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Latin America 2023 review: Mexico's North American trade dispute escalates

10 January 2024

Mexico and its northern neighbours locked horns in 2023 over the Latin American country's advancing of its phase outs of the herbicide, glyphosate, and genetically modified corn (maize). The latter would result in bans on US and Canadian exports of its corn to Mexico. Some reports estimate that around a quarter of US GM corn exports go to Mexico, and were worth some $19,000 million in 2022.

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Early in the year, **Mexico tempered** its 2020 decree to phase out the use of GM corn and glyphosate. A new decree was issued, setting the complete phase out of GM corn for most uses in food, and glyphosate use from March 31, 2024 – a two-month extension on the previous decree – and allowing certain continued uses of GM corn.

Until at least the 2024 deadline, the use of GM technology may continue for feed and for industrial food uses, the latter defined as those not involved in making flour or nixtamal, essentially for Mexico's staple food "tortillas". The decree potentially allows the indefinite use of GM maize for use in forage. In December 2020, Mexico issued a decree initiating a four-year phase-out of the uses of glyphosate herbicide and GM maize for human consumption and in feed in Mexico. That would have ended uses by the end of this month.

By March this year, competent authorities "will revoke and abstain from granting environmental release permits for GM maize", and the same will apply for authorisations of GM maize grain for most human consumption. The decree directs authorities to carry out acts "leading to the gradual replacement of GM maize for feed and industrial use for human consumption".

The decree instructs federal agencies to: revoke any and refrain from granting authorisations and permits for the import, production, distribution and use of glyphosate.

Clashes with US

The policy softening followed clashes with United States-Mexico-Canada Agreement (USMCA – successor trade deal to NAFTA) trade partner the US and offers some compromise that national commentators suggested may aid Mexico in other trade areas.

The US launched a **trade dispute** with Mexico under USMCA initiating a dispute settlement panel to counter the GM corn phase out. Canada joined the US in the dispute. The Mexican government **immediately rejected** US demands to modify its ongoing phase out of GM corn (maize) uses.

The US had already **launched dispute** settlement consultations with Mexico under the USMCA. Nevertheless, the Mexican government resisted moves by US opponents of its GM corn policy. Sub-secretary Víctor Suárez Carrera recently said that the Mexican government would not submit itself to actions against the decree such as what was then a prospective dispute settlement panel from the US. He insisted that the decree was a "firm commitment" of the Mexican government.

The glyphosate phase out is not included in discussions in the USMCA dispute panel.

CropLife Latin America's president told *Crop Science Market Reporting* that the Mexican government had launched a WTO action likely as a counter action. He believed that the commitment from the Mexican government is political and expected the issue to be a major one at re-election for this year's presidential vote.

Behind the scenes discussions saw MPs delay ratification of the decree orders, pending a "third party" impact assessment that was presented in the second half of last year. This led to some disputes between national and state governments in Mexico on the issues, including glyphosate's phase out. MPs had delayed the ratification of the decree orders, pending the "third party" impact assessment. Commentators speculated that the assessment could yet have an impact on state governor.

In May, the Mexican secretary of food self-sufficiency **denounced US demands** against the government's policy to phase out most GM corn uses and all glyphosate herbicide use.

In the first half of the year, Mexico **sought to halve** imports quotas on glyphosate as part of the phase out policy on the ai. The government's science and technology counsel, the Conacyt, recommended competent authorities halve import quotas last year as it had done for the previous two years. Reported glyphosate imports were dramatically down over the two previous years.

Parliamentary moves continued in Mexico to ban over 100 active ingredients, dubbed by MPs as highly hazardous pesticides (HHPs), disputed as such by others. The previous year, the lower house of Parliament approved regulatory reforms limiting the use of what the bill defines as highly hazardous pesticides. They passed to the Senate for first reading last year.

Early last year, the Mexican government claimed that the country's "agro-ecological transition" was progressing.

The CropLife leader said that key bills on HHPs were under way in Peru, Costa Rica and Panama as well.

Peru

The Peruvian Parliament issued draft legislation **seeking bans** pending risk assessments on several pesticide ais for use in agriculture, including glyphosate. Bill No 5630/2023 called for the prohibition of pesticides for agricultural use that posed grave risks to human health.

The legislation aimed "to ban the manufacture, commercialization, storage and use of conventional pesticides containing agrochemicals classified in WHO tables as generating risks and harm to health". It calls on the Peruvian Ministry of Agricultural Development's agricultural health service, the Senasa, to carry out risk assessments and determine whether bans should proceed on glyphosate, the fungicides, mancozeb and procymidone, and the insecticides, dinetofuran, fipronil and chlorfenapyr.

Argentina

An **Argentine province's** Parliament voted to phase out the sale and use of glyphosate. MPs of Argentina's most north-east province of Misiones voted to ban the herbicide across the province. The ban was scheduled to take effect in 2025. Misiones is among Argentina's smallest provinces.

The year started with a group of Argentine MPs pushing a bill to raise taxes on agrochemicals and fertilizers to fund "agro ecology", a general term encompassing biological controls and organic agriculture. The bill would create a new tax while reallocating the revenues towards a fund for biological controls and organic agriculture.

Drought was a persistent drag on the market. The Ministry of Agriculture extended the state of emergency for agriculture in two provinces by six months early in the year. The move extended provisions in Decree 3771 of the previous year. The extension for Chaco and Corrientes provinces ran until July 31. Similar moves came elsewhere, including in **Uruguay**.

Notable early news came from the competition watchdog in Argentina. The CNDC recommended the government approve Syngenta Crop Protection's deal to acquire Argentine seed business Nidera. It submitted its recommendation to the Secretariat of Trade in February, advising its acceptance of Syngenta's proposed moves to avoid over-concentration of supply.

Syngenta agreed to acquire **Nidera** from parent company Cofco International in 2017. Two years previously, the CNDC issued objections to the proposed acquisition, and called on the companies to take measures to mitigate the anticipated impacts. Proposals would see Nufarm seed business Nuseed Argentina acquire several Syngenta assets. The authority accepted their measures.

Later in the year, the national animal and plant health inspection service, the Senasa, issued **two regulations** covering agricultural use biological products. Resolution 1004/2023 covers the approval of commercially developed biological inputs, while Resolution 1003/2023 covers the registration of commercial small scale "bio-preparations" through family farms or "micro-SMEs".

Both regulations establish the requirements for registration and approval of biological products, evaluating efficacy, as well as environmental, human and animal health protections. The service says that the publications create two differentiated tools updating and adding registration procedures for crop protection and plant nutrition products, particularly "safety conditions in the manufacture and use of" such products by co-operatives and SMEs destined for use in the national market.

The major news in Argentina has yet to be fleshed out. The election of President Javier Milei late in the year garnered widespread support in agribusiness. Mr Milei promised tax cuts, an end to export duties and quotas on agricultural produce and the much vaunted and as yet unrealized Seed Law. The latter should produce deep deregulations.

Colombia

General **pesticide prices** in Colombia dipped in the month of April for the first time in almost three years . Overall, prices were down just 0.1%, but it was the first monthly retreat in 32 months. The decline was due to lower herbicide prices while several segments saw a continued uptick in prices.

Herbicide prices fell 0.6%, while fungicides were up by a similar amount and insecticides by 0.8%. Among other segments, prices rose by 1.2%, including the same increase for plant growth regulators (PGRs) and a near 1% drop for molluscicides.

Earlier in the year, the Colombian Ministry of Agriculture's agriculture and livestock agency, the ICA, sought an extended phase-out of the organophosphate insecticide, **chlorpyrifos**, with the Constitutional Court. That followed the latter's verdict determining the need to protect "the fundamental right to health of children in Colombia" with orders for suspension on the use and marketing of the insecticide. **Peru** soon followed suit with its own ban on the insecticide.

The government also issued a resolution to cancel **fipronil**-based product registrations for agricultural use, following another court ruling this time for advancing actions to protect pollinators.

In January, Colombia classified Argentine seed genetics business GDM's gene edited soybean technology as a **non-genetically modified** organism.

Late in the year, the Ministry of Agriculture launched an initiative aimed at boosting the production and use of biological inputs. The focus was to be on smallholder and co-operative farmers, including training in the manufacture of inputs such as living micro-organisms that feed the soil.

