil has not yet been defined. It will probably be another one because the varieties have more technology in addition to resistance to herbicides.

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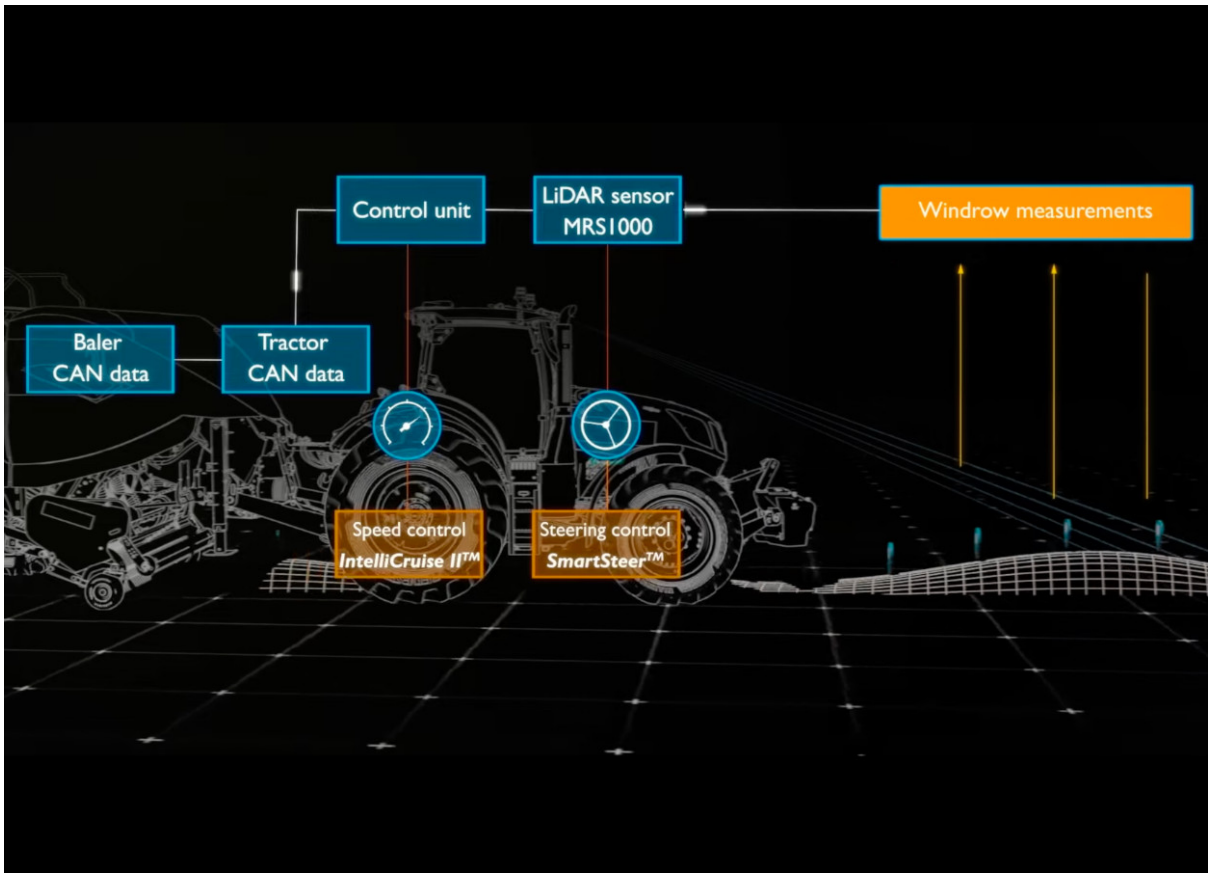
New Holland’s IntelliSense wins Davidson Innovation Award

The system reduces the need for manual adjustments during the baling operation.

