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# Cultivar<sup>®</sup> *Semanal*

**Research  
reveals the  
best in control**

# Table of Contents

Effectiveness of fungicides against Asian rust in soybeans revealed	06
Agricultural Market - 25.Jul.2025	13
Bayer launches technologies at the 2025 Brazilian Soybean Congress	20
Biological control requires synchronization between natural enemies	26
Protein interactions improve fungal symbiosis in tomato plants	30
Brazil-China soybean relations require strategic vision	36
Soybean Congress attracts 2 participants in Campinas	44
Blueberry production gains ground in reforested area of Santa Catarina	53

# Table of Contents

FS invests R\$2 billion in new ethanol plant in Mato Grosso	59
IAC program increases soil fertility in São Paulo	63
Mato Grosso revokes irrigation tax following demand from producers	69
Coopavel will have the largest corn reception in history	74
Bayer to debut Plenexos Care insecticide in 2026	79
Information is key for agriculture to face criticism	83
Ricardo Hendges takes over as marketing director at Biotrop	89
Second corn harvest boosts the logistics sector	93

# Table of Contents

FMC has a new Market Access Manager in Brazil	100
Syngenta Announces New Global Data and IT Leader	103
Argentina reopens registration of grain exporters to China	106
Carbon intensity defines the use of inputs in biofuels	110
PHC brings peptide innovation to CBSoja 2025	117
Santa Clara Group announces R\$114 million investment from BNDES	126
Soybean Zarc will include soil management in risk assessment	132
Orbia expands commercial strategy with new director	143

# Table of Contents

Valtra brings technologies to Coopercitrus Expo 2025	146
--	-----

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Bedbugs choose green and pink fruits to attack	151
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Immune response prevents grafting between tomato and pepper	158
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# Effectiveness of fungicides against Asian rust in soybeans revealed

Cooperative trials in the 2024/2025 harvest were presented during the Brazilian Soybean Congress

25.07.2025 | 16:08 (UTC -3)

Cultivar Magazine



Claudia Godoy

The efficacy results of fungicides against Asian rust from the last harvest were released during the Brazilian Soybean Congress. The studies are conducted by a network of 23 research institutions in several Brazilian states.

The disease, caused by *Phakopsora pachyrhizi*, compromised up to 63% of the leaf area in untreated areas.

The best result was from pesticides, with a 75% reduction in severity and a productivity of 4.028 kg/ha. This result is an average of the results found in 11 states.

TRATAMENTOS	DOSES		SEV (%)	C (%)	FITO (%)	PROD (kg/ha)	RP (%)		
	L - kg p.c./ha	g i.a./ha							
1. Testemunha	-	-	63,0	A	-	22,9	3.003	G	25,4
2. Fezan Gold <sup>1</sup> (clorotalonil + tebuconazol)	2,5	1.125 + 125	21,3	CD	66	4,2	3.828	BCDEF	5,0
3. Proteus (clorotalonil + tebuconazol)	2	1500 + 120	19,7	DEF	69	3,2	3.904	AB	3,1
4. Cortina Gold (clorotalonil + prothioconazol)	1,75	1.172,50 + 82,25	20,2	DEF	68	4,7	3.855	ABCDE	4,3
5. Sugoy <sup>2</sup> (clorotalonil + impirfluxam + metominostrobrina)	2	1.142,8 + 34,2 + 68,6	20,9	DE	67	8,0	3.693	EF	8,3
6. Approach Premium <sup>3</sup> (picoxistrobrina + ciproconazol + oxicloreto de cobre)	1	60 + 40 + 420	21,1	CD	66	7,0	3.704	DEF	8,0
7. Fox Ultra <sup>4</sup> (impirfluxam + prothioconazol + trifloxistrobrina)	0,5	45 + 87,5 + 77,5	23,4	B	63	7,5	3.677	F	8,7
8. Fox Ultra e Milcozeb <sup>4</sup> (impirfluxam + prothioconazol + trifloxistrobrina e mancozebe)	0,5 e 1,5	45 + 87,5 + 77,5 e 1.200	16,0	I	75	-	4.028	A	-
9. Fox Supra e Milcozeb <sup>4</sup> (impirfluxam + prothioconazol e mancozebe)	0,35 e 1,5	42 + 84 e 1.200	16,6	HI	74	1,2	3.957	AB	1,8
10. Excalia Max e Tróia <sup>5</sup> (impirfluxam + tebuconazol e mancozebe)	0,7 e 1,5	42 + 140 e 1.200	17,1	GHI	73	2,7	3.926	AB	2,5
11. Blindado TOV <sup>6</sup> (picoxistrobrina + tebuconazol + mancozebe)	2,2	58,652 + 73,326 + 880	15,2	I	76	5,5	3.808	BCDEF	5,5
12. Tridium <sup>7</sup> (azoxistrobrina + tebuconazol + mancozebe)	2	94 + 112 + 1.194	18,3	FGH	71	4,2	3.875	ABCD	3,8
13. Almada <sup>8</sup> (fluxapiróxade + prothioconazol + mancozebe)	2	45 + 63 + 880	17,0	GHI	73	1,6	3.949	AB	2,0
14. Evolution <sup>7</sup> (azoxistrobrina + prothioconazol + mancozebe)	2	75 + 75 + 1.050	23,2	BC	63	6,6	3.721	CDEF	7,6
15. Curatis <sup>4</sup> (picoxistrobrina + prothioconazol + mancozebe)	2,5	82,5 + 72,5 + 1.032,5	16,8	GHI	73	3,2	3.857	ABCDE	4,2
16. Programa Frac <sup>8</sup>			18,9	EFG	70	2,6	3.884	ABC	3,6

Asian rust severity (SEV), percentage of control (C) compared to the control without fungicide, average plant phytotoxicity caused by fungicide applications (FITO), yield (PROD), and percentage of yield reduction (RP) compared to the treatment with the highest yield, in the protocol with registered fungicides. Average of 15 experiments for severity, 11 for yield, and 10 for phytotoxicity, 2024/25 harvest - Technical Circular 219

The V130A mutation, associated with reduced efficacy of prothioconazole and tebuconazole, was detected in several regions. Despite this, fungicides containing these ingredients still performed satisfactorily when used in multi-site mixtures. The addition of these products, such as mancozeb or chlorothalonil,

showed a significant increase in efficacy and reduced plant damage.

The higher productivity observed in the treatments surpassed that of crops without chemical control by up to 25%. The isolated use of active ingredients, on the other hand, was less effective.

Cyproconazole, for example, achieved only 18% control.

The study reinforces the importance of rotating active ingredients and using mixtures with multi-site fungicides to preserve product efficacy and delay pathogen resistance. Sequential applications and repeated use of similar molecules are not recommended.

The study used a standardized protocol, with four applications beginning

approximately 46 days after plant emergence. Evaluations were made between the R5 and R6 stages of the crop, a critical phase for determining yield.

The results were published in Embrapa's Technical Circular 219.

## **control alternatives**

The late presence of the disease in several regions, favored by the sanitary vacuum and early sowing, demonstrated the effectiveness of integrated management strategies.

During the presentation of the figures, researcher Cláudia Godoy, from Embrapa Soja, said that there is a joke that the best strategy against Asian rust is "escape".

"'Escape' is a triple mix of three active ingredients: early crop, early cultivar, and early sowing. This is an old recommendation, but it's being used more frequently due to the growth of second-crop corn. The vast majority of areas are experiencing 'escape' from rust, the best control available," explained Cláudia.

Instituição	Município, estado	Semeadura
1. Fundação MT	Primavera do Leste, MT	29/11/2024
2. Coamo	Campo Mourão, PR	05/11/2024
3. Agro Carregal Pesquisa e Proteção de Plantas Eireli	Rio Verde, GO	11/12/2024
4. Embrapa Soja	Londrina, PR	28/11/2024
5. 3M Experimentação Agrícola	Ponta Grossa, PR	05/12/2024
6. Algaagro Soluções Agrícolas LTDA (Seminare Agro)	Silveira Martins, RS	04/12/2024
7. Desafios Agro	Chapadão do Sul, MS	29/11/2024
8. Fundação MS	Maracaju, MS	11/12/2024
9. UniRV / Campos Pesquisa Agrícola	Rio Verde, GO	11/12/2024
10. Proteplan Pesquisa e Assessoria Agrícola	Campo Verde, MT	03/12/2024
11. AgroTecnico Research	Passo Fundo, RS	25/11/2024
12. Ceres Consultoria Agrônômica	Primavera do Leste, MT	05/12/2024
13. Assist Consultoria e Experimentação Agrônômica	Campo Verde, MT	22/11/2024
14. Agrodinâmica	Campo Novo do Parecis, MT	03/12/2024
15. Staphyt, GO	Formosa, GO	18/12/2024
16. Staphyt, RS	Itaara, RS	23/12/2024
17. Agro Profusão / Fomarolli Ciência Agrícola	Faxinal, PR	13/11/2024
18. Centro de Pesquisa Copacol	Cafelândia, PR	31/10/2024
19. Rehagro	Ijaci, MG	29/11/2024
20. Estação Experimental MultCrop	Barreiras, BA	13/12/2024
21. G12 Agro Pesquisa e Consultoria Agrônômica	Guarapuava, PR	30/11/2024
22. Alx Farias Agro	Porto Nacional, TO	18/11/2024
23. Fundação Rio Verde	Lucas do Rio Verde, MT	09/12/2024

Institutions participating in the research, locations and soybean sowing dates

[RETURN TO INDEX](#)

# Agricultural Market - 25.Jul.2025

US harvests support soybean and corn prices;  
rice and beans begin to recover in Brazil

25.07.2025 | 16:00 (UTC -3)

Vlamir Brandalitze - @brandalitzeconsulting



Soybean prices remain stable in the  
international market. The US harvest is

progressing, with 68% of crops in good or excellent condition. Production is expected to reach 117,5 million tons, slightly below the official estimate. In Chicago, short contracts are holding at US\$10 per bushel. Positions for July 2026 are trading between US\$10,70 and US\$10,80. Uncertainty over Chinese purchases is hindering further progress.

In Brazil, producers are finalizing their input purchases. Sales of the 2025 harvest reached 67,7%, below the average and the previous year's percentage. Even so, sales volume is a record: 115 million tons, with 55 million tons remaining. Exports have already surpassed 74 million tons this year. Soybeans lead the export agenda, with revenues approaching US\$5,5 billion in July.