The development would see technicians from the Ministry touring the country to create a social and trained network for a transition to "acro-ecology".

Chile

The Chilean Ministry of Agriculture's agricultural and cattle service, the Sag, issued **three resolutions** seeking a switch towards biological crop protection for the country's agriculture. One of the resolutions was to prohibit the use of 14 pesticide active ingredients among 151 commercial products. The resolutions were signed in October.

The resolution to ban the manufacture, import, distribution, sale, handling and use of 14 ais included the acaricide/fungicide, binapacryl, the fungicide, captafol, the acaricide, chlorobenzilate, and the insecticide, ethylene dichloride (1,2-dichloroethane), among others. The Sag noted that the ais were listed in the Rotterdam Convention on Prior Informed Consent governing trade in pesticides listed as hazardous, and the Stockholm Convention on Persistent Organic Pollutants (POPs). The named four had no current product registrations in Chile.

The Sag noted that the resolution for authorization of natural extracts-based pesticides sought to establish a special regulatory framework for agrochemicals based on substances obtained from microbial, plant, animal and mineral origins, and such matter present in nature, that were applied at low rates, had short environmental persistence and with specificity making them "harmless" to people, animals and non-target organisms. The move was designed to boost the adoption of IPM programs.

The initiative supplemented other regulations that the Sag had issued on "more sustainable" products, such as regulations from 2019 on microbial pesticides, and in 2022 on semiochemicals.

Market

The global crop protection market was expected to have recorded a 1.8% decline in 2023 to $77,283 million at the ex-manufacturer level, excluding the impact of retail and distributor margins, according to preliminary analysis by S&P Global Commodity Insights' Crop Science team. That included a flat market for Latin America at some $22.1 billion.

A recovery in the Brazilian currency, the real, boosted market prospects. Farmers faced growing pressures from insect pests over the last year, particularly stink bugs (Halyomorpha halys), boll weevils (Anthonomus grandis) and corn leafhoppers (Dalbulus maidis). Soybean growers in Brazil gained earnings from higher production, while the opposite had reigned for Argentine corn growers harmed by the most severe droughts in 60 years.

GMOs

Approvals of GM crops maintained a healthy pace in the region last year. Chief among protagonists were Brazil and Argentina.

In Brazil, the technical biosafety commission, the CTNBio, recommended full approval for 13 GM crops for commercial use. They included five for cotton, including Bayer's short stature corn, three soybeans, three for eucalyptus, and one each for cotton and the world's first authorized GM wheat.

In Argentina, the authorities approved six GM crops, including three GM corn, two for soybeans and a GM cotton. Argentina had already approved Bioceres affiliate, Indear's, GM drought- and herbicide-tolerant HB4 (IND00412) wheat.

The **Paraguayan** Ministry of Agriculture followed suit with commercial authorization of HB4 wheat.

Early in the year, five countries of the southern agriculture council, CAS, backed the use of GM crops as positive for biosafety at the15th meeting of the Conference of the Parties to the UN Convention on Biological Diversity (COP 15) in Montreal. The governments of Argentina, Brazil, Chile, Paraguay and Uruguay expressed concern at what they viewed as "negative connotations" on the use of GM crops implied in "the biased use of certain concepts in COP 15 working documents".

All the CAS member states also promoted the use of new breeding technologies (NBTs) such as gene editing.

NBTs

Furthermore, late last year the **first gene edited potatoes** were about to be launched in Latin America. The potatoes had been developed by the Argentine national institute of agricultural technology (INTA) to control the enzymatic browning that occurs when potatoes are cut, peeled or subjected to the rigours of harvesting and transportation. The developers employed CRISPR-Cas9 gene editing technique to silence the gene responsible for the expression of the polyphenol oxidase enzyme, thereby hindering oxidation.

The Argentine authorities deemed the potato technology as not being genetically modified as it does not include DNA from a different species, a distinction defined under Argentine regulations. The technology is therefore exempt from regulations governing GMOs.

Colombia's classification of GDM's gene edited soybean technology as a non-GMO followed the 2022 similar approvals and categorization from Argentina and Brazil. The soybeans contain low presence of raffinose and stachyose sugars.

In April, the **Brazilian CTNBio** defined a drought-tolerant gene-edited soybean as conventional technology. The soybean had been developed by agricultural research corporation the Embrapa's soybean division, the Embrapa Soja, with the use of the CRISPR technique. The CTNBio concluded that the technology did not come under rules governing GMOs as it did not include DNA from a different species, a distinction defined under CTNBio Resolution No 16/2018.

CropLife Latin America told CSMR that Argentina had become a baseline national regulator, governing the new technology as conventional when no foreign DNA is edited into plants. "Others, such as Brazil, Paraguay and Guatemala, are mirroring this. However, most countries do not yet have regulations." That provided a lack of certainty for developers to bring technologies to the region. The head of the industry association highlighted Honduras as being at the vanguard of even Argentina and Brazil on regulations.

Honduras has approved a couple of gene edited events that are in trials, including what could become a critical gene edited banana.

** An annual review of regulatory and market developments in Brazil is available as a separate article.*

Asia review 2023: CP sector battled slump

09 January 2024

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Agrochemical markets in Asia witnessed continued regulatory headwinds for the cultivation of genetically modified crops, alongside a slew of reassessments for conventional active ingredients. An annual review of regulatory and market developments in **India** is available as a separate article.

Crop protection market growth

Amid severe channel de-stocking and adverse weather effects, the region's market is **estimated** to have declined by around 8% to some $23.1 billion in 2023, according to preliminary analysis by S&P Global Commodity Insights' Crop Science team. The decline would be comparatively worse than the global market, which is expected to fall by 1.8% to $77.3 billion.

The slump in Asia was compounded by weakness in Japan, where limited demand for pesticides was exacerbated by significant depreciation in the yen. Meanwhile, the Chinese rice market is expected to have declined, driven by lower product prices, a dip in rice commodity prices notwithstanding "favourable" area for the crop, as well as weakness in the national currency against the US dollar.

Glyphosate price slump

After experiencing the highs of 2022, the last year was a tough one for **Chinese glyphosate** manufacturers. After starting 2023 at a high of RMB 45,000 ($6,300 at the current rate) per metric ton, prices remained on a downward trend during the first half, hitting rock bottom in June. That was close to the cost of production, barely leaving any margins for producers.

Prices rebounded in July to around RMB 35,000 ($4,900), continuing the upwards trend in August, when they peaked at around RMB 38,000 ($5,320) per metric ton. The brief rally in prices was a result of a phased de-stocking, which occurred due to low production capacity utilization. That, and regained demand from South American markets drove production again, resulting in the consequent fall in prices, which went below RMB 30,000 ($4,200) in November.

Ex-factory prices fell to a low of about RMB 26,000 ($3,640) per metric ton by mid-December, which is close to the lowest price of RMB 24,000 ($3,360). The fall was attributed to increased stocks with producers amid depressed demand in November. As a result, producers in the provinces of Anhui, Sichuan, and Henan increased their factory maintenance periods to shore up prices, which were approaching the cost of production.

GMO approvals

China

Early in 2023, China **approved** the import of several GM crop varieties, including several products that had been awaiting approval for years. These included: two glyphosate-resistant alfalfa varieties from Bayer under its BAYGn.DE lineup; a Brazil-developed GM sugar cane; BASF's herbicide-resistant cotton; and Corteva's glyphosate-resistant canola, DP73496. China also approved the safety of three domestically developed GM

products, including insect- and glyphosate-resistant corn (maize) from Yuan Longping High-tech Agriculture and insect-resistant soybeans from Hangzhou Ruifeng.

In September, Chinese authorities reported **expanding** trials of GM corn and soybeans with an eye on accelerating their breeding and commercialization. The decision was followed by the nation registering 51 GM corn and soybean varieties, and, soon after, **approving** the production, sale and distribution of the GM seeds in some specific provinces from 26 domestic seed companies. The licenses were provided to Beijing Dabeinong Technology, Denghai Seed, Yuan Longping High-Tech Agriculture, and Syngenta-owned business China National Seed, among others operating in the major grain-producing provinces of Hebei, Liaoning, Jilin and Inner Mongolia.