03.03.2025 | 14:17 (UTC -3)

Cultivar Magazine



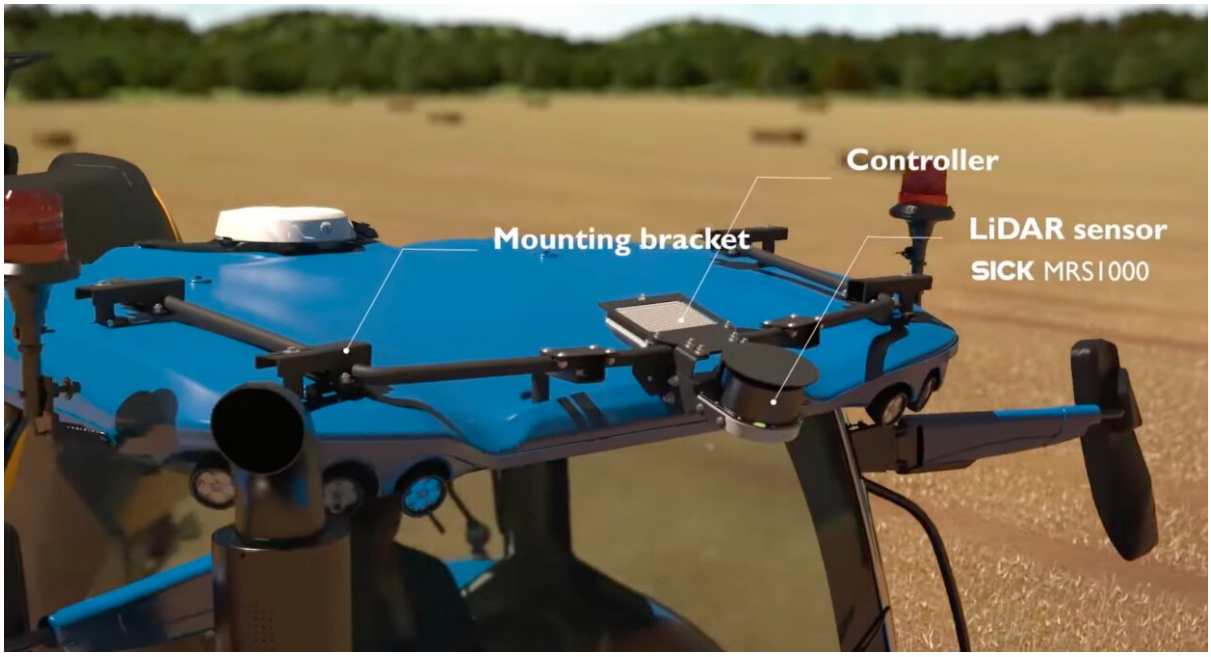
The IntelliSense system, developed by New Holland for high-density bales, was one of three winners of the Davidson Prize, one of the most prestigious awards in agricultural engineering in the United States. The technology automates essential functions of the baler and tractor.

IntelliSense reduces the need for manual adjustments during baling operations.

The system automatically adjusts the tractor's steering according to the position of the swath of plant material and adapts the speed according to the density of the material. This prevents overloading and clogging, reduces fuel consumption and improves bale uniformity.

The technology uses a LiDAR sensor installed on the tractor roof, which emits

laser pulses to measure the position and shape of the windrow from a distance of 6 to 8 meters. This information is used to control the tractor’s steering via ISOBUS and adjust the baler’s feed.



The system can also operate in IntelliCruise II mode, which regulates tractor speed to maintain a target number of layers per bale, or Swath Guidance mode, which uses SmartSteer technology to automatically align the crop at the baler

inlet.

IntelliSense is compatible with New Holland T7 Long Wheelbase, T7 HD and T8 AutoCommand tractors that have unlocked ISOBUS Class 3 for steering and speed control.

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Temperature influences the effectiveness of the parasitoid "Binodoxys communis"

Results indicated that 25°C is the ideal condition

03.03.2025 | 10:13 (UTC -3)

Cultivar Magazine

Binodoxys communis - Photo: Roy Scott

Study revealed that temperature is a determining factor for the success of the parasitoid *Binodoxys communis* in the biological control of cotton aphids (*Aphis gossypii*).

Researchers evaluated the impact of different temperatures and humidity levels on longevity, parasitism rate and parasitoid development.

The results indicated that 25°C is the ideal condition for the efficiency of this biological agent.

temperature and humidity

Binodoxys communis is a parasitoid that controls the population of *Aphis gossypii*

by laying its eggs inside the host, leading to the death of the aphid. The research revealed that moderate temperatures, between 20°C and 25°C, favor the longevity of the parasitoid, its parasitism rate and the survival of the offspring.

In contrast, high temperatures, especially above 30°C, significantly reduced the effectiveness of biological control, shortening the adult life of parasitoids and decreasing their ability to attack aphids.

Relative air humidity also had an influence on the survival of parasitoids. The study showed that humidity of 60% to 80% is more favorable than drier environments, increasing the longevity of adults.