Planted area is expected to exceed 50 million hectares in the new harvest. Soybeans are expected to occupy land previously used for summer corn, rice, beans, and degraded pastures, with a production potential of up to 180 million tons.

## **Corn situation**

Corn is also showing a promising harvest in the US. More than 60% of crops are flowering, with 74% in good condition. Yields could exceed 403 million tons. In Brazil, the second-crop harvest has reached 60%. Sales are at 43%, below the historical average.

Rising soybean prices have reduced pressure on corn prices. The port buys between R\$64 and R\$68 per bag. In Chicago, September remains at US\$4. The global corn deficit is expected to exceed 15 million tons in 2025. 2026 corn already offers premiums of up to 15% in dollar terms.

Corn exports may not reach the 4 million tons expected for July, but they remain strong. There is potential for shipments of up to 40 million tons this season.

## **Sorghum situation**

Sorghum remains a viable alternative in the second harvest. Production could hit a record 6 million tons. China, a traditional

US buyer, could make room for the Brazilian product.

## **Wheat situation**

Wheat prices remain stable in Chicago, between \$5,50 and \$6,00. The Northern Hemisphere harvest is progressing. The quality of American wheat remains low, directly impacting global supply.

In Brazil, imports have grown year-to-date. Planting declined in Paraná and Rio Grande do Sul. The area in Paraná fell by about 30%. Rio Grande do Sul, between 10% and 15%. The domestic market operates between R\$1.300 and R\$1.480 per ton.

# Rice situation

Rice is beginning to recover. Prices have already reached R\$70 on the western border of Rio Grande do Sul. Premium rice ranges between R\$65 and R\$68. Retailers are expected to pass on the price increases. Cheaper packages are likely to disappear. Producers in the Central-West region are holding onto stocks in anticipation of a price appreciation in 2026.

# Bean situation

Carioca beans are also reacting. The higher standard is already reaching R\$230 in Minas Gerais and R\$240 in São Paulo. Stocks in cold storage should only go to market at prices above R\$250. Black

beans, targeted for export, are still facing a slow market, with prices between R\$130 and R\$140 in the South.

Demand for rice and beans remains strong at retail. Alternative brands are gaining ground. Packaging is preparing for increased consumption in August.

Promotions are expected to disappear, with prices adjusting between R\$5 and R\$8 per kilo at retail.

**By Vlamir Brandalitze -**  
*@brandalitzeconsulting*

[RETURN TO INDEX](#)

# Bayer launches technologies at the 2025 Brazilian Soybean Congress

Company invests in integrated solutions for seed treatment, weed and disease control

23.07.2025 | 08:00 (UTC -3)

Cultivar Magazine



Bayer is presenting four new products in its integrated portfolio during the 2025 Brazilian Soybean Congress. The launches focus on managing seeds, weeds, pests, and diseases in soybeans.

To control diseases such as Asian rust, target spot and rot, the company announces the Fox Ultra fungicide. This is a mesostemic and systemic product composed of prothioconazole, impirfluxam, and trifloxystrobin, active ingredients from the pyrazolecarboxamide, triazolinthione, and strobilurin chemical groups. The Fox family of fungicides has been Bayer's leading player in the segment for 12 years, explains Guilherme Hungueria (pictured), the company's crop marketing manager.



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Fox Ultra's mechanisms of action include inhibiting mitochondrial respiration complex II, inhibiting sterol biosynthesis, and inhibiting C14 demethylation, acting at different stages of the infectious process. According to the company, it should always be used as a preventative measure against the onset of diseases, thus ensuring the greatest potential for fungal control.

Bayer reports that the product led the results of the product evaluation network in the 2024/25 harvest, the year of its pre-launch.

# weeds

For the control of resistant weeds, Bayer launches the **Convintro Duo herbicide**

The product combines the active ingredients diflufenicam—a first in Brazil—and metribuzim. One of the reasons for the launch is the presence of glyphosate-resistant weeds in the field, explains Hungueria.

Convintro Duo is a selective herbicide from the anilides and triazinones chemical group. It should be applied pre-planting soybean crops and pre-emergence of weeds. Its pre-emergent effect lasts up to 35 days, with an emphasis on weed control. crow's foot grass and caruru. Currently, there is a record against

*Amaranthus palmeri*, *Amaranthus viridis*,  
*bidens pilosa*, *Digitaria horizontalis*,  
*Digitaria insularis* e *Eleusine indica*.

## Seeds

The Guardião and Guardião+ packages combine seed treatment (ST) solutions. The solution protects the plant up to the V4/V5 stage, approximately 30 days after sowing. The packages include control against pests, early diseases, and nematodes. The treatment now incorporates the fungicide Evergol (penflufen), Bayer's first carboxamide, which allows for active ingredient rotation and strengthens defense against soil-borne fungi.

Bayer also highlights advances in its Intacta2 Xtend biotechnology, which has achieved yields above 100 bags per hectare. The company is preparing to launch the third generation of Intacta soybeans and is already testing the fourth, focusing on increased productivity and sustainability.

[RETURN TO INDEX](#)

# Biological control requires synchronization between natural enemies

*Ceraeochrysa cincta* larvae demonstrate a preference for eggs parasitized by *Trichogramma galloi*

22.07.2025 | 07:56 (UTC -3)

Cultivar Magazine



Predator larvae *Ceraeochrysa cincta* can compromise the biological control of sugarcane pests by feeding on eggs already parasitized by the parasitoid *Trichogramma galloi*. The behavior was observed in a study by researchers from São Paulo State University and the Federal University of Lavras.

Scientists evaluated the interaction between the two agents, both used in biological control programs. The goal was to determine whether competition reduces their combined effectiveness. Preference tests—with and without choice—showed that the preference of *C. cincta* varies according to the larval stage.

First and third instar larvae preferred unparasitized eggs. However, second instar larvae consumed mostly eggs already occupied by *T. galloi*. The difference indicates the risk of intraguild predation, when one natural enemy feeds on another, affecting the success of control.

This behavior may be related to specific nutritional needs. Second-instar larvae, which succeed the less nutritious first stage, would seek richer food. Eggs with developing larvae would offer greater nutritional value.

Under laboratory conditions, predation of parasitized eggs by second-instar larvae was 76% with choice and 64% without choice. For first-instar larvae, consumption

of unparasitized eggs was 70% and 68%, respectively. Third-instar larvae maintained a preference for unparasitized eggs.

The results suggest that, in joint release programs, it is necessary to avoid the predominance of second instar larvae of *C. cincta*. Synchronizing the developmental stages of agents can prevent competition and maintain the effectiveness of biological control.

Further information at  
[doi.org/10.37486/1809-8460.ba20003](https://doi.org/10.37486/1809-8460.ba20003)

[RETURN TO INDEX](#)

# Protein interactions improve fungal symbiosis in tomato plants

Study identifies molecular mechanism between SIDELLA and SIPIF4 that regulates strigolactone accumulation

25.07.2025 | 15:17 (UTC -3)

Cultivar Magazine



Photo: Wenderson Araujo / CNA

Researchers have discovered how two proteins interact to enhance the symbiosis between tomato plants and arbuscular mycorrhizal fungi (AMF), which favors phosphorus (P) uptake by the plants. The study reveals that the SIDEELLA protein binds to SIPIF4, reducing its stability and transcriptional activity, thus promoting the development of the symbiosis and phosphorus utilization.

Arbuscular mycorrhizal symbiosis (AMS) is essential for plants to obtain phosphorus in agricultural soils, where this nutrient, despite being abundant, has low mobility and availability. Fungi supply phosphorus to the plant in exchange for carbohydrates. In tomato plants, this interaction is favored by strigolactones (SLs), hormones that stimulate fungal growth in the soil.

The study showed that SIPIF4 acts as a negative regulator of AMS and symbiosis-induced phosphorus uptake. Plants engineered to overexpress SIPIF4 showed reduced fungal colonization, while mutants deficient in this protein showed increased colonization and elevated levels of symbiosis-specific phosphate transporters (PT4 and PT5).

SIDELLA, in turn, physically interacts with SIPIF4 and reduces its stability, promoting the accumulation of SLs and the expression of the PT4 and PT5 genes. In SIDELLA-deficient mutants, symbiosis was impaired, even when SIPIF4 was absent, indicating that SIDELLA acts upstream in regulation.

The authors state that SIPIF4 binds directly to the promoter regions of genes involved in SL biosynthesis and phosphate transporters, inhibiting their transcription. The presence of SIDEELLA prevents this binding, favoring the expression of these genes and, consequently, symbiosis and phosphorus uptake.

The research proposes that genetically manipulating the levels of these proteins could be a strategy for increasing the efficiency of phosphorus use, a limited resource in agriculture. According to the authors, the SIDEELLA-SIPIF4-SLs/PTs signaling pathway represents a promising target for developing tomato cultivars that better utilize soil phosphorus.

More information at  
[doi.org/10.1093/hr/uhae195](https://doi.org/10.1093/hr/uhae195)

## Understand the terms

- **SIDELLA**: scientific abbreviation referring to the DELLA protein found in the tomato species. **Sl**: is the abbreviation for the genus and species of tomato: *Solano lycopersicum* In biology, it is common to use the first two letters of the genus and the first two letters of the species to identify the origin of the protein or gene. **DELLA**: refers to a specific family of regulatory proteins in plants. DELLA proteins are known to be repressors of the gibberellin (GA) signaling pathway, which are plant hormones that promote growth.

- **SIPIF4**: abbreviation for *Solanum lycopersicum* Phytochrome-Interacting Factor 4. **SI**: refers to the tomato. **PIF4**: stands for Phytochrome-Interacting Factor 4. PIFs (phytochrome-interacting factors) are a family of proteins found in plants. They are transcription factors, meaning they bind to DNA to control the expression of other genes.

[RETURN TO INDEX](#)

# Brazil-China soybean relations require strategic vision

Conference at CBSoja highlights the risks of dependence and the need for structural actions in Brazilian agriculture

25.07.2025 | 10:57 (UTC -3)

Gabriel Faria



Photo: Gabriel Faria

The trade relationship between Brazil and China has been very favorable to the Brazilian agricultural sector, especially in the soybean chain. However, the interdependence between the two countries demands planning to ensure future economic security. This was one of the messages conveyed during the conference "What to expect from the relationship with China in agriculture?", held during the 10th Brazilian Soybean and Soybean Congress in Campinas, São Paulo.

The conference was led jointly by Larissa Wachholz, from Vallya Agro, and Letícia Frazão Alexandre Leme, from the Ministry of Foreign Affairs, and moderated by Alexandre Nepomuceno, general manager of Embrapa Soja.