Alongside the nods for GM seeds, regulators **issued** a safety certificate to Jinan-based Chinese biotechnology business Shandong Shunfeng Biotech's gene-edited, high-oleic acid soybeans. The development marked the first approval of its kind by the country involving a gene-edited crop and is valid until April 20, 2028. The soybean was developed by altering two of its genes for increased production of oleic acids.

Philippines

Compared with 2022, Philippines witnessed more regulatory hurdles for the commercial release of GM lines in food crops. In January, the country **harvested** over 100 metric tons of the GM vitamin-A enriched Golden Rice or Malusog Rice (GR2E), in 17 production sites across the nation. The country issued a biosafety permit for commercial cultivation of the rice line in **2021**, marking the first global approval for commercial cultivation of the GM rice event.

However, in April the Philippine Supreme Court **ordered** the suspension of the commercial release of GM Golden Rice and the GM borer-resistant *Bt* aubergines. The higher tribunal issued a "writ of Kalikasan" to that effect, which is designed to protect the constitutional right to a healthy environment. The decision followed a petition submitted by the agriculture group, Farmer-Scientist Partnership for Development (MASIPAG).

Oceania

In February, Australia **authorized** the commercial import and distribution of GM chrysanthemums modified for altered flower colour to blue and violet. The approval allows for cut flowers of the GM chrysanthemums to be sold in the country for ornamental use. However, the GM plants will not be grown in the country and will not be used in commercial food or feed. The move was followed by an experimental use permit (EUP) provided to Bayer for conducting trials on the GM herbicide-tolerant XtendFlex cotton until January 31 this year. XtendFlex cotton is tolerant to the herbicides, dicamba, glyphosate and glufosinate.

Meanwhile, New Zealand witnessed an expansion for research and development initiatives on GM and gene-edited plants through the government-owned research institute, AgResearch. The efforts will focus on including clover and endophytes in its high metabolizable energy (HME) ryegrass modified to have higher levels of lipids in its leaves by increasing the expression of two genes that are involved in lipid production and photosynthesis.

Indonesia

Meanwhile, Indonesia **approved** Argentine soybean development consortium Bioceres' (Rosario) GM drought- and herbicide-tolerant HB4 (IND00412) wheat for human consumption. The GM event contains the bar gene, which provides tolerance to glufosinate ammonium-based herbicides, and the HaHB4 gene, which gives hydric stress tolerance. In August, the nation's Ministry of Agriculture also **distributed** four metric tons of drought-

tolerant rice seed varieties in several provinces amid global fears regarding the effects of the El Niño weather system.

South Asia

The South Asian region saw two major updates. In August, Sri Lanka **eased** its GMO regulations through the amendment of the Food (Control of Import, Labelling, and Sale of Genetically Modified Foods) Regulations (2006). As per the amendment, food containing less than 0.9% of adventitious GM materials would be exempt from taking prior approval of the nation's food authority for importing and label requirements.

The same month, Bangladesh started the **commercial cultivation** of GM insect-resistant *Bt* cotton. The move followed the nation's Ministry of Agriculture releasing two varieties of the GM crop a week earlier for domestic cultivation. The cotton lines belong to India-based company JK Agri-Genetics and are resistant to *H armigera* as well as caterpillars.

Syngenta's IPO hurdles

In June, Syngenta Group's **application** for an initial public offering (IPO) on the main board of the Chinese Shanghai Stock Exchange passed a review by the bourse's listing committee. The planned offering still requires approval from the nation's securities watchdog, China Securities Regulatory Commission (CSRC).

The decision marked the first step towards a successful listing after multiple headwinds since the Group began preparing for the RMB 65 billion ($9.2 billion at the current rate) IPO on the Science and Technology Innovation Board of the Shanghai Stock Exchange (STAR Market) in **2021**. A month prior to the move, the business **withdrew** its application after the bourse had **cancelled** a review hearing.

The Group stated that it is a better fit on the main board of Shanghai Stock Exchange under its latest registration-based IPO scheme and that the listing will enable it to access a more diversified group of investors and be conducive for long-term value.

Conventional ai updates

China

China's Ministry of Agriculture **approved** five new ais last year, including Syngenta's fungicide/nematicide, cyclobutrifluram (trade-marked as Tymirium). Among the other four ais, three were biopesticides while the fourth was a pheromone. Cyclobutrifluram was approved for use on tomatoes for the control of root knot nematodes (*Meloidogyne* spp).

Meanwhile, the nation **invited** comments on a proposal to ban several pesticides. These included the organophosphate insecticide/acaricide, omethoate, the insecticide/nematicide, carbofuran, and the insecticides, methomyl and aldicarb. The government's draft notice proposed revocation of the ais' formulation registrations from December 1, 2023, while allowing existing stocks to be sold and used until December 1, 2025. The registrations can be maintained for export-only purposes.

Australia

In June, Australia **approved** the registration of Adama's herbicide, Sierra (saflufenacil). The herbicide is the first off-patent product based on saflufenacil, says the business, adding that the development marked the first such registration of the ai. Saflufenacil was developed by BASF and marketed under the brand name, Kixor.

Halfway through 2023, the Australian Pesticides and Veterinary Medicines Authority (APVMA) **suspended** the registration of some products containing the insecticide, dimethoate, used as a post-harvest dip for fruits with inedible peel following a **proposal** on the matter. The regulator reported that the maximum residue limits (MRLs) for dimethoate and its main degradation product, omethoate, had been exceeded in avocados and mangos despite application in accordance with the approved instructions for use as a post-harvest dip.

Later in the year, the APVMA **proposed** rescinding many registered uses for the organophosphate insecticide, chlorpyrifos. The reconsideration includes all existing approvals of ai, chemical products derived from the ai, and their associated labels.

The regulator also **updated** its guidelines for determining a pesticide's minor use approval soon after **issuing** minor crop use permits for several agrochemical ais. These include the fungicides, procymidone, proquinazid, metrafenone, and quinoxyfen, alongside the herbicide, metribuzin.

Other major updates from Australia came from three reports published by the Australian Bureau of Agricultural Resource Economics (ABARES). The first **reported** an increasing trend of research and development funding in Australia, while the other **suggested** that the country outperformed other major national producers in sustainable agriculture indices. The last **report** observed an increase in agricultural pest and weed management in the nation, demonstrating a rise in the level of commitment required by land managers to control pests and weeds.

New Zealand

In New Zealand, the Environmental Protection Authority (EPA) in February **released** a workplan for the reassessments of hazardous pesticides over the next three years. The plan included start dates for each reassessment, reasons for the exercise, and the existing hazardous substance approvals that may be affected.

The Authority explained that the aim of the workplan was to streamline the assessment process and increase transparency. This was one of the changes proposed by the EPA that was included in the country's HSNO (Hazardous Substances Assessments) Amendment Act, which came into effect on November 1, 2022.

The EPA also **postponed** its planned public hearing on the reassessment of the plant growth regulator (PGR), hydrogen cyanamide, to early 2024. "We understand some people will be disappointed with the decision to postpone the hearing, and we acknowledge that this process has taken much longer than anticipated," said the Authority, adding that the outcome is of "keen interest to many". The ai is commonly applied on kiwi fruits.

Later in the year, the EPA received a **request** for a reassessment of glyphosate from the Environmental Law Initiative (ELI). ELI stated that there was "significant new information" about the negative effects of the ai that warrants a reassessment. A decision-making committee will be considering information from the applicant alongside the EPA's research to decide whether there are grounds to reassess glyphosate.

A month later, the Authority **issued** an advisory notice for the use of weedkillers containing the herbicide, clopyralid. This included restrictions on disposing of sprayed plants and lawn clippings to avoid contamination.

The EPA also **sought** information on the usage of aquatic herbicides containing the ais: diquat dibromide, metsulfuron-methyl, haloxyfop-R-methyl, imazapyr isopropylamine, or triclopyr triethylamine. In September 2022, the regulator began its reassessment of the five ais following new information on their effects. The responses will be analyzed to prepare a reassessment application open for public submissions in 2024.

In December, the EPA **invited comments** on the initial risk assessment involving eight synthetic pyrethroid insecticides ahead of their regulatory review. The Authority noted that pyrethroid products were toxic to aquatic organisms, linger in the environment, and had the potential to accumulate in animals and humans.