However, humidity alone did not significantly affect the parasitism rate,

reinforcing the importance of temperature as a critical factor.

Implications for biological management

The study findings provide information for improving release strategies. *B. communis* in the biological control of *A. gossypii*.

Producers using this method should consider local climatic conditions before scheduling parasitoid release.

Regions with temperatures above 30°C may require adjustments to the strategy, such as releasing crops during times of milder temperatures or adopting techniques to moderate the temperature in the cultivation environment.

More information can be found at

doi.org/10.3390/insects16030264

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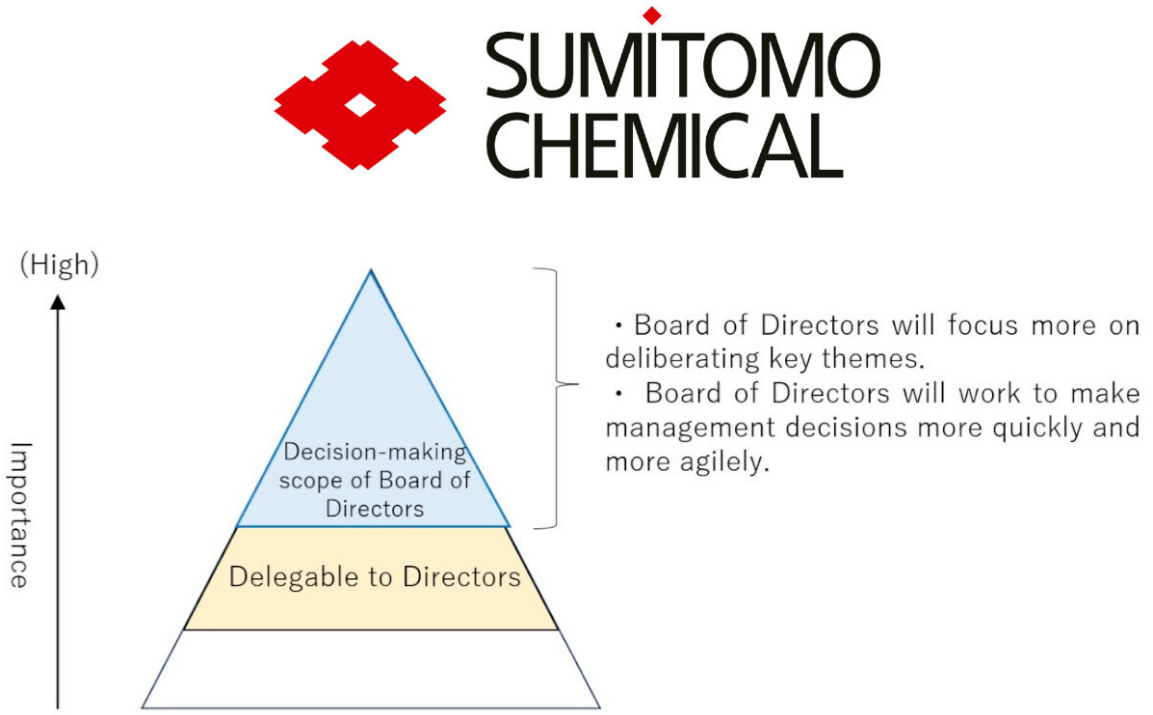
Sumitomo Chemical implements changes in corporate governance

The change will allow greater delegation of executive decisions to directors

03.03.2025 | 07:50 (UTC -3)

Cultivar Magazine



Sumitomo Chemical announced the transition to a governance model with an

audit and supervision committee. The decision was made by the board of directors on March 3, 2025 and will be submitted for shareholder approval at the Annual General Meeting in June. The change aims to strengthen management oversight and accelerate strategic decision-making.

The company is seeking to improve its corporate governance as part of a structural transformation plan. In recent years, the company has reviewed its management practices to increase the effectiveness of the board of directors.