In 2015, 17,5% of Chinese agricultural imports came from Brazil, and 21,7% came from the United States. With the trade war that began during Donald Trump's first administration, the situation changed, and Brazil became China's main supplier, accounting for 24,4% of imports, while the US's share fell to 12,8%.

In the case of soybeans, in 2016, Brazil was the source of 45,7% of the oilseed purchased by Asians, while the US supplied 40,5%. By 2024, Brazil's share jumped to 69%, while the US's share fell to 22,8%.

Diplomat Letícia Leme explained that this situation is the result of a Chinese government decision. Because the country has limited arable land and irrigation water,

it prioritized local rice, wheat, and corn production. Soybean farming was limited to the production of conventional materials for human consumption. As a result, since 2013, the Chinese have increasingly imported soybeans.

“To produce the volume of soybeans it demands domestically, China would need 40 million hectares, a third of the country's total arable land,” says the diplomat.

Despite being a planned scenario, the Chinese government is uncomfortable and is publicly working to reduce this dependence. One plan aims to increase local production to 15 to 30% of consumption by 2030.

Among the ongoing actions is investment in our own genetics, in logistical structures in Africa and South America and in different sectors of the soybean production chain, including in Brazil.

## **Risks for Brazil**

While Brazil's soybean trade balance is largely favorable, it also relies heavily on its main buyer. In 2024, 73% of Brazilian soybean exports went to China. The second-largest customer was Spain, accounting for 5% of exports. Therefore, a shift in demand from the Asian country could bring complications to the entire production sector.

In addition to lower demand due to increased local production, there are risks that new trade agreements will imply greater purchases of US soybeans, that new soybean suppliers will emerge, and even that China will find substitutes for soybeans in animal feed.

"Our client is open about its position on reducing dependence on imported soybeans. Therefore, we Brazilians need to think strategically about where we want to be in 15-20 years and work towards that, including with Chinese partners," says Larissa Wachholz.

For Larissa, Chinese investments in Brazil, whether in logistics, marketing, or the production system itself, are a way to expand the political dynamics of the

relationship and increase trust in the commercial relationship.

"Attracting direct investment from China is a tool to mitigate the risks of a possible breakdown in trade relations," he said.

The speakers also highlighted other opportunities for Brazil to attract Chinese investment, such as the national plan to restore degraded pastures, which will enable the expansion of productive areas in the country. Technological development of renewable fuels for maritime transportation (bunker fuel) and aviation (SAF) will allow for added value to exports. Expanding the storage and logistics infrastructure is another point, which could make Brazilian soybeans more competitive and potentially be used for other agricultural and non-agricultural products.

[RETURN TO INDEX](#)

# Soybean Congress attracts 2 participants in Campinas

The event was attended by representatives of the sector in Brazil, and from countries such as Argentina, Paraguay and China

25.07.2025 | 08:47 (UTC -3)

Lebna Landgraf, Cultivar Magazine edition



With an audience of approximately two thousand attendees, the 10th Brazilian

Soybean Congress and Mercosoja 2025 brought together representatives from different regions of Brazil, Argentina, Paraguay, and three delegations from China from July 21st to 24th in Campinas, São Paulo. The event's goal was to commemorate the centennial of soybean production in Brazil, discuss future technical challenges, infrastructure and logistics bottlenecks, and outline the soybean landscape within the global context. The next edition is already scheduled for 2028.

This year's technical program featured four conferences and 15 panels. There were over 50 presentations by national and international experts from various segments related to the soybean complex. "The audience's feedback was very

positive regarding all the topics discussed, from plant health, the geopolitical aspect of the crop, the Brazil-China relationship, the relevance of sustainability for the entire sector—in short, a program that provided a wealth of information and fostered reflection to stimulate decision-making," says CBSoja president Fernando Henning (pictured above), a researcher at Embrapa.

With the evaluation also positive, the event's vice president, Marco Antonio Nogueira, says that the discussions on the technical program were highly praised, as were the possibilities for interactions.

For Alexandre Nepomuceno, CEO of Embrapa Soja, in the year of the 2025 United Nations Climate Change

Conference (COP 30) in Brazil, discussing the sustainability of soybeans, a sector responsible for 6,4% of Brazil's GDP and generating approximately 2 million jobs, is even more relevant. "We discussed how to deal with climate change, how digital agriculture will help producers in decision-making, and how sustainability issues will further guide the soybean agenda," he reflects.



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# Promoting science and innovation

Henning also highlights another discussion related to genetic improvement and how technology can leverage growth not only in terms of area, but also increase productivity and add value with special traits to serve niche markets. "The new era of gene editing is here to stay, as several products are already close to entering the market: soybeans with higher oleic acid content, with differential protein and oil content," he emphasizes.

For the researcher, the Congress reinforced the message that Embrapa needs to continue its active involvement in guidelines related to soybean phytosanitary issues, because its recommendations are always based on science, which instills significant confidence in the sector. "Embrapa's

reputation solidifies its positions, and the public understands the scientific seriousness of the topics raised and the knowledge presented," he states.

For Nogueira, CBSoja stands out for bringing together the various links between the public and private sectors in the Innovation Arena, an event that brings together major industry players, small and medium-sized entrepreneurs, associations representing producers, and other stakeholders. "I see that everyone was able to balance the commercial aspect in a technological showroom environment that sought to bring technical and scientific information to companies. There was positive feedback from exhibitors, who said it contributed to their business," he says.

Another innovation in the CBSoja program was the holding of mini-workshops dedicated to discussing practical issues on the following topics: Soil Fertility and Fertilization, Nematode Management, Weeds, Bioinputs, and Root Development Impediments. Furthermore, the challenges of soybean production in Mercosur were highlighted, as well as an international workshop, "Soybean2035: A Decadal Vision for Soybean Biotechnology," which aimed to discuss the next 10 years of biotechnological tools for soybean improvement, with speakers from China, Argentina, the United States, Canada, and Brazil.

## **Academic highlights**

The Poster Session also provided an opportunity for knowledge sharing, with 321 technical and scientific papers presented. The highlight in the academic category was the paper "Low Carbon Soybean Program: Soil Arthropods Associated with Soybean Cultivation under Different Crop Successions," presented by Samuel Roggia, representing undergraduate intern Emily Matsubara Medeiros.

In the postgraduate category, the organizing committee selected the paper "Growth-promoting microorganisms in soybeans under different climatic conditions," presented by Bruno Emanuel Teixeira. And in the professional category, the highlight is the paper "Soybean seed industrial and nutraceutical quality

distribution within the canopy as affected by late defoliation.", presented by Constanza Soledad Carrera.

[RETURN TO INDEX](#)

# Blueberry production gains ground in reforested area of Santa Catarina

Initiative in Palmeira stands out as a source of income and an attraction for rural tourism

25.07.2025 | 08:20 (UTC -3)

Pablo Gomes, Cultivar Magazine edition



Photo: Pablo Gomes

Amid the trees that supply the forestry industry, a new source of wealth is beginning to attract the attention of investors in the Santa Catarina Mountains. Blueberry production is still recent and small in Brazil's coldest region, but it is increasingly proving to be a good source of income and job creation.

The viability of the orchard is attested by Celso Claudino, one of the largest producers of the fruit in the state. The orchard is located in a large reforested area owned by the businessman, in the countryside of Palmeira, a town of 2,7 inhabitants near Lages.

Native to cold regions of Europe and the United States, blueberries are rich in antioxidants, fiber, and vitamins. Rounded

and blue in color, they're also known as blueberries. This is how Celso and his son-in-law, João Carneiro, a partner in managing the orchard, came up with the brand name: Palm Berries, a reference to the municipality of Palmeira.

## **Economic viability**

The produce is sold throughout Brazil, and its clientele consists of consumers willing to pay up to R\$60 for a single kilo.

Wholesale, unpackaged, Celso sells a kilo for around R\$30. In Palmeira, he cultivates about three thousand trees. Each one yields, on average, five to ten kilos of fruit.

Another highlight is the tourist appeal, emphasized by Celso. "Blueberries are a

very viable product and very profitable for both small and large producers. As if that weren't enough, the orchard has several phases of beauty, such as flowering in September. Besides being rewarding, it can also be used for tourism," he explains.



Photo: Pablo Gomes

## Support from Epagri

The Santa Catarina Agricultural Research and Rural Extension Company assists with orchard establishment, technical guidance, and access to public policies. In the case of Palm Berries, entrepreneurs Celso and João receive information on potential diseases in the orchard, proper pruning, and the production of seedlings—previously produced in a nursery on the property.



Photo: Pablo Gomes

Clayrton Accacio Cruz da Silveira, a rural extension agent for Epagri in the municipality of Palmeira, emphasizes that the organization has fruit growing specialists and programs that support municipal offices throughout the state. "Soon, we will hold a field day here on this property to promote the activity and demonstrate that not only blueberries, but also other fruits that fit the same context, can be good income alternatives for many families, especially on small properties," he concludes.

[RETURN TO INDEX](#)

# FS invests R\$2 billion in new ethanol plant in Mato Grosso

The Campo Novo do Parecis unit is expected to generate 8 indirect jobs and begin operating in 2026.

24.07.2025 | 16:19 (UTC -3)

Silvia Sibalde



FS – Fueling Sustainability –, one of Brazil's largest ethanol and animal feed

producers, announces the construction of its fourth facility in the state of Mato Grosso. Construction on the FS plant in Campo Novo do Parecis began in June of this year and is expected to be completed in December 2026.

With a projected investment of R\$2 billion, the new plant will have the capacity to produce, annually, 540 million liters of ethanol, 935 thousand tons of co-products for animal nutrition, 69 thousand tons of technical corn oil and 56 thousand MWh of electricity.

"The implementation of the new FS unit follows our plan to expand the supply of sustainable, low-carbon biofuels and foods to Brazil and the world. The decision to invest in the Campo Novo do Parecis plant

was bolstered by the approval of the Fuel of the Future project, which resulted in E30 and will soon allow E35," says FS CEO Rafael Abud.

During construction, the unit in Campo Novo do Parecis is expected to generate 600 direct jobs and eight thousand indirect jobs.

FS already has three other operational units in the municipalities of Lucas do Rio Verde, Sorriso, and Primavera do Leste, all in the state of Mato Grosso. The expansion plan also includes a fifth industrial unit in the municipality of Querência, where the company has already begun preparatory work, including earthmoving and basic infrastructure.