APVMA's troubles

In 2023, the APVMA **outlined** its plans for the rest of the decade in a report published on its website. The 'APVMA strategy 2030' seeks to inform the Authority's future corporate plans and portfolio budgets, alongside themes and intended strategic outcomes. The Authority underlined its focus on improving the integration of regulatory bodies, alongside ensuring that the APVMA "remains robust and capable of carrying out the full scope of our regulatory functions", as suggested by two review reports on the matter.

The plan was devised amid a tumultuous year for the regulator, which faced serious **allegations** of misconduct levied by the Minister for Agriculture, Fisheries and Forestry, Murray Watt in February. As a result, APVMA chief executive officer Lisa Croft was put on a period of leave, with Nicola Hinder being appointed the interim CEO.

The APVMA **acknowledged** the allegations regarding the behaviour of a staff member following an independent review. Another report detailed additional allegations of misconduct, including potential breaches of the public service code of conduct and other potential breaches of the law.

That was not the end of the regulator's troubles, with industry association CropLife Australia in December **criticizing** the APVMA for failing to meet the statutory timeframes for the assessment of chemical products. The comments followed the regulator's lackluster performance since the second fiscal 2023 quarter ending December 2022.

CropLife noted that the APVMA's timeframe performance for major pesticide applications continued its "downward spiral" to 81% from March to June last year, falling short of the previous quarter mark of 86%. The report marked the fourth quarter in a row where on-time assessment had been below 90%, the industry body added.

Other highlights

In Sri Lanka, crop protection companies **decided** to reduce the prices of all herbicides and insecticides in the country by 20% with an eye on lowering production costs for the nation's farmers. Companies also agreed to grant up to 40% discounts on the prices of certain pesticides. The development followed a discussion between sectoral stakeholders and the country's Ministry of Agriculture, and aligned with factors such as lower herbicide and insecticide prices in global markets, strengthening of the national currency against the US dollar, and the government disbursing US dollars to meet the agriculture industry's import requirements.

Meanwhile, El Niño conditions in Indonesia last year resulted in the **loss** of 1.2 million metric tons of rice, alongside drought conditions affecting some 870,000 ha of agricultural land in the nation. The country decided to undertake "intensification programs" across 10 provinces to prepare up to 500,000 ha of farmland for rice cultivation to aid the production of some 3 million metric tons of unhulled rice.

The Crop Science team's assessment of how the El Niño weather system is stoking concerns over agricultural production can be read **here**.

India review 2023: Regulatory headwinds veer industry off course

09 January 2024

Crop protection players in India navigated a largely challenging business landscape in 2023. The year was marked by unfavourable regulatory interventions, as well as issues such as a sizeable inventory overhang, limited cashflow, and adverse weather conditions. These factors stoked fears of a downturn, with the industry awaiting financial results of the third fiscal quarter to arrive at projections for the 2024-25 financial year and adopt corrective measures.

On the other hand, positive developments were reported for plant breeding approaches such as gene editing, while India's perplexing outlook on genetically modified crops showed little signs easing.

Getty Images

An annual review of regulatory and market developments in the rest of Asia is available as a **separate article**.

Pesticide bans

Among the most notable developments during the year was the **implementation** of a ban on the use of four insecticides – monocrotophos, dicofol, dinocap and methomyl – as part of India's Insecticides (Prohibition) Order 2023. Communicated in October, the decision led to the immediate cancellation of registration certificates, as well as permissions for the sale and distribution of dicofol, dinocap, and methomyl. Monocrotophos, on the other hand, was placed under a year-long grace period, upon the expiry of which it shall be withdrawn from the market.

While growers utilizing monocrotophos in their operations were allowed to use solutions based on the ai for a year as they transition to using alternative insecticides, no new registrations are to be granted to soluble concentrate formulations containing 36% concentration of the active ingredient. Existing registrations of such offerings are to be cancelled upon the expiry of the one-year deadline.

The sales of 36% concentrated monocrotophos solutions, however, can be undertaken until the clearance of stocks, which must be disposed of by their labelled expiry dates. Other offerings based on the ai can have their approvals extended after the completion of a year due to the "non-availability of effective control against certain insect pests in specific crops".

Besides potentially exposing a number of crops to pest attacks that could not be suppressed by alternative means, industry watchers anticipated the development upsetting prevalent pest management approaches leveraging the affected pesticides.

The widely used insecticides form part of a group of 27 pesticides that India's Ministry of Agriculture and Farmers' Welfare proposed to ban **in 2020**. In fact, the recommendation had caused **widespread consternation** within the nation's crop protection industry, which at that time was braving repercussions from national lockdowns amid the Covid-19 pandemic. The proposal sought to ban pesticides including the insecticides/acaricides acephate, benfuracarb, carbofuran, chlorpyrifos, deltamethrin, dimethoate, malathion, quinalphos and thiodicarb; the herbicides, 2,4-D, atrazine, butachlor, diuron, oxyfluorfen, pendimethalin and sulfosulfuron; and the fungicides, captan, carbendazim, dinocap, mancozeb, thiophanate-methyl, thiram, zineb and ziram.

Restricting other ais

Alongside the four embargoed ais, the government also restricted five other insecticides – chlorpyrifos, carbofuran, malathion, quinalphos and dimethoate – as well as the fungicide, mancozeb, and the herbicide, oxyfluorfen. The curbs include the removal of a host of crops from the labelled usage of these pesticides, with the authorities requiring their registrants to submit the registration certificates of the ais as well as their labels and leaflets within six months for the deletion of the flagged uses.

Ongoing lawsuits

The regulatory action came amid a host of public interest litigations (PILs) against the government's decision to cut short the initial list of 27 pesticides facing bans to just three.

In 2023, India's Supreme Court hauled up the government for establishing various expert panels and not implementing the plans communicated through its 2020 plan, adding: "It seems that every time you have an adverse report from one committee, you constituted a new committee." However, the authorities blamed the plaintiffs for the quagmire, stressing that they "do not like the science nor the procedure, and hence they are complaining".

Environmentalist groups, on the other hand, alleged that the government had given in to lobbying from agrochemical players, who were likely to be impacted if such a ban were to have been imposed.

NBTs gain ground

Following the **relaxation of guidelines** involving products derived through two gene editing techniques – site directed nuclease (SDN)-1 and SDN-2 – India is reportedly leveraging the new breeding techniques (NBTs) to breed new crop varieties and develop traits such as disease resistance and drought tolerance.

The year saw the **development** of a gene-edited mustard that is less pungent, besides being resistant to the fungal pathogen, *Sclerotinia sclerotiorum*, and pests including cutworms (*Spodoptera litura*). It is based on the high-yielding Varuna variety and was developed using CRISPR-Cas9 gene editing technology. The mustard variety has mutations in 10 of the 12 glucosinolate transporter (GTR) genes within the plant, rendering the encoded proteins within these genes non-functional. The proteins are responsible for the transport of glucosinolates to the seeds.

Deadlock over GM crops

However, the longstanding confusion over India's stance on genetically modified crops deepened in 2023, with the Supreme Court **rejecting** the government's proposal to commence planting of a GM mustard line, Dhara Mustard Hybrid 11 (DMH-11), for research purposes. A plea to assess the crop ahead of the mustard sowing season was denied citing concerns over its potential to damage the environment.

Commenting on plaintiffs' charges that the government's favourable stance on DMH-11 poses the "specter of irreversible contamination" of the country's mustard crops, the Court noted that the propagation of the GM crop "cannot be allowed" as the "environmental harm cannot be reversed". The authorities defended the steps, noting that there were "huge stakes involved" as the release of DMH-11 would help the nation reduce its dependence on edible oil imports, besides aiding in achieving food security targets.

Furthermore, the government argued that an unfavourable order would "put us back by many years", highlighting that the GM mustard had been derived following 12 years of research.

The Court's observation marked the latest development in a **legal imbroglio** that ensued upon the nation's biotechnology regulatory body, the Genetic Engineering Appraisal Committee (GEAC), **approving** the

environmental release and subsequent evaluation and propagation of three transgenic mustard lines – Bn 3.6 containing barnase and bar genes, Modbs 2.99, containing barstar and bar genes, and the high-yielding DMH-11 – in October 2022.

The mustard event in question has been developed by the Indian University of Delhi's Centre for Genetic Manipulation of Crop Plants (CGMCP), and the GEAC approval is valid for four years.