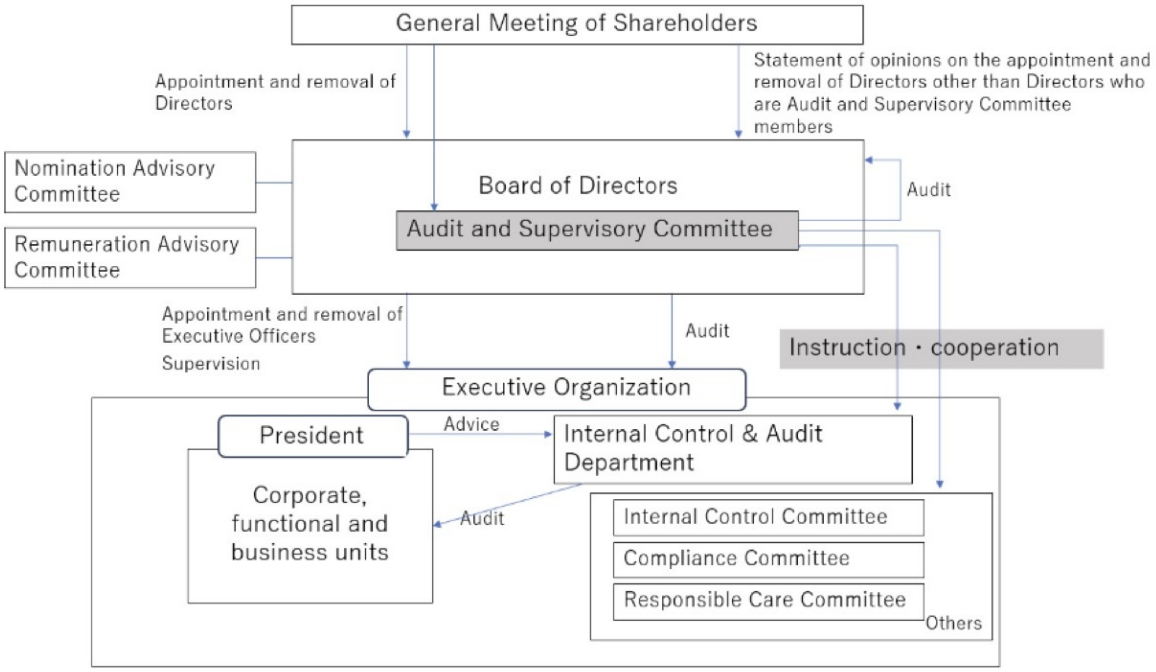
With the new model, members of the audit and oversight committee will join the board, expanding its monitoring capacity. The company will also strengthen cooperation between this committee and

the internal audit department.

The change will allow greater delegation of executive decisions to directors. This will allow the board to focus on formulating medium- and long-term strategies. Sumitomo Chemical emphasizes that this structure will ensure greater agility in decision-making without compromising supervision.

The transition is subject to approval of the company's bylaws at the general meeting in June. The company said it will release details of the bylaw changes and executive appointments as soon as they are defined.

■New Structure: Company with an Audit and Supervisory Committee



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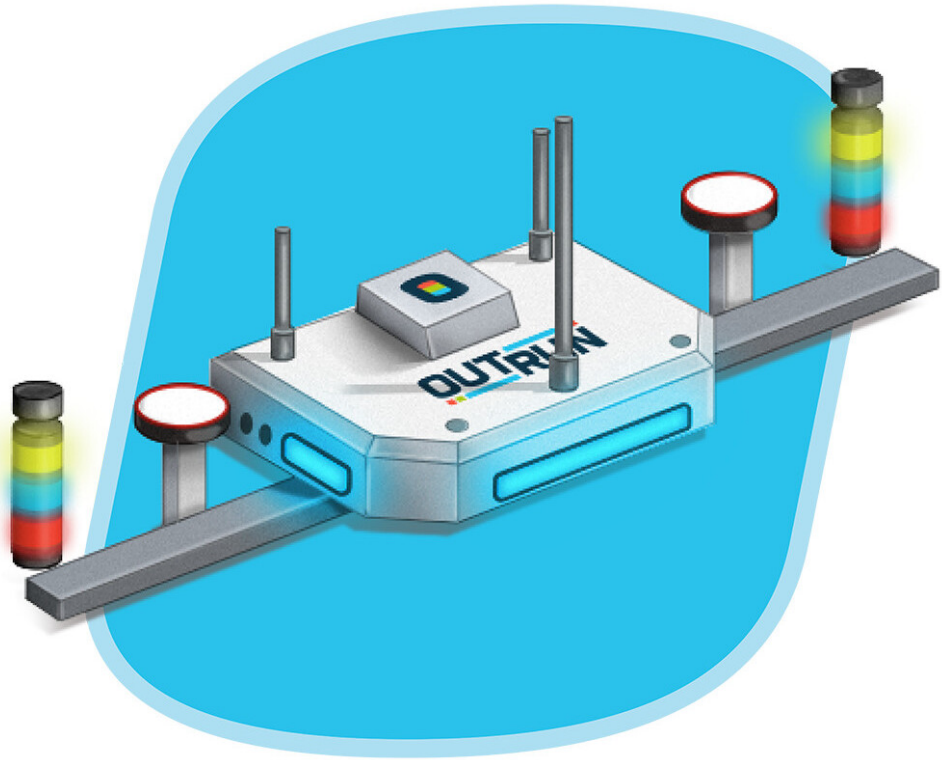
PTx Trimble wins Davidson Award for autonomous harvesting solution