FS is the first ethanol company in Brazil to utilize 100% of its production from corn. With a production capacity of over 2,5 billion liters of ethanol per year, it also boasts cutting-edge technology for the production of animal feed, corn oil, and bioelectricity. FS produces 100% of its ethanol from second-crop corn, making this biofuel even more sustainable by maximizing the use of existing agricultural land. Furthermore, generating renewable fuel in a system integrated with food production provides environmental, social, and economic benefits.

[RETURN TO INDEX](#)

# IAC program increases soil fertility in São Paulo

The Solo+Fértil Program raises awareness about soil analysis, liming, and fertilization for producers in the state.

24.07.2025 | 14:04 (UTC -3)

Barbara Geovanini



The Agronomic Institute (IAC-Apta),  
recognized for its tradition in soil fertility

research and laboratory analysis, is part of the Soil + Fértil Program—an initiative of the São Paulo State Secretariat of Agriculture and Supply, developed through the Comprehensive Technical Assistance Directorate (Cati/SAA) and the IAC itself. The program was created in 2023 to raise awareness about the importance of soil analysis, liming, and fertilization, and to bring modern Brazilian agricultural techniques to small and medium-sized producers.

The initiative emerged as a response to a challenge still present in agriculture: the high number of São Paulo producers who still do not adopt basic management practices, such as soil analysis, liming and mineral fertilization.

This worrying fact was revealed in the 2016/2017 survey of Agricultural Production Units (UPAs), which found that only 46% of properties perform soil analysis, 32% adopt liming practices, and 58% use mineral fertilizers. These practices are essential for efficient and sustainable agricultural production, and their absence can significantly compromise the productive potential of cultivated areas.

The IAC, in addition to actively participating in the program's design, serves as one of the central laboratories responsible for sample analysis—a crucial step in the initiative. "Currently, more than 60 laboratories in the state of São Paulo have the potential to join the program's network, and it is the IAC's responsibility to organize the participation of these units

and establish the technical conditions for this collaboration," says IAC researcher and deputy coordinator Heitor Cantarella.

The program's target audience is the 339 UPAs in the state of São Paulo, of which 184 do not yet perform soil analysis. In total, it is estimated that 16 small and medium-sized producers could benefit from the program's free services.

Producers interested in participating in Solo + Fértil should contact the CATI unit in their municipality, where they will receive all necessary guidance—from instructions for correctly collecting soil samples to recommendations for accredited laboratories for analysis. For more information, please email [Vinicius.nascimento@sp.gov.br](mailto:Vinicius.nascimento@sp.gov.br).

"By 2025, the program is gaining momentum, and the adoption of these practices promises to increase productivity on rural properties and boost agricultural production in the state of São Paulo by up to 20% in the coming years. This will not only increase food production but also increase income for agriculture and taxes collected by the government," highlights the IAC researcher.

With an expected duration of three years, the program aims to establish itself as an ongoing initiative. As the first producers are served, new participants may be incorporated, gradually expanding the initiative's reach and positive impacts in São Paulo's rural areas.

[RETURN TO INDEX](#)

# Mato Grosso revokes irrigation tax following demand from producers

The decision was celebrated by Famato, which played a decisive role in leading this demand.

24.07.2025 | 10:27 (UTC -3)

Vania Costa



At the request of the rural production sector, Governor Mauro Mendes signed into law Bill No. 975/2025, authored by State Representative Gilberto Cattani, which repeals Article 27 of Law No. 12.717/2024 and eliminates the tax on the use of irrigation systems in Mato Grosso. The decision was celebrated by the Mato Grosso Agriculture and Livestock Federation (Famato), which played a decisive role in guiding this demand through to its final approval.

Famato acted technically and strategically throughout the process, listening to producers, gathering detailed information, and engaging with lawmakers to demonstrate the negative impacts of the tax. The organization emphasized that the tax, which in some cases exceeded R\$60

per hectare, added another burden to production costs at a time when farmers are already facing challenges with tight margins, rising input costs, and the need for constant investment in technology and sustainability.

"This is another victory for the production sector. Irrigation is an essential tool for ensuring productivity and food security, especially in a state that must contend with irregular climate conditions. Famato mobilized its technical team, which presented solid data and arguments, and was heard. We thank Congressman Gilberto Cattani for his sensitivity to the issue and Governor Mauro Mendes for the sanction that corrects a harmful distortion," stated Famato president Vilmondes Tomain.

State Representative Gilberto Cattani, the bill's author, emphasized that the measure aims to correct an error in the previous legislation. He argued that the tax imposed by Law No. 12.717/2024 was inappropriate and directly affected the viability of irrigation projects, which are crucial for increasing agricultural productivity. "The repeal represents a relief for producers and reaffirms the legislature's commitment to strengthening agribusiness in Mato Grosso," he emphasized.

For analysts at the Federation's Technical Center, irrigation is one of the most important technologies for the development of modern agriculture, allowing for stable production even during droughts. With the tax revocation, producers will have greater security to

continue investing in systems that contribute to the sustainable growth of Mato Grosso's agriculture.

RETURN TO INDEX

# Coopavel will have the largest corn reception in history

The cooperative is expected to receive 9 million bags, 30% above the initial target, with emphasis on quality and efficiency.

24.07.2025 | 08:33 (UTC -3)

Coopavel



Coopavel is expected to receive the

largest second-crop corn crop in the cooperative's history this harvest, marking its 55th anniversary in December. From the first half of June to the end of July, approximately nine million bags will be received, 30% more than the initial target of 7,2 million.

The average number of trucks received daily at Coopavel branches in western and southwestern Paraná is 600, unloading between 18 and 20 tons of second-crop corn every 24 hours. "We are very happy with the results. The weather was helpful, and the region is reaping excellent results, which once again confirms the strength of our agriculture," comments President Dilvo Grolli. In Paraná, the expectation is a record harvest of 16,5 million tons, with productivity exceeding 10,4 kilograms per

hectare. The planted area was 2,76 million hectares.

Dilvo points out that the bumper second-crop corn harvest is also a result of advances in genetic improvement and the improvement in grain productivity and quality. Everything Coopavel receives is processed into feed, which feeds the chicken and pork protein production chains. "This special condition, which combines quality and productivity, will enable the production of superior and highly competitive feed, benefiting the cooperative's entire meat supply chain."

## Organization

The record reception of second-crop corn is influenced by other important factors, according to Dilvo. One of them is Coopavel's ample receiving and storage capacity, currently at 22 million bags per year (an increase of 4,5 million bags this year alone), and also the service provided to farmers and professionals involved in the grain flow process. "All the care and attention to our partners counts for a lot," said the president.

The presence of leaders and managers at the unloading stage, at the scales, hopper, and at the meal area is also a distinguishing feature. "We have employees who drive the organization forward," Dilvo points out. Growth is expected in the coming years, particularly as the cooperative expands its geographic

expansion strategy to increase grain intake and the sale of inputs and services. New branches will be opened in the West and Southwest regions, such as the one in Nova Aurora, further boosting Coopavel's performance and results.

[RETURN TO INDEX](#)

# Bayer to debut Plenexos Care insecticide in 2026

Insecticide with spidoxamate should focus on controlling whiteflies

24.07.2025 | 07:52 (UTC -3)

Cultivar Magazine



Bayer announced the global launch of the insecticide Plenexos Care -- scheduled for

2026 in Brazil (currently in the registration phase). The product's active ingredient is spidoxamate (spidoxamat), a molecule in the ketoenol group, classified by the IRAC in group 23. With systemic action, the compound inhibits the enzyme acetyl coenzyme A carboxylase (ACCase) and combats sucking pests such as whiteflies ( *Bemisia tabaci* ).

Spidoxamate translocates throughout the plant via both xylem and phloem, explains Guilherme Hungueria (pictured), Bayer's crop marketing manager. The application protects not only existing leaves but also new plant tissue, ensuring long-lasting coverage. The product can be applied via foliar application, soil application, or aerial spraying.

Plenexos Care acts innovatively, explains Hungueria. The molecule prevents adults from laying eggs, reducing pest reproduction. The product allows farmers to manage the infestation from the beginning of the crop cycle, preventing insect population growth.

The formulation is selective for natural enemies and pollinators, which favors more sustainable agricultural practices. Bayer anticipates that the label will recommend two applications per cycle. The company suggests rotating use with other products in its portfolio to prevent the development of resistant populations.

Plenexos Care will be registered for crops such as soybeans, cotton, fruits, and vegetables. Tests indicate compatibility with most tank mix products, facilitating

field adoption.



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[RETURN TO INDEX](#)

# Information is key for agriculture to face criticism

At the 10th CBSoja, Edivaldo Domingues Velini presented information on the sustainable aspects of the sector

23.07.2025 | 17:26 (UTC -3)

Vivian Chies



The need to generate and make available data on Brazilian agriculture, especially

regarding production sustainability, has been emphasized in discussions at the 10th Brazilian Soybean and Mercosoja Congress, taking place this week in Campinas, SP. At the opening conference of the program this Wednesday (23), Professor Edivaldo Domingues Velini, from Unesp/Botucatu, presented information on the sustainable aspects of the rural sector.

From an economic perspective, agriculture exports more than it imports, keeping not only the sector's trade balance positive, but also the country's. A graph with historical data dating back to 1988, displayed by the speaker, shows that Brazil's trade balance has almost always remained positive. However, when the agricultural sector is excluded from the equation, it becomes negative starting in

the 2000s.

The field's production also plays a decisive role in Brazil's energy matrix. Biomass accounts for 32,56% of Brazil's energy consumption. Biodiesel provides more energy than solar systems, and the volume generated would be enough to supply all of Uruguay, the professor stated. Brazil's energy matrix is 49% renewable, well above the global average of 14%. "But Brazil, without biomass, would be like the rest of the world," warned Velini.

A common criticism of Brazilian agribusiness, the volume of pesticides used in Brazil needs to be analyzed in perspective, the speaker argued. "It's a complex country, with intensive agriculture across vast areas, and many comparisons

don't make sense," he pointed out.

Brazilian agriculture leads the ranking in absolute value of pesticide purchases, but drops to 7th and 14th place when considering the value per hectare and per ton of product, respectively. In the case of herbicides, Brazil also leads in total volume consumed, but falls below the world average when analyzing the rates per cultivated area and per yield obtained.

Velini argued that even these indicators aren't the most appropriate. He advocates the use of indices that assess application safety for workers, consumers, and the environment, such as the Environmental Impact Quotient (EIQ). Considering this indicator, safety has improved in sugar, sugarcane, corn, and soybean crops, the professor emphasized.