Vacillating approach

India's regulations governing GM crops are largely considered vague and ambiguous, and the authorities have often issued contradictory signals. The country has only ever permitted the entry of GM insect-resistant *Bt* cotton, with the government clearing Bayer legacy business Monsanto's Bollgard I for cultivation in 2002. While efforts were undertaken to commercialize *Bt* brinjals (aubergines) and GM mustard in the past, formal clearances were never accorded to either crop.

Nevertheless, the Indian Council of Agricultural Research (ICAR), in 2022, **issued an update** on the country's pursuits in the GM crops space. It revealed that institutes under the Council were "deeply engaged" in the development of 13 GM crops – cotton, papayas, eggplants (aubergines), bananas, chickpeas, pigeonpeas, potatoes, sorghum, brassica vegetables, rice, flax, wheat and sugar cane – with an eye on designing traits such as biotic and abiotic stress tolerance, yield, and quality improvement.

A *Crop Science Market Reporting* analysis of the GM crop situation in India can be read **here**.

Contentious legislation

A proposal from authorities in the Indian state of Maharashtra to **amend** the state's pesticide laws drew sharp criticism from the nation's crop protection industry. Controversy erupted when the state, a major producer of crops such as cotton, sugar cane, and oilseeds, among others, introduced four bills in the legislature seeking to introduce "special" punitive measures against industry players in case of issues arising out of the use of their pesticides, besides re-interpreting key national laws and revising their implementation in the region.

Of the four amendments, a proposal to revise the name of the state's law against persons engaged in "dangerous activities", in particular, piqued resentment among sectoral stakeholders. The state government suggested adding "Fertiliser Offenders, Insecticide Offenders, [and] Seed Offenders" to the name of the existing law, which, in its original form, reads "Maharashtra Prevention of Dangerous Activities of Slumlords, Bootleggers, Drug-offenders, Dangerous persons, Video Pirates, Sand Smugglers and Persons engaged in Black marketing of Essential Commodities Act, 1981".

The bill also noted that persons accused under the revised provisions would be prosecuted under section 420 of the Indian Penal Code, which focuses on cheating.

A joint representation of crop protection industry consortiums rejected calls for classifying the industry in the "same league as bootleggers, drug offenders, dangerous persons, sand smugglers and black marketeers", adding that the amendments "grant a free run to the law enforcers and puts manufacturers and sellers at their peril, with likely possibilities of harassment".

A communication from agrochemical industry association CropLife India stressed that the legal provisions, if finalized, would make it "virtually impossible" for genuine crop protection businesses to function in Maharashtra. It also observed that the development would prevent firms from nominating anyone as their "responsible person" in the state over fears of being taken into custody without recourse to bail even for minor offenses.

Projected revenue drop

The year also saw S&P Global's Indian ratings subsidiary, CRISIL Ratings, **projecting** the first decadal fall in the annual earnings of firms in the Indian crop protection sector. It anticipated the consolidated revenues of companies during the ongoing 2023-24 fiscal year tapering off around 3%, highlighting that the estimates are based on an assessment of various factors. These included a global decline in agrochemical prices, dull export demand, and a prevalent deficiency in reservoir levels triggered by erratic monsoon, which has cast a shadow on the rabi (winter) growing season.

The analysis covered 48 businesses, with the ratings agency attributing around 90% of the Indian agrochemical industry's revenues to these entities.

CRISIL noted that a "supply deluge" of low-priced products from China had translated into waning agrochemical prices in India, while exports, which fetched some 53% of sectoral revenues, were likely to be hit as global businesses tried to liquidate an inventory glut. A further blow may be dealt in the form of reduced uptake of crop protection solutions during the rabi season, with the report estimating that the period accounted for around 35% of the country's pesticide usage.

These effects may drag down the industry's operating margins by 400-450 basis points to a "decadal low" of 10-11%, said CRISIL, underlining that lower volumes and realizations could upset cash accruals to an even greater extent.

While capacity expansion projects in the Indian crop protection space would suffer as a result of the bearish sentiments, the CRISIL highlighted that lowering expenses on capacity expansion would reduce the industry's dependence on external debt. "With sectoral challenges constraining cash flows, prudence in capital spend is imperative," it observed, adding that the ratio of external debt and total-debt-to-EBITDA (earnings before interest, tax, depreciation and amortization) may moderate while still "remain[ing] comfortable", reducing chances of the industry sinking into losses.

CRISIL noted that "healthy balance sheets for most, should provide sufficient headroom to withstand business pressures."

**Crop Science Market Reporting* is a part of S&P Global's Commodity Insights division.

Brazil 2023 review: Key points in new agchem law hit by vetoes

10 January 2024

Brazil's President, Luiz Inácio Lula da Silva, hit the long-anticipated hopes of much of Brazilian agribusiness when he vetoed key measures late last year in the country's new agrochemical law. The government made the **dramatic intervention** in the final week of 2023. Legislation on the matter had been stuck in Parliament for over two decades under different draft bills, before gaining **Senate approval** as PL 1459/2022.

Getty images

The new law, **Lei 14785/2023**, was published in the official gazette. The presidential sanction to radical reforms to the country's agrochemical law included vetoes on measures that the sector has seen as crucial. The bill sought to make

pesticide registration and commercialization rules "more flexible". It sought to establish rules for control and inspection of agrochemical products with the potential to harm human and animal health, as well as the environment.

In most cases, the President cited the unconstitutionality of the articles for his vetoes.

A key veto from the President was against the move to center analysis and inspection of agrochemicals at the Ministry of Agriculture. This would have replaced the existing protocols in which the Ministry, the national health surveillance agency, the Anvisa, and the environmental agency, the Ibama, are each required to approve a product before its final registration. According to the government, if the original text had been approved, the Ibama and Anvisa would have only acted as a "mere complement" to the Ministry of Agriculture – which would have ultimately had the Ministry acting exclusively.

The President's full sanction would have brought significantly shortened processing times. Measures that survived the President's red pen included setting a limit of 30 days for trial registrations and two years for decisions on a new agrochemical product or active ingredient. Formulated and generic product approvals have set deadlines of 12 months. Furthermore, products intended for trials may benefit from the issuance of a temporary special registration (RET).

The new law including the vetoes of the President will go for consideration and potential assent of both houses of Parliament.

The bill gained approval in the lower house, the Chamber of Deputies, some two years' ago. It would replace the 1989 Pesticide Law 7802/89 and cover pesticide testing, field trials, production, marketing, imports, exports, packaging, storage, waste management and inspections.

Supreme Court on Decree

The Brazilian federal Supreme Court (STF) **overturned** several provisions of Decree 10.833/2021, governing the production, research and registration of pesticides. Among regulations that it ruled as unconstitutional were those that make quality control of pesticides and the approval of discarded food more flexible.

The majority decision was taken in a trial (ADPF 910) brought by the governing center left Workers Party (PT). The provisions were declared unconstitutional in the wording of Decree 10.833/2021 upon Decree 4.074/2002, which regulates the Pesticides Law 7,802/1989.

The Court ruled as unconstitutional, regulations determining that pesticide registration holders "only keep" reports on pesticide impurities that are relevant from toxicological and environmental perspectives, and holding that the government be responsible for monitoring product quality.

The verdict also determined that a product with multiple ais could only be considered an equivalent product for registration if all of them had already been registered. It further ruled on the assessment of products' carcinogenic characteristics. The criteria covering studies and evidence for the classification of pesticides as carcinogens, or those causing hormonal disorders, harm to the reproductive system or other dangers to humans must be those accepted by recognized national or international technical and scientific institutions, it ruled.

The previous government issued Decree No 10.833 to replace Decree 4.074 of 2002, altering rules on research, registration, use, import and export of agrochemicals. This newer decree was intended to harmonize Brazil with other countries in some aspects, such as Global Harmonized System (GHS) for classification and labelling adoption. The Decree also sought to center pesticide assessments at the Ministry of Agriculture.

The three Brazilian competent authorities on pesticide approvals issued regulations to accelerate pesticide **registration applications**. The Ministry of Agriculture, the Anvisa, and the Ibama, published two joint ordinances, the stated aims of which were to optimize procedures and available human resources for technical evaluations of product registrations.

Joint Ordinance SDA/Mapa - Ibama - Anvisa **No 2/2023** set guidelines for applications of changes in the registration of pesticides regarding the inclusion or exclusion of registered technical products or pre-mixtures, manufacturing and packaging. The standard aims to direct administrative procedures and human resources to evaluations that require technical analysis and accelerate them.