System allows harvester to be driven and grain to be transshipped simultaneously

02.03.2025 | 16:31 (UTC -3)

Cultivar Magazine, based on information from Aryn Drawdy



PTx Trimble has received the Davidson Award at the 2025 Commodity Classic in Denver, Colorado. The recognition was given to OutRun, a commercial grain transshipment automation solution. The award is sponsored by the American Society of Agricultural and Biological Engineers (ASABE) and the Association of Equipment Manufacturers (AEM).

OutRun was recognized for its ability to help growers maximize productivity and address harvest labor shortages.

The system allows operators to simultaneously drive the harvester and transfer grains, reducing the need for experienced drivers for this function.

Andrew Sunderman, vice president of product and customer experience at PTx

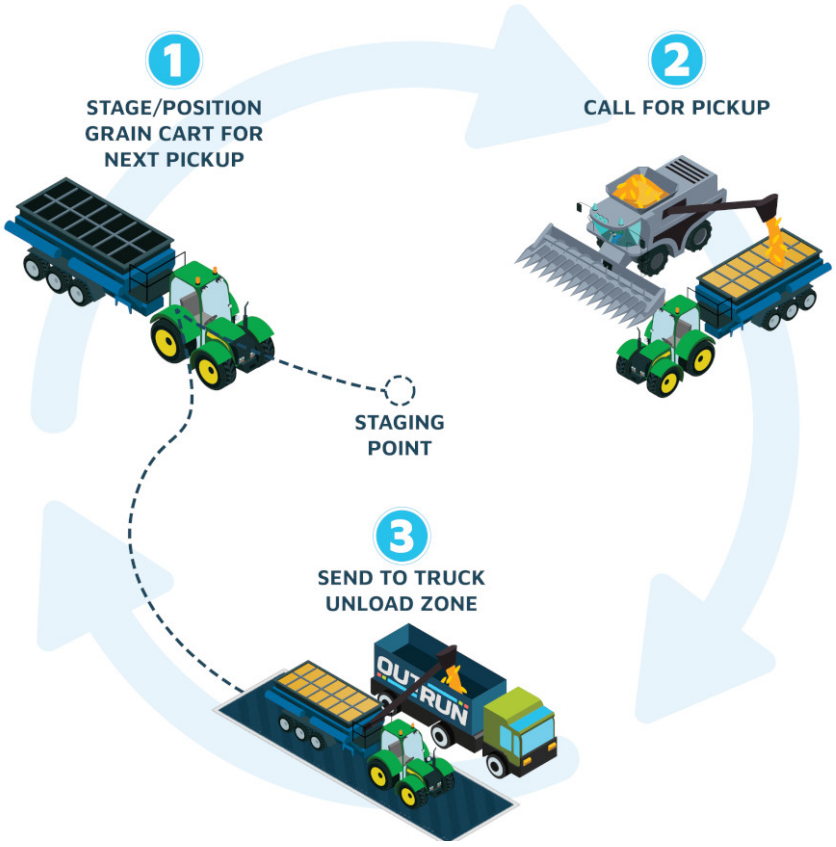
Trimble, said the solution is an important step in the company’s strategy of prioritizing retrofit technologies for automation.

The OutRun standalone kit can be installed on John Deere 8R or 8000R tractors with IVT transmission and will be available for Fendt models from 2026.

The system allows the grain overflow to be positioned or called for unloading without the need for an additional operator. Once fully loaded, the combine operator can send the overflow to a pre-defined manual unloading area.

Created in honor of JB Davidson, considered the father of modern agricultural engineering, the Davidson Award celebrates innovative products that

have a significant impact on agricultural production. Each year, up to three winners are chosen from the top ten of the AE50, an award that recognizes the industry's top technological innovations.



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