Despite presenting a wealth of data, Velini highlighted the lack of accessible historical data on Brazilian agriculture. "Take databases seriously. We need information, and it needs to be accessible," he emphasized. According to him, data is key to addressing one of the main challenges facing agriculture: communicating with society.

The professor also highlighted the country's missed opportunities due to underinvestment in research, development, and innovation. "I can't imagine where we would be if, instead of R\$20 billion, we were investing R\$200 billion in research," he stated. "What does Brazil need in the short term? Data sets and partnerships for research innovation." In the long term, he believes that

increased investment requires a more profound shift in the allocation of public resources.

RETURN TO INDEX

# Ricardo Hendges takes over as marketing director at Biotrop

Agricultural engineer joined Biotrop in August 2021 as Regional Sales Manager

23.07.2025 | 17:06 (UTC -3)

Irvin Garcia



Biotrop, a leading provider of biological and natural solutions for agribusiness,

announces Ricardo Hedges (pictured) as its new marketing director. With over two decades of experience in agribusiness and a distinguished track record within the company, Hedges' mission will be to lead strategies that expand the brand's presence, accelerate business results, and strengthen relationships with the market and customers.

An agricultural engineer with an MBA and postgraduate degrees in business and marketing, Hedges joined Biotrop in August 2021 as a regional sales manager. In 2023, he was promoted to manager of the South Business Unit (BU Sul), consolidating his leadership experience and strategic vision.

"I take on this new challenge at Biotrop with great enthusiasm and a sense of purpose. I'm very proud to be part of a company that's leading a concrete transformation in agriculture, offering biological solutions that generate real value for farmers, resulting in high-yield crops while making the environment healthier and more regenerative. Contributing to this movement is undoubtedly inspiring. As leaders in this segment, our mission is to expand the reach of our technologies and further enhance our business performance," Hedges emphasizes.

According to Jonas Hipólito, Biotrop's president, the appointment reflects recognition for his consistent and transformative trajectory: "Hedges is a

highly committed professional with strategic vision, executional skills, and, above all, a deep alignment with our culture. He has the ability to cultivate a collaborative and high-performance environment, bringing out the best in each employee. I am fully confident that his leadership will enhance our strategies and further strengthen Biotrop's leadership in agribusiness."

[RETURN TO INDEX](#)

# Second corn harvest boosts the logistics sector

Conab points to the impact on the behavior of freight prices, which registered positive variations

23.07.2025 | 15:39 (UTC -3)

Conab



The start of the second corn harvest has boosted the logistics sector, impacting

freight prices, which are experiencing positive changes in several regions of the country. At the same time, fertilizer imports continue to rise, indicating optimistic expectations among rural producers for the upcoming agricultural season. This information is from the National Supply Company (Conab).

As the harvest progresses and preparations for the new production cycle begin, activity in Brazil's main logistics hubs is increasing. The volume of fertilizers imported by Brazil in the first half of 2025 reached 19,41 million tons – a 9,29% increase compared to the same period the previous year. The largest inflow was recorded by the port of Paranaguá, with 5,14 million tons, followed by the ports of Arco Norte and Santos. The

increase in the acquisition of agricultural inputs occurs despite a volatile international market and reinforces producers' commitment to large harvests.

In the case of soybeans, June exports totaled 13,42 million tons, a slight decrease compared to the previous month. Even so, Brazil remains strategically positioned in the global market, given China's resistance to the US product and Argentina's reduced competitiveness. The port of Santos accounted for 36,9% of shipments, while the ports of the Northern Arc accounted for 38,5%. Cargo origins were primarily concentrated in the states of Mato Grosso, Goiás, Paraná, and Minas Gerais.

Corn exports in June totaled 6,4 million tons, a lower volume than in the same month last year. The port of Santos leads the way, followed by São Francisco do Sul, Arco Norte, Paranaguá, and Rio Grande. States such as Mato Grosso, Paraná, Goiás, and Rio Grande do Sul stood out in foreign sales. In the domestic market, the slow pace of negotiations reflects oversupply, logistical bottlenecks, and concerns about avian flu. Even so, demand from the animal protein sector and ethanol production should contribute to the grain's appreciation in the coming months.

In the soybean meal segment, increased crushing of the grain for oil and meal production boosted inventories and supply. Estimated production is 43,78 million tons,

with exports reaching 11,5 million tons between January and June—a slight increase compared to the same period last year. The shipments are concentrated in the ports of Santos, Paranaguá, Rio Grande, and Salvador, with emphasis on the states of origin: Mato Grosso, Paraná, Rio Grande do Sul, and Goiás.

## Shipping

The freight market showed mixed behavior across the regions monitored by Conab. Prices dropped in Bahia, driven by the ample supply of carriers, despite the growing demand for fertilizers and soybeans. In Paraná, some routes also saw price reductions, especially for corn shipments to the South and Paranaguá.

States like Minas Gerais and Piauí remained stable, with minor fluctuations due to distances and cargo types.

Meanwhile, the Federal District, Goiás, Mato Grosso, Mato Grosso do Sul, São Paulo, and Maranhão saw freight price increases compared to the previous month. The increase is primarily attributed to the intensification of the corn harvest, the demand for trucks to transport still-stored soybeans, and the specific conditions of each regional market.

Pressure on road transportation is expected to continue throughout the second half of the year, with the need to transport large volumes of the current and next harvests.

[RETURN TO INDEX](#)

# FMC has a new Market Access Manager in Brazil

Guilherme Perroni reinforces the company's strategy in agribusiness

23.07.2025 | 14:42 (UTC -3)

Ingrid Ribeiro, Cultivar Magazine edition



FMC announced the arrival of Guilherme Perroni (pictured) as its new Market

Access Manager in Brazil. With a proven track record in the sector, Perroni's mission is to strengthen the company's connections with its stakeholders, including customers, organizations, and strategic institutional agents, at a time of expanding FMC's presence in the national agribusiness sector.

With over 30 years of experience in marketing, institutional relations, and market access, Perroni has worked for leading companies, always focusing on innovation, commercial strategy, and building strong partnerships. His arrival represents an important step in FMC's vision for the future, which seeks to expand its presence and influence in the agricultural sector through structured relationships and integrated solutions.

"Guilherme's arrival strengthens our commitment to an increasingly qualified dialogue with the market and all links in the agribusiness chain. His vast experience and strategic vision will be essential in driving our institutional access initiatives and strengthening relationships with our customers," said Renato Guimarães, president of FMC in Brazil.

[RETURN TO INDEX](#)

# Syngenta Announces New Global Data and IT Leader

Based in São Paulo, Renato Moreira will lead data strategy in the Vegetables and Flowers division

23.07.2025 | 10:07 (UTC -3)

Cultivar Magazine



Syngenta announced the appointment of Renato Moreira (pictured) as the new

global IT and Data leader for the company's Vegetables and Flowers division. Based in São Paulo, Renato will lead an international team of data engineers and work closely with Marketing Intelligence, Data Analytics, and other departments within the unit, with the goal of accelerating digital transformation and fostering a data-driven culture.

The new leadership reinforces Syngenta's commitment to using data and artificial intelligence as pillars for sustainable growth and innovation in agribusiness. Renato will report directly to Brandon Leander, and his role will be strategic in improving productivity, profitability, and the customer experience on a global scale.

With extensive experience in data governance, automation, and cloud

infrastructure, Renato has led the implementation of large-scale technology solutions at companies such as Novartis and Vereda Educação. At Syngenta, he has worked as HR Solutions and Systems Manager for Latin America since 2023.

[RETURN TO INDEX](#)

# Argentina reopens registration of grain exporters to China

Interested companies have until August 1st to complete or update their registration with Senasa.

23.07.2025 | 09:39 (UTC -3)

Cultivar Magazine, based on information from Senasa (AR)



Argentina's National Agrifood Health and Quality Service (Senasa) has opened the

registration period for companies exporting barley, wheat, soybeans, sorghum, and corn to China. Registration remains open until August 1st and must be submitted through the agency's Export Request Self-Management System.

The measure complies with the annual registration update schedule provided for in the bilateral agreements between Argentina and China, which establish the phytosanitary and operational requirements for grain trade between the two countries.

Companies that are not yet registered must register, as well as those that need to update information such as their corporate name, address, or add new products to their export list. Additionally, companies

must be previously registered with the Importer and Exporter Registry of the Directorate-General of Customs (DGA) and the Customs Collection and Control Agency (ARCA).

During the process, exporters must provide their CUIT number (equivalent to a CNPJ), contact information, the products they intend to export, and the shipping ports and terminals to be used. The documentation includes submission of Annexes II, III, and V, with specific declarations required for barley exports to China, such as a list of potential suppliers and a commitment to sampling and maintaining stocks for up to 120 days.

After the deadline, uncompleted orders will remain in "pending" status until the next

update window.

Exporters already operating in the Chinese market can also check the status of their registration with the General Administration of Customs of the People's Republic of China (GACC).

Questions can be clarified with the Senasa Feed and Grain Products Coordination, by phone +54 (11) 4121-5175 or by email [granarios@senasa.gob.ar](mailto:granarios@senasa.gob.ar).

[RETURN TO INDEX](#)

# Carbon intensity defines the use of inputs in biofuels

CBSoja panel points out that traceability and national data are key to new markets

23.07.2025 | 09:05 (UTC -3)

Vivian Chies, Cultivar Magazine edition



The carbon intensity of production will be as important or even more important for

the selection of biofuel feedstocks than prices. Measuring this intensity with national data and obtaining certifications is essential for accessing new markets, such as renewable aviation fuels. This warning was the main message of the panel "Soy: Feedstocks for Biofuels," held on Tuesday afternoon (July 22nd) at the 7th Brazilian Soybean and Mercosoja Congress in Campinas, São Paulo.

Petrobras already purchases soybean oil to produce diesel-R at two refineries. Unlike biodiesel, this fuel uses vegetable oil processed alongside petroleum to produce diesel. Marcelo Antunes Gauto, the company's Business Models and Low Carbon Product Certification Manager, said that last year, he tried to purchase certified soybean oil for the European

market but was unable to find it in Brazil.

Meeting the criteria for the different certifications required in the domestic and international markets is no easy task, Gauto acknowledged: “The methodologies are different and this is a major commercial challenge.”