Joint Ordinance SDA/Mapa - Ibama - Anvisa **No 3/2023** established procedures for distribution of pending registrations of equivalent technical products, pre-mixtures and formulated pesticide products, in compliance with Decree No 10.833/2021. The Decree stipulates that the processes filed before their expiration would have a four-year analysis deadline.

Declining market

Major agrochemical companies reported especially steep sales declines in Brazil and more widely in Latin America. Elevated stock levels in the distribution channels from 2022 to 2023, a big decline in prices, especially among unpatented and high-volume products, and a postponement in purchases by farmers were all behind the weakening market.

Corteva, for example, noted several slowing dynamics in Brazil. Those included: a significant delay in orders due to just-in-time farmer purchases on plantings and crop protection applications, as well as tighter farmer margins largely driven by "macro" factors, including inflation, interest and exchange rates, and record production during the 2022/2023 crop season; ongoing channel inventory de-stocking in Brazil's agrochemicals, as well as pricing and volume pressures in agrochemicals associated with elevated generic imports; and lower fourth quarter seed deliveries impacted by a lower summer corn (maize) planted area and potentially delayed and reduced safrinha (second corn season) planted area for the 2023/2024 crop season. All these factors impacted sales, the company said.

The reduced profitability for farmers due to falling agricultural commodity prices in the national and global markets and cost pressures incentivized growers to use existing inventories while distributors reduced stocks, impacting the crop protection sector.

Biologicals bill

The Brazilian Senate's environment select committee approved a draft bill seeking to regulate biological agricultural inputs such as **biopesticides** through Bill PL 3668/2021. The Bill had been delayed by over a year at the select committee stage.

Biological inputs have been framed in legislation under the umbrella term, pesticides. The legislation would establish a distinction in relation to other pesticides and regulate the production, registration, marketing, use, waste disposal, inspection, monitoring, trials and production incentives for agricultural biological inputs.

The Bill is seen as a competitor to a **similar bill** that passed the previous year in the Chamber of Deputies' constitution and justice select committee. There are moves to combine the bills.

The text distinguishes between three types of biologicals producer. Those are: commercial bio-factories or commercial producers; on-farm biologicals production; and "production units", taking into account the purpose of the biological input (such as own or commercial use), the scale of production, and the risk to the

environment. Places that produce or import biological inputs for commercial purposes are to be called "commercial bio-factories or producers". The Bill also defines those seeking own use of biological products. They include "on farm" bio-factories, in which the multiplication of micro-organisms occurs on a farm or rural property where it would be used as a biological input.

The Bill also recognizes the "bio-input production units", which are for own use as well. They use naturally occurring organisms with the potential for complementary use of other products. The text relates this category to smallholder farms.

Microbiological products

Brazil's competent authorities on pesticide registrations had earlier published new rules governing the approval of biological crop protection products. Those came in May in a **joint regulation** from the Ministry of Agriculture, the environmental agency, the Ibama, and the Anvisa, that set procedures to be adopted for the registration of microbiological products used in pest control or as defoliants, desiccants, stimulators and growth inhibitors, the Ministry reports. Joint Ordinance SDA/Mapa (Ministry of Agriculture) – Ibama – Anvisa **No 1/2023** replaced Joint normative instruction No 3/2006.

The ordinance aimed to adapt the national legislation to the innovations that have emerged in recent times. Those included allowing the registration of "inactivated" micro-organisms, which was previously allowed only for living micro-organisms.

Subsequently, the authorities created a **subject code** – 5141 - for microbiological product registration applications to be included in the simplified approval process for biological crop protection products. The Anvisa says that the move is to expedite processes.

The Brazilian Ministry of Agriculture's crop protection office, the DSV, **approved 90** "low impact" crop protection products in 2023. That was well below the previous year's record of 136, but within touching distance of the previous record of 95 set in 2020. The 90 were among 365 approved formulated products.

Self-regulation

Early in the year, the outgoing President, Jair Bolsonaro, signed a bill creating **self-regulatory** controls in several agriculture sectors. The legislation set procedures for the creation and obligatory implementation of monitoring systems for auto-control of production processes in 18 regulated sectors of agriculture, including crop protection. The state would still have the power and right to exercise full control.

Companies that join the program will have a series of incentives, which should reduce bureaucratic burdens compared with the old system. The size of fines is being updated to deter irregularities and non-compliance with regulations.

Veto own use

The then-President vetoed sections of the bill that dealt with the exemption of registration of agricultural inputs manufactured by growers for own use, and that sought to attribute to the Ministry of Agriculture, the definition of inputs that would not have registration exemptions, rating the procedures "unfeasible".

In November, the Anvisa issued **four guidelines** for toxicological evaluation of pesticides. The guidelines numbered 66-69 refer respectively to: mutagenic potential, reproductive toxicity, carcinogenic potential and neurotoxicity.

The Anvisa said that the guides aimed to make the toxicological evaluation criteria more transparent, especially during the re-evaluation process. The guides are already in force, but public consultations remain open until April 15, 2024.

Ais in crosshairs

In the final quarter, the Ibama set a public comment period on its environmental risk assessment of the neonicotinoid insecticide, **thiamethoxam**.

The previous year, a Brazilian federal court set a deadline for a reassessment of thiamethoxam by the Ibama within six months. That order demanded assessments for two other insecticide ais: the neonicotinoid, clothianidin, and 12 months for the phenylpyrazole insecticide, fipronil. The agency opened reviews on the first two some nine years ago.

The Ibama report noted that the study sought means to protect pollinating insects and their biodiversity, and ensure the ecosystem services provided by them, including the pollination service, the production of colony products (honey, propolis, wax etc) and the provision of genetic resources.

The use of thiamethoxam is authorized on 35 crops in Brazil.

Tests found acceptable risks for many uses. However, in the case of foliar applications on sunflowers, for seed treatments on sunflowers and soybeans, and for soil applications on coffee and melons, the measured risks could not be ruled out and tests were to be raised to field studies of pesticide use under Brazilian conditions and the effects at colony level.

The Ibama report notes that the study sought means to protect pollinating insects and their biodiversity.

The preliminary evaluation carried out by Ibama in 2014, considering the approved scenarios, indicated a potential risk for all uses. The agency issued a precautionary ban in 2012 on the aerial application of products based on thiamethoxam and the three insecticides, only for the Ministry of Agriculture to override that with the issue of exceptional use on various crops. In 2015, the Ibama and the SDA, imposed bans on thiamethoxam, imidacloprid and clothianidin, as well as on fipronil, until the conclusion of the Ibama's reassessment of the ais. Emergency approvals have since allowed restricted uses, while the agency has issued use restrictions on imidacloprid.

At the close of the year, the Ibama suspended foliar applications of fipronil, citing the precautionary principle following results of parts of the reassessment on the insecticide.

The Brazilian public labour prosecutor office (MPT) applied for a court order to ban the use of the herbicide, **atrazine**, late in the year. The prosecutors sought provisional cancellation of approvals issued by the Anvisa, for the production, export, import, commercialization and use of atrazine-based products. Atrazine was Brazil's fifth highest selling agrochemical ai by volume in 2020.

GMO adoption

Brazil is the second-largest grower of genetically modified crops with near saturation adoption for some major crops, according to a USDA Foreign Agriculture Service (FAS) report. Adoption rates for GM soybeans and cotton reached 99%, and for GM corn (maize), some 95%. The FAS cites its regional affiliate, FAS Brasilia, estimating that 68 million ha were planted with GM traits in the 2022/23 campaign. The Service further reports that some 105 GM events across seven crops, including beans, corn (maize), cotton, eucalyptus, soybeans, sugar cane and wheat have been approved in the country.

Of several GM crops in the approvals pipeline, the most important are potatoes, papayas, rice and citrus fruits, the FAS notes. Most of these are in the early stages of development and approval.

Earlier this year, the Brazilian national technical commission for biosafety, the CTNBio, approved the commercial planting and cultivation of Argentine soybean development consortium Bioceres' (Rosario) **HB4 (IND00412) wheat**.

Rising rust incidence and weed resistance

The incidence of Asian **soybean rust** (*Phakopsora pachyrhizi*) in Brazil trebled for the new harvest season late last year against the average of the previous five years. A report showed a 234% rise in such occurrences this season until December 20 against the previous average at the same stage of the season.

Asian soybean rust is the major pest or disease concern in Brazilian agriculture. The cost of protecting against the disease has repeatedly topped $2,000 million a year with many reports claiming that potential losses can amount to 90% of the crop.

Brazilian researchers detected **resistance to glyphosate** herbicide from beggar ticks (*Bidens subalternans*), a common South American weed. The country followed Paraguay, which was the first to have detected *B subalternans'* resistance to glyphosate in 2018. Populations of *B subalternans* resistant to acetolactate synthase (ALS) inhibitor herbicides were detected in Brazil some 30 years ago.

A government agency identified increased incidence of a **ryegrass resistance** to herbicides in Brazil. The agricultural research corporation, the Embrapa's, wheat division, Embrapa Trigo, found increased cases of Italian ryegrass (*Lolium multiflorum*) resistance to acetyl CoA carboxylase (ACCase) inhibitor herbicides.

** An annual review of regulatory and market developments in the **rest of Latin America** is available as a separate article.*

UPL to buy Corteva's mancozeb business in many markets

10 January 2024

UPL has agreed to acquire Corteva Agriscience's fungicide business involving standalone formulations of mancozeb in markets outside China, the EU, Japan and South Korea. The deal covers all related data, registrations and trademarks, besides the Dithane brand, and a license to use the latter's Rainshield technology, which facilitates crop protection activities in wet weather conditions. Corteva is to retain the ownership of all of its pre-mixed mancozeb-based formulations, as well as its manufacturing and formulation facilities.

Getty Images

Christina Coen, the chief marketing officer of UPL Corporation, which houses UPL's global crop protection business outside India, rates the development as a "meaningful milestone". The company anticipates the acquisition strengthening its position in the multi-site fungicide segment.

The transaction is likely to close in the first quarter of the 2024-25 fiscal year upon receipt of regulatory clearances.

Mancozeb is the fourth-highest selling fungicide globally, with sales of a little over $950 million. Corteva has been the market leader with its Dithane brand being the most established and recognizable name for many decades. UPL is among the market leaders in mancozeb and the move further solidifies its position.

In 2021, Chinese company Limin Chemical **acquired** Corteva's fungicide business in China, including Dithane M-45. Limin **appointed** Syngenta China as its exclusive distributor in China for the brand.

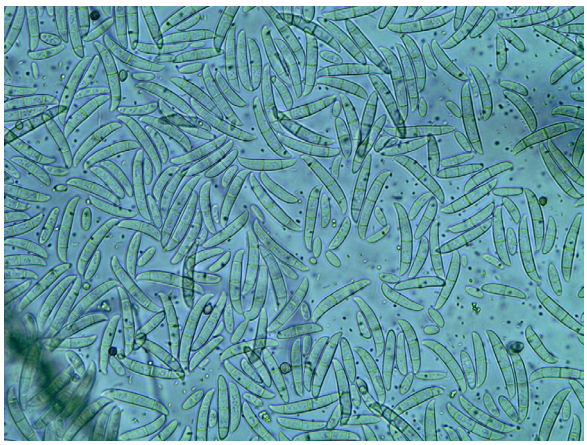
In 2012, Indian company Indofil **bought** Corteva legacy company Dow AgroSciences' Dithane business in Europe. But in December 2020, the EU **decided** to ban the fungicide.

Mancozeb was also **among** the 27 pesticides proposed for a ban by the Indian government in 2020. Last year, an order was issued to **restrict** the fungicide's uses, thereby removing a host of crops from its labelled usage.

Gowan acquires global rights to cyromazine from Syngenta

11 January 2024

US agrochemical company Gowan (Yuma, Arizona) has acquired global rights to the insecticidal active ingredient, cyromazine, from Syngenta Crop Protection. The deal covers related intellectual property, registrations, and product labels, besides trademarks including Trimark and Lepicron. Offerings under the Citation portfolio for use on ornamental crops are not a part of the arrangement.



Getty Images

Gowan notes that it will work alongside Syngenta over the next several months to facilitate the transition and maintain customer service in all geographies.

Cyromazine functions as an insect growth regulator for dipteran pests by acting as a moulting disruptor. In Canada, the nation's Pest Management Regulatory Agency (PMRA) **proposed** to end most uses of cyromazine in 2020. The following year, it went on to cancel the ai's uses on celery, certain leafy vegetables, and ornamental plants grown for the production of cut flowers.

Brazil's Ibama suspends foliar uses of fipronil

11 January 2024

The Brazilian environmental agency, the Ibama, has suspended foliar and aerial applications of products based on the phenylpyrazole insecticide, fipronil. Soil and direct-to-plant applications remain approved.

Shutterstock images

The agency cites the "precautionary principle" to protect pollinators for its move. The suspension will last until the agency concludes its reassessment of the insecticide. A **communiqué** was issued in the official gazette late last month.

Fipronil has been under an **Ibama reassessment** since September 2022. Studies so far carried out have indicated potential unacceptable environmental risk factors for all approved foliar application products for bees due to spray drift, the Ibama notes.

The Ibama justifies the move, saying that the "protection of the environment is gained by the principles of precaution and prevention occurs through the implementation of measures that can prevent the occurrence of harm".

Warning labels

Fipronil-based product registrations have 90 days from the publication of the communiqué to publish a supplementary leaflet, label or other effective means with the warning phrase: "This product is toxic to bees. Aerial application is not allowed. Foliar spraying not directed to soil or plants, that is, applications in total area, is not allowed. Do not apply this product in flowering season, either immediately before flowering or when bee visitation is observed in the crop. Failure to comply with these determinations constitutes an environmental crime, subject to appropriate penalties and without prejudice to other responsibilities."

Brazilian timeline

The Ibama issued a precautionary ban in 2012 on the aerial application of products based on fipronil and three neonicotinoid insecticides also slated for reassessments, only for the Ministry of Agriculture to override that with the issue of **exceptional use** approvals on various crops.

In 2015, the Ibama and the Ministry's plant health office, the SDA, imposed bans on the neonicotinoids, imidacloprid, thiamethoxam and clothianidin, and on fipronil, until the conclusion of the Ibama's reassessment of the ais over bee health concerns. Emergency approvals have allowed restricted uses.

Global restrictions

The **Argentine** national plant and animal health inspection service, the Senasa, ended approvals of suspension concentrate and dispersible granule formulation fipronil-based insecticides last year. The service cancelled registrations in August following a phase out running from 2021. It cited the health and protection of bees and other pollinators for the move.

Earlier last year, **Colombia** set its own phase out of fipronil. The Ministry of Agriculture's agriculture and livestock agency, the ICA, issued Resolution 740, ordering: an immediate ban on imports of fipronil ai; the cancellation of fipronil-based product registrations for agricultural use; and a period of 12 months to discuss replacement alternatives and the use up of existing inventories of products marketed in the country. The motive for the ban was again for the safety of bees and other pollinators.

In 2022, The **Australian** Pesticides and Veterinary Medicines Authority (APVMA) expanded the scope of its review for fipronil. This would allow the agency to reassess the product's potential residues and trade risks, along with reconsidering whether existing label directions were adequate. A year earlier, **Vietnam** cancelled all fipronil registrations.

In 2018, the General Court of the European Court of Justice ruled that the EU use suspension placed on fipronil were not legally valid. The suspension in 2013 was based on assessment governing the ai and three other neonicotinoid insecticides by the European Food Safety Authority (EFSA) identifying their risks to bees. The Court annulled some of the fipronil restrictions because they had been imposed without a prior impact assessment. Its conclusion related to a lawsuit from **BASF**.

The fipronil measures restricted use of the ai in the EU to crops in greenhouses and to leeks, onions, shallots and Brassica vegetables intended to be harvested before flowering. They also prohibited use of treated seeds of other crops. The crop-specific restrictions were annulled. However, the Court dismissed BASF's arguments with regard to the ban on treated seeds of other crops.

Almost a decade ago, **Uruguay** restricted the use of fipronil-based insecticidal seed treatments on rice, again citing to toxicity to bees.