Acquiring oils to meet the expected demand for renewable products in different segments is a challenge in itself. In 2024, the country produced approximately 9 billion liters of biodiesel, a fuel already in widespread use. It was used in vehicles in voluntary blends of 2% in diesel. This percentage has increased over time and, on August 1st, will reach 15%. Legal authorization is already in place to reach 25%. "Today, in terms of biodiesel plant

capacity, we could already produce B20 (diesel with 20% biodiesel)," says Daniel Furlan Amaral, director of Economics and Regulatory Affairs at the Brazilian Association of Vegetable Oil Industries (Abiove).

## **Soy and biodiesel**

Currently, more than 70% of biodiesel is produced from soybean oil. It would be possible to increase the availability of this raw material for biofuel production, but a market would need to be found for the bran, which accounts for 80% of the grain's weight. The expectation, however, is that biodiesel will begin to compete for raw materials with fuels for maritime and air transportation. Combined, the demand for

these two segments amounts to hundreds of millions of tons.

André Bello Oliveira, Petrobras' Sustainable Product Research, Development & Innovation Manager, pointed out that a single industrial aviation biokerosene production plant would consume 10% of Brazil's oil production. And, in addition to a competitive price, the raw material must have low carbon intensity. He points out that the aviation market doesn't have targets for biofuel volume in the blend, but rather for decarbonization. "Carbon intensity is a value on the table," emphasizes Gauto, a company colleague.

## **Sustainability in Brazil**

One of the sustainability indicators that Brazilian producers need to be aware of is the impact of land-use changes.

Researcher Thayse Dourado Hernandes, from Embrapa Meio Ambiente, showed that this factor is responsible for the majority of the country's carbon emissions (39%), followed by agriculture (31%). This contrasts with the global average, where the energy and industrial sectors account for over 80% of emissions.

Thayse emphasized that the country must develop its own methods and provide robust information on its production chains. She highlighted the case of corn ethanol, which, based on national data, demonstrated a favorable relationship with land use, contrary to estimates based on international information. "This

demonstrates the importance of taking control of generating models to evaluate our country's products," she said.

Petrobras' Gauto highlights the role of soybeans not only as a direct supplier of oil, but also in enabling crops like canola in their second harvest. He says it has been possible to neutralize the rate of land-use change by using raw materials from the second harvest.

[RETURN TO INDEX](#)

# PHC brings peptide innovation to CBSoja 2025

Company presents solutions for diseases and nematodes focused on soybeans, corn and sugarcane

22.07.2025 | 15:27 (UTC -3)

Augusto Silvestre, edition of Cultivar Magazine



Plant Health Care (PHC), a global company within the PI Industries Ltd.

group and a leader in sustainable agricultural technologies, is participating in the 2025th Brazilian Soybean and Mercosoja Congress XNUMX at a time of strong expansion in Brazil. At the event, the company will highlight disruptive technologies for disease and nematode management, with products that have transformed soybean productivity.

Present in the country's main producing regions, PHC brings to the congress the latest advances with three technologies based on bioactive peptides: the biochemical fungicide Saori, the high-performance nematocide Teikko, and the bioactivator HPlant - solutions that have been adopted by producers seeking productivity with safety, sustainability, and economic returns.

## **Saori: seed-based protection against foliar diseases and the Soybean Anomaly**

The first and only biochemical fungicide registered for seed treatment focused on controlling soybean foliar diseases, Saori reinforces its leading role with new results that demonstrate its effectiveness in reducing Soybean Anomaly - one of the biggest emerging concerns in soybean farming.

Studies conducted by institutions such as Fitolab, Juliagro and Fundação Rio Verde revealed that the use of Saori in seed treatment reduced the incidence of Anomaly by up to 30%, even when the farmer applied it with the aim of controlling diseases such as rust and target spot.

"The disease has become a headache for soybean farmers and required an urgent solution. The results prove that Saori has the potential to be a strategic ally in preventative management, with benefits that begin as early as germination," emphasizes Rodrigo Egéa de Miranda, General Director of PHC Brasil, which is already working to officially include this protection in the Saori label.



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"In our studies, we observed a reduction in severity of up to 60% with the use of Saori and evaluated the percentage of damaged grains with a reduction of up to 90%,"

demonstrating that the technology can also contribute to the management of this complex, which has generated significant losses for the sector," reports Fernanda Juliatti, phytopathologist researcher and CEO of Juliagro. "In this study, the potential loss generated a difference of over 300 kg, 7 bags that could have been lost if we had not adopted the technology."

With efficiency results far superior to market standards, the technology acts as a biochemical fungicide with multiple modes of action, enhancing the plant's natural defense system from seed to the end of the cycle and also protecting the seed's genetic potential. "The good news is that these benefits will be visible to those who use the product at a dose of 90 µg/seed to control diseases such as rust, target spot,

and end-of-cycle diseases, following label recommendations," highlights Ferdinando Silva, R&D Director at PHC Brasil.

## **Teikko: biochemical nematicide with robust and long-lasting action**

With an exclusive peptide-based formulation, Teikko nematicide has distinguished itself for its superior efficacy in controlling plant nematodes. Applied as a seed treatment, it inhibits nematode development in roots, reduces soil populations, and delivers a long-lasting and stable effect, even under adverse environmental conditions.

National experts in plant nematodes validated field results during the MT Foundation's recent Soybean Technical Meeting, demonstrating the product's

performance against various nematode species. "Teikko represents a safe, effective solution that's compatible with conventional management, without compromising other chemical or biological inputs," explains Ferdinando.

## **HPlant: bioactivator that transforms management into productivity**

HPlant is an innovative bioactivator that stimulates plants' defense systems, making them more resilient to environmental stresses increasingly common in Brazilian agricultural production. It increases initial vigor, promotes deeper roots, and improves tolerance to climatic and nutritional stress—decisive factors for consistent production even under adverse conditions.

HPlant has been widely used by farmers seeking a competitive edge in their crops, with proven benefits in productivity and profitability in crops such as soybeans, sugarcane, coffee, and corn, among others.

## **Lecture at CBSoja**

On Monday morning (22), Rodrigo Egéa de Miranda, general director of PHC Brasil, presented the lecture "How PHC technologies are redefining the future of agriculture", at the CBSoja Innovation Arena, at Expo Dom Pedro, in Campinas (SP). The executive highlighted peptide-based solutions as sustainable and effective alternatives for controlling diseases, nematodes and abiotic stresses,

reinforcing the company's role in  
advancing high-performance agriculture.

[RETURN TO INDEX](#)

# Santa Clara Group announces R\$114 million investment from BNDES

With the investment, the bank now holds a 19,9% stake in the company, which projects to quadruple its revenue by 2030.

22.07.2025 | 10:45 (UTC -3)

Rodrigo Pinto, Cultivar Magazine edition



The Santa Clara Group, which specializes in specialty fertilizers and biopesticides, announced the addition of BNDESPar, the investment arm of the Brazilian Development Bank (BNDES), as a new partner. The investment is worth R\$114 million, giving the bank a 19,9% stake in the group, which is headquartered in Ribeirão Preto, São Paulo.

The investment will support Santa Clara's strategic plan, which forecasts 20% growth in the next harvest (2025/26) and the goal of reaching R\$1 billion in revenue by 2030 - four times the amount recorded in the 2024/25 harvest. The operation also marks BNDES' return as a direct investor in privately held companies after a decade.

According to BNDES President Aloizio Mercadante, the support for Santa Clara is aligned with the bank's ecological transition and decarbonization agenda.

"The use of special fertilizers and biodefensives reduces greenhouse gas emissions and the use of pesticides, contributing to sustainability and food security," he stated.

The group is made up of four companies: Santa Clara Agrociência, Inflora Biociência, Hydromol, and Linax. It currently has two fertilizer plants in Jaboticabal, São Paulo, and an international presence in over 30 countries. In the last harvest, revenue reached R\$255 million, with average annual growth of 30% over the past seven years. The group expects to expand its

workforce from 300 to 750 professionals over the next five years.

Inflora Biociência, founded in 2023, will be responsible for building a new biodefensives plant, focusing on third- and fourth-generation products, such as microbial metabolites and plant extracts. These products have a longer shelf life, faster action, and greater compatibility with agricultural management, in addition to eliminating changes to farmers' routines.

"The arrival of BNDES enables us to continue implementing our Business Plan and its emphasis on research, development, and innovation, which represent the DNA of Santa Clara, a national brand that allocates 8% of its annual revenue to R&D&I. This allows us

to expand our solutions that enhance agriculture based on productivity, profitability, and sustainability, contributing to the country's energy transition," says João Pedro Cury (pictured), CEO of the Santa Clara Group.

The BNDES investment will also enable the creation of a new innovation center and the development of registrations to expand the portfolio of biological solutions. Santa Clara already has its own registered microorganisms and works with bionematicides, bioinsecticides, and biofungicides.

The group's governance structure includes a four-member Board of Directors, which will be expanded with the addition of a representative from BNDES. According to the company, the arrival of the new partner

will not alter the company's control or management.

[RETURN TO INDEX](#)

# Soybean Zarc will include soil management in risk assessment

Pilot project in Paraná launches new methodology that adjusts rural insurance subsidies according to management quality

22.07.2025 | 08:50 (UTC -3)

Graziella Galinari, Cultivar Magazine edition



Photo: Antonio Neto

The Agricultural Zoning of Climate Risk (Zarc) for soybeans will undergo a significant change starting with the 2025/26 harvest: in addition to soil and climate characteristics, it will also consider the level of management adopted by the producer. The initiative is part of the Zarc Management Levels (ZarcNM) project, developed by the Ministry of Agriculture (MAPA) and Embrapa, and will initially be tested in Paraná.

The innovation will allow producers who adopt good soil management practices to receive higher subsidies on rural insurance policies, based on a new climate risk classification. The proposal was regulated by Normative Instruction No. 2/2025, published in the Official Gazette of the Union on July 9, after approval by the

## Interministerial Rural Insurance Steering Committee.

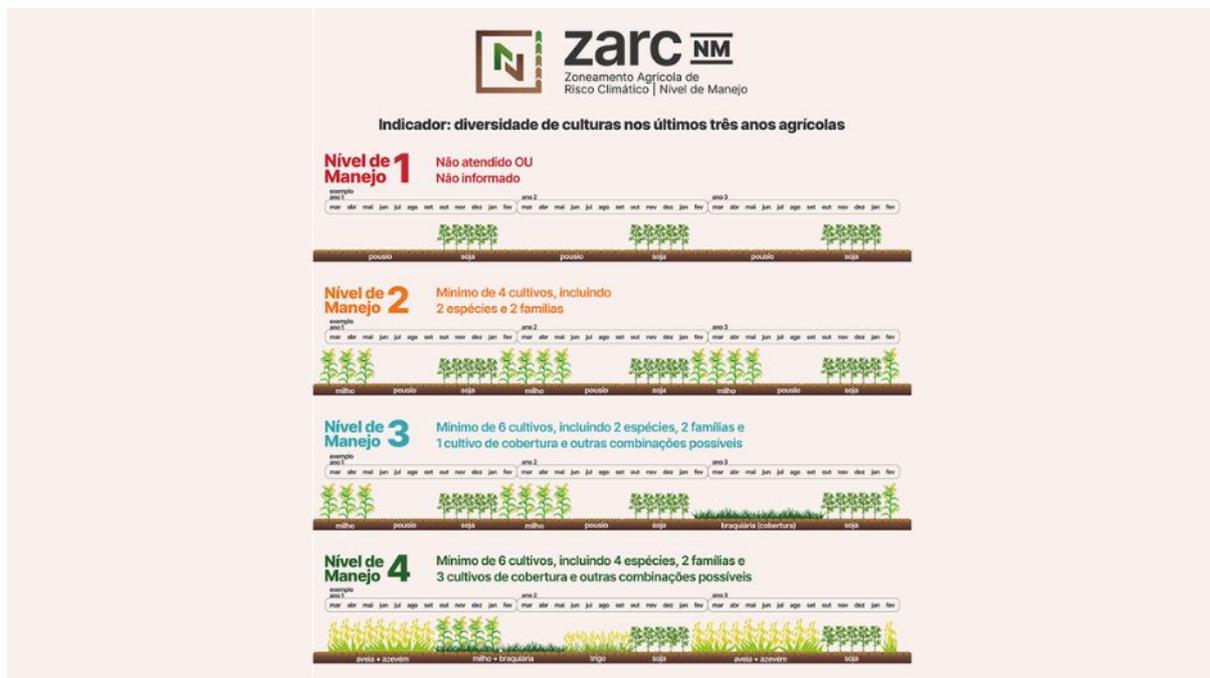
In this initial phase, MAPA allocated R\$8 million to the project, which aims to encourage sustainable practices, reduce losses due to water deficits, and recognize those already investing in a more efficient production system. "This is a step we've been working on with Embrapa for at least two years. The idea is to improve the methodology and expand its reach in future harvests," said Diego Melo de Almeida, director of the Ministry's Risk Management Department.

## **Management levels influence subsidy**

The new classification created by ZarcNM divides cultivated areas into four management levels (NM1 to NM4), defined based on six technical indicators. The better the management, the higher the rural insurance subsidy percentage: 20% for NM1, 25% for NM2, 30% for NM3, and 35% for NM4. Under the current rule, the fixed percentage for soybeans is 20%.



According to researcher José Renato Bouças Farias of Embrapa Soja, the update is crucial in a scenario of recurring water scarcity. "ZarcNM demonstrates that a well-conducted management strategy can significantly reduce climate risk, which is essential for agricultural planning and rural insurance," he explains.



The methodology was validated based on field assessments conducted on 62

properties in Paraná and 201 sites in Mato Grosso do Sul. The highest levels on the scale (NM3 and NM4) indicate properties with improvements in soil physical, chemical, and biological properties, promoting greater water availability for crops.

## **Digital platform and accredited operators**

Area classification will be performed automatically through the Management Level Information System (SINM), a platform developed by Embrapa Digital Agriculture. The system cross-references property data, remote sensing information, and georeferenced soil analysis to determine the management level.

Data entry will be performed by previously accredited operators—such as cooperatives, insurance companies, laboratories, geoprocessing companies, and public technical assistance agencies. The goal is to ensure traceability, transparency, and reliability of the information.

According to José Eduardo Monteiro, coordinator of the Zarc Embrapa Network, the system is based on objective and verifiable indicators, which enables fairer public policies. "This refinement helps identify safer regions or seasons for cultivation, in addition to encouraging the adoption of sustainable agricultural practices," he emphasizes.

Cocamar is one of the cooperatives participating in the pilot project, with 20 members selected to apply the new methodology. For the cooperative's technical executive manager, Renato Watanabe, the proposal represents an important step forward. "ZarcNM brings a new perspective to climate risk analysis and paves the way for more efficient public policies," he says.

## **Discussion at the Brazilian Soybean Congress**

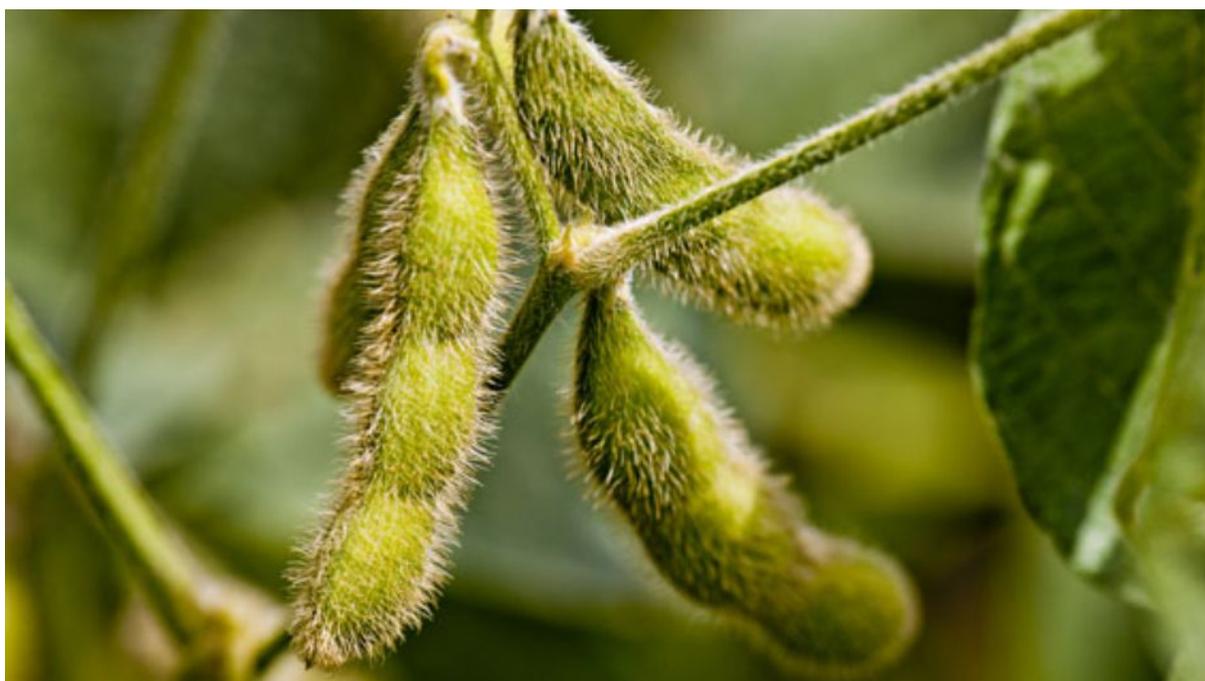


Photo: Antonio Neto

The topic will be discussed this Tuesday, July 22, at 14 p.m., in a panel discussion at the 2025th Brazilian Soybean Congress and Mercosoja XNUMX. Lectures are planned on the impacts of climate change on agricultural production, ZarcNM methodologies, and MAPA's risk management policies. The publication "Indicators for Classifying Management

Levels in ZarcNM Soybeans" will also be launched during the event.

## **Zarc Evolution**

Since its creation in 1996, Zarc has been evolving. Initially, it considered only soil texture (clay content) to classify water availability. Starting in 2022, it adopted six classes based on sand, silt, and clay contents. Now, with ZarcNM, physical, chemical, and biological structure and fertility are also included in the calculation—reflecting the direct influence of management on soil water retention and infiltration.

Technical information and classification criteria are available in Normative Instruction No. 2/2025. Those interested in

becoming accredited as SINM operators can access the documentation on the project's official website.

[RETURN TO INDEX](#)

# Orbia expands commercial strategy with new director

Marcos Dallagnese takes over with a focus on innovation, partnerships and value creation for rural producers

21.07.2025 | 17:28 (UTC -3)

Kelly Moraes, Cultivar Magazine edition



Orbia, the largest digital agribusiness platform in Latin America, announced

Marcos Dallagnese (pictured above) as its new commercial director. Dallagnese's mission is to strengthen the company's commercial strategy in Brazil, expanding its value proposition to farmers and supply chain partners.

An agricultural engineer from UFSM, with an MBA from FGV and executive training from Concordia University, Dallagnese has over 20 years of experience in the chemical and agricultural sectors, having worked for companies such as Bayer Crop Science and ALTA. According to him, the current situation demands deeper connections with rural producers and a focus on sustainable results.

With the arrival of the new director, Orbia reinforces its role as an integrator of digital solutions and market intelligence for

Brazilian agriculture.

[RETURN TO INDEX](#)

# Valtra brings technologies to Coopercitrus Expo 2025

The stand will feature newly launched models, such as the S6 Series, as well as the Momentum planter and the Q5 and T CVT tractors.

21.07.2025 | 15:16 (UTC -3)

Beatriz Voltani, edition of Cultivar Magazine



Valtra is showcasing a robust portfolio of high-tech solutions at the 26th Coopercitrus Expo, which runs until July 25th in Bebedouro, in the interior of São Paulo state. The highlight will be the S6 Series tractor line, which will be presented for the first time at the event, representing a new level of power, intelligent technology, design, and performance in the field.

The S6 Series was designed and manufactured in Finland and is arriving in Brazil to meet the demands of producers seeking high performance in heavy-duty operations, such as grain and sugar-energy production. This is a major launch for Valtra, which has already won important design awards, such as the Good Design Award, the iF Design Award,

and the prestigious Red Dot Award:  
Product Design 2025.

According to data from Conab, national grain production is expected to reach 336,1 million tons in the 2024/25 harvest, a new production record that represents a 13% increase over the previous season. Given this scenario of significant growth in agricultural production, the new line emerges as a robust and efficient solution for increasing productivity in the field.

The tractors are designed for robustness and durability, suitable for operations in a variety of soil types and for various crops. With maximum power ranges of 345 hp, 375 hp, and up to 425 hp, the S6 Series features three models: the S346, S376, and S416. "The S6 Series is here to meet

the demands of producers who require onboard technology and large-scale power. At Coopercitrus, we will demonstrate how this tractor can transform productivity in the field," says Fábio De Biase, Valtra sales manager.

In addition to the S6, the brand's stand will feature other reference equipment:

- **Q5 Tractor** – machine designed to offer high performance, fuel economy and advanced automation technologies;
- **T CVT models** – equipped with continuously variable transmission, they deliver high power and precision;
- **Momentum Planter** – folding planter that offers 18 planting rows or more, with onboard Weight Transfer

technology, which provides homogeneous seed deposition depth.

Fabio emphasizes that participating in the event strengthens the brand's presence in the interior of São Paulo, in addition to providing an opportunity to connect with the region's rural producers. "We're bringing to Coopercitrus Expo a strategic selection of machines that represent the most advanced agricultural technology. These solutions are designed to increase productivity in the field with intelligence, connectivity, and sustainability," he concludes.

[RETURN TO INDEX](#)

# Bedbugs choose green and pink fruits to attack

Research reveals which tomato ripening stages most attract insects

21.07.2025 | 08:31 (UTC -3)

Cultivar Magazine



Green and pink tomatoes are more susceptible to stink bug attacks.

Researchers have identified that the ripening stages of the fruit directly influence the feeding behavior of three species: *Halyomorpha halys*, *Leptoglossus zonatus* e *Nezara viridula*. The results indicate that the green stage attracts more *N. viridula* e *L. zonatus*, while the pink stage is preferred by *H. halys*.

The research was conducted at the Department of Entomology at the University of Florida in the United States, under controlled laboratory conditions. Scientists evaluated the feeding behavior of nymphs, males, and females of the three species, using tomatoes at four stages of ripeness: green, beginning to change color ("breaker"), pink, and red.

In the feeding bioassay, *N. viridula* caused more punctures in green tomatoes.

Females, males, and nymphs of this species showed high feeding activity at this stage, averaging up to 12 punctures per fruit.

To *L. zonatus*, the pattern was similar: the largest perforations occurred in green fruits, mainly among females and nymphs.

Yes, *H. halys* showed distinct behavior.

The species preferred pink fruits, especially the nymphs, which caused an average of up to seven punctures per unit.

Red tomatoes were the least attacked of all species.

## **another experiment**

A second experiment, focusing on feeding behavior, reinforced these findings. During 12 hours of observation, the nymphs of *H. halys* remained on average 34% of the time in pink tomatoes. In the case of *N. viridula*, females and nymphs spent more time in the green stage. The same was observed in *L. zonatus*, whose preference for green fruits was notable, especially among the nymphs.

The results also revealed differences in damage potential between species. *N. viridula* produced more punctures per fruit than the other two. The insect's developmental stage directly influenced the damage caused. Nymphs, less mobile and prone to aggregation, remained longer in the fruit and caused more punctures than adults, which move more frequently.

The preference for green and pink tomatoes may be related to visual and olfactory stimuli. Volatile compounds produced by fruits at different stages of ripeness—such as carotenoids and phenols—can attract insects. The pink color, rich in beta-carotene, may act as a visual attractant. *H. halys*, as already observed in orange peppers. On the other hand, the greater amount of volatiles in ripe tomatoes may have a repellent effect on *N. viridula* e *L. zonatus*.

## Search suggestions

The researchers suggest that growers prioritize inspection of green and pink tomatoes during monitoring. These stages are at the highest risk of attack.

Furthermore, the study proposes the use of sentinel plants at these stages for early pest detection.

Another possible development is the creation of attractive traps based on color and odor, mimicking the characteristics of the fruits preferred by stink bugs. This could pave the way for "attract-and-kill" control systems, as already used in other crops.

The study was conducted with a single tomato cultivar under laboratory conditions. Further field research, using different cultivars and environments, is needed to validate and expand the findings.

Further information at  
[doi.org/10.3390/insects16070740](https://doi.org/10.3390/insects16070740)

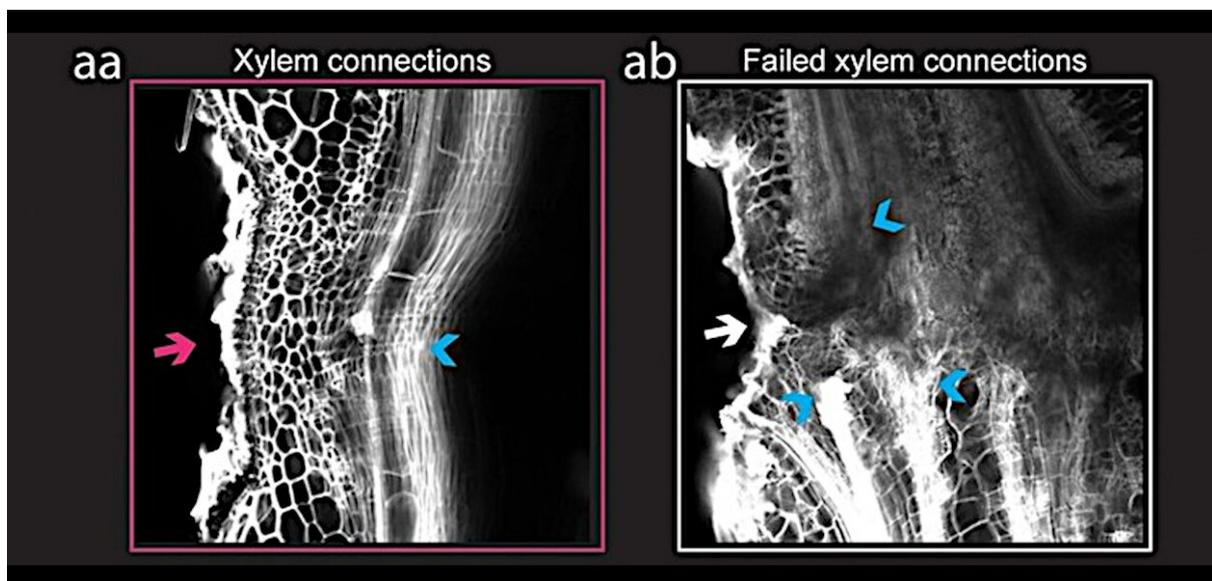
[RETURN TO INDEX](#)

# Immune response prevents grafting between tomato and pepper

Study shows that combination between species activates defense genes and prevents blood vessel formation

21.07.2025 | 07:54 (UTC -3)

Cultivar Magazine



The grafting attempt between tomato plants (*Solanum lycopersicum*) and pepper

(*Capsicum* spp.) triggers an intense immune response, similar to that activated by parasitic infections. The discovery of this mechanism, made by researchers at Cornell University, suggests that the failure of these species to unite is directly linked to the activation of immune receptors and localized cell death, impairing the formation of vascular connections.

Tomato plants grafted with four distinct pepper varieties—Cayenne, Doux des Landes (DDL), California Wonder (CW), and Habanero—failed to form functional xylem bridges. The study detected persistent cell death at the junction between the species, impaired growth, low survival, and physical instability in the stem structure. Even the combination with the best survival rate (tomato-CW) failed to

form effective vascular connections and showed significant accumulation of nonviable tissue (NVT).

Transcriptomic analysis revealed that these grafts activate a long-lasting defense profile, with significant upregulation of nucleotide-binding leucine-rich repeat receptors (NLRs), which are linked to the plant's immune response. More than a thousand genes were identified as exclusively activated in incompatible grafts, many associated with the production of defensive compounds, hormonal signaling, DNA damage, and programmed cell death (PCD).

# Physiological and structural incompatibility

Anatomical evaluation of the grafts 30 days after completion indicated that, unlike the autologous controls (tomato-tomato or pepper-pepper grafts), none of the interspecies combinations formed continuous xylem bridges. The joining regions presented parenchymal tissue without vascular reconnection. In 92% of the cases with DDL, for example, the stems broke at the grafting point when subjected to bending tests.

Furthermore, grafted tissues with CW peppers exhibited significant reductions in

stem diameter and shoot and root growth. Physical instability was confirmed by mechanical tests, which demonstrated lower structural rigidity in heterologous grafts.

## **Persistent cell death**

Areas of cell death were quantified using trypan blue staining. While the autologous controls progressively reduced the presence of dead tissue over three weeks, the tomato-pepper grafts maintained constant and high levels of NVT. This persistence suggests that this is not ordinary necrosis, but a coordinated process of programmed cell death.

Although attempts to detect DNA breaks using TUNEL staining did not yield conclusive results, the authors found a strong signal of genotoxic stress in the mismatched samples. Genes associated with DNA repair, such as orthologs of BRCA1 and BARD1, were significantly expressed.

## **Defense as a response to the “stranger”**

Molecular analyses revealed overlap between the graft response and known responses against pathogens and herbivory. Genes commonly activated by *Botrytis cinerea*, attack of *Manduca sexta* (caterpillar) or infestation by *Cuscuta*

*campestris* (parasitic plant) were also activated in tomato-pepper grafts. The greatest similarity was observed with the mechanisms activated by plant parasites, reinforcing the hypothesis that grafting is perceived as a biological intrusion.

The genes activated in these cases included leucine-rich receptors (LRRs), MAP kinases, genes related to ethylene and salicylic acid biosynthesis, and transcription factors such as WRKY70—a key regulator at the interface between the salicylic acid (SA) and jasmonic acid (JA) signaling pathways.

## **Induction of autoimmunity**

The simultaneous activation of dozens of NLRs indicates that the graft may be inducing a form of autoimmunity, a phenomenon known in interstate hybrids as hybrid necrosis. The researchers suggest that the fusion of tissues from different species, each with its own specific immune system, may trigger recognition of "non-self," leading to the activation of defensive responses that are lethal to the graft.

These responses include the production of steroidal glycoalkaloids (SGAs), toxic compounds regulated by jasmonate, and the activation of the ERF114 gene, linked to xylem formation and adventitious rooting. Both genes were strongly expressed at incompatible junctions and

appear as candidate incompatibility markers.

## **Unique genetic signature**

More than a thousand genes were exclusively active in incompatible grafts, not in autologous grafts or in response to classical biotic stresses. These included genes associated with anthocyanin biosynthesis, salt stress response, and abscisic acid (ABA) perception, as well as regulators linked to oxidative damage.

Among the most promising genes for future studies is WRKY70, also identified in cases of incompatibility in grapevines. The simultaneous activation of processes

typical of the immune response, along with indicators of cell death and DNA damage, outlines a scenario in which the union between tomato and pepper is unviable due to the activation of defense mechanisms typical of pathogenic attacks.

Further information at  
[doi.org/10.1093/hr/uhae255](https://doi.org/10.1093/hr/uhae255)

[RETURN TO INDEX](#)



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