Cibus/Interoc ink Latin American HT rice deal

12 January 2024

US technology company Cibus (San Diego, California) has entered into a collaboration with Peruvian company Custer Corporation's agricultural inputs subsidiary, Interoc (Lima), to introduce two herbicide tolerance traits for rice in Latin America. The US business will provide Interoc traits for its rice seed genetics starting with the herbicide tolerance technology.

Getty images

The collaboration will encompass herbicide tolerance traits to support existing needs in terms of weed and resistance management in a region increasingly impacted by resistant weeds, including weedy rice, the companies say.

Cibus's senior director of rice business and industry affairs, Martin Poveda, welcomes the deal. "We're excited to partner with leaders like Interoc and work together to solve some of the most pressing challenges in rice production in Latin America today." Fernando de la Puente, corporate vice-president of Interoc echoes the sentiment, saying the deal would progress its goal of combining its "novel elite genetics … with [the] latest rice technologies" for Latin American rice growers.

China bans four insecticides

11 January 2024

The Chinese Ministry of Agriculture and Rural Affairs has decided to ban the use of four insecticides. They are: the organophosphate insecticide/acaricide, omethoate; the insecticide/nematicide, carbofuran; and the insecticides, methomyl and aldicarb. The Ministry had **invited comments** for the proposal to ban the active ingredients last year.

The registration for the end-use formulations of the four insecticides will be revoked on June 1 this year. Meanwhile, existing stocks of products can be sold and used until June 1, 2026. The Ministry adds that producers of the ais can amend their registrations for export-only purposes.

Furthermore, carbofuran and methomyl can be continued to be produced as precursor materials for the insecticides, benfuracarb, carbosulfan, and thiodicarb, and circulated to downstream factories.

Biobest raises €75 million

09 January 2024

Belgian biological pest control business Biobest (Westerlo) has raised funding worth €75 million ($82.8 million at the current rate). The capital will be used for the company's **acquisition** of Brazilian company Biotrop Soluções Biológica. Biobest will initially purchase 85% of Biotrop.

The investment was provided by UK-based asset management firm M&G Investments' £5 billion ($5.5 billion) "purpose-led flexible private assets strategy", M&G Catalyst. The business explains that the capital is part of the fund's ambition to invest in companies that focus on regenerative practices.

Biobest chief executive officer Jean-Marc Vandoorne welcomes the decision, describing the funding as a "landmark transaction" for the company. "Clearly aligning with M&G's Catalyst strategy, this milestone investment allows for Biobest to expand in this fast-developing domain, driving sustainability and profits," he says.

Bayer makes leadership appointments

11 January 2024

Bayer's Crop Science division is making a series of regional and global leadership appointments. *Brian Naber* is to become commercial lead for the North America business region, replacing the retiring Jackie Applegate. Current senior representative and country division head in Brazil, *Malu Nachreiner*, is to succeed Brian Naber as commercial lead for the Asia Pacific region. Both changes become effective March 1, 2024.

As of February 1, *Oliver Rittgen* will serve as the division's chief financial officer following Kelly Gast, who retired after almost 30 years at the company. Mr Rittgen moves from his same role at Bayer's Consumer Health division.

Sascha Israel has become head of product supply. He replaces Dirk Backhaus, who has retired after 27 years with Bayer. *Amanda McClerren* takes over from Mr Israel as chief information officer, head of digital transformation and information technology. Meanwhile, *Jessica Christiansen* is taking over the role of head of Crop Science communications from Tom Armitage. She previously led the division's sustainability and business stewardship team. The appointments of Mr Israel, Ms McClerren and Ms Christiansen have immediate effect.

Agrovista acquires UK turf agronomy services biz

11 January 2024

UK agrochemical company Agrovista has acquired sports turf agronomy services business Advance Grass Solutions (AGS – Reading, Berkshire). The deal strengthens the former's specialist amenity division Agrovista Amenity's position as a key player in professional turf management, explains the business.

"The acquisition will allow Agrovista Amenity to extend its reach into customer channels in which it is currently under-represented and better leverage the combined offer to our current and future customers," says Agrovista managing director Chris Clayton.

Chairman and CEO of AGS Jamie Bennett echoes the statement, adding that: "This acquisition will combine the strengths of both companies, enhance the product portfolio and increase the technical knowledge of both teams."

SGS to divest crop science ops to Eurofins Scientific

12 January 2024

Swiss inspection, verification, testing and certification company SGS (Geneva) has agreed a deal with contract research company Eurofins Scientific to divest its crop science operations in 14 countries. The agreement is subject to consultation with stakeholders and is expected to close in the coming months.

SGS's crop science activities are composed of contract research, agricultural input testing and precision farming and agronomy services. "The scope of divested operations includes over 480 employees located in 14 countries in Europe, North America, South Africa and Brazil with revenues amounting to approximately CHF 46 million [$54.6 million at the current rate] in 2022," says the company.

The divestment is part of SGS's strategic portfolio aimed at further aligning the group to the testing, inspection and certification sector trends in chosen markets.

Brazil Ag Ministry/Serpro to build dig ag platform

15 January 2024

The Brazilian Ministry of Agriculture and national government agency data processing service, Serpro, have agreed to co-develop and operate a digital agriculture innovation platform, AgroHub Brasil. The platform will be a "virtual open innovation environment", seeking to foster the interaction of various regional ecosystems in the agriculture sector.

With multilingual support and employing technological solutions such as application programming interface (API) and artificial intelligence (AI), the platform will connect academia, government, civil society, entrepreneurs and investors, the partners say. They seek to create a technology transfer network focused on innovative solutions that serve growers and foster technological entrepreneurship, they add.

The Ministry's secretary of innovation, sustainable development, irrigation and co-operation, Renata Miranda, says that platforms such as AgroHub Brasil, are "essential" tools to get technology to growers. "Brazil is a country of continental dimensions, with different needs and potential in each region. With open innovation it is possible to work with public policies more focused on these particularities, with more sustainable strategies and greater engagement," she adds.

Certis Biologicals' debuts Convergence biofungicide

10 January 2024

Certis Biologicals (Columbia, Maryland) has introduced its biofungicide, Convergence (*Bacillus amyloliquefaciens* strain D747), in the US. The suspension concentrate formulation is effective against soilborne bacterial and fungal diseases caused by *Pythium* spp, *Rhizoctonia* spp, *Fusarium* spp, and *Phytophthora* spp in row crops including corn (maize), peanuts and soybeans. It also protects the crops from foliar diseases such as tar spot, rusts and leaf spots.

Convergence can be "seamlessly incorporated" into conventional pest management programs through in-furrow or foliar applications, says Certis Biologicals, adding that the offering does not require special storage, and can be tank-mixed with "nearly any synthetic application." The company highlights that Convergence has been trialled on corn and soybeans in the US Mid-West, delivering enhanced yields for both crops.

Certis Biologicals is the US biologicals subsidiary of Japanese company Mitsui & Co.

Canada seeks to adopt pesticide oversight policy

11 January 2024

The Canadian Pest Management Regulatory Agency (PMRA) has proposed the implementation of a "Continuous Oversight of Pesticides" policy to enhance its existing pesticide monitoring processes, as well as introduce new regulatory approaches. It notes that the development would help the Agency keep track of scientific advancements that become available after a pesticide has been granted approval.

If adopted, the PMRA anticipates the updated workflow enabling it to take more proactive steps to protect public health and the environment from potential pesticide-related harms. It observes that the updated evaluation framework would "expand and formalize the information collected on registered pesticides throughout the pesticide regulatory lifecycle".

However, the Agency explains that the new policy would not replace existing workflows involving the registration, re-evaluation and special review of pesticides, adding that it would continue to develop and expand the use of automation and related technologies to execute its oversight activities.

The pesticide watchdog highlights that potential risks identified through the oversight policy would be addressed through existing mechanisms such as special reviews or requiring a pesticide registrant to furnish additional information involving the pesticide's effects on human health and the environment.

Notably, the Agency is required to carry out re-evaluations of all pesticides registered in Canada every 15 years to ensure that their risks continue to meet current standards.

Science and transparency

The PMRA intends to step up its review of available scientific material and regulatory data to undertake continued oversight exercises, adding that relevant information would be extracted from academic papers, scientific databases, and government science journals, besides decisions delivered by OECD nations, and "indigenous" knowledge.

Transparency of the Agency's operations, on the other hand, is to be maintained through the public listing of all data collected as part of the oversight approach. Additionally, the gathered information is to undergo a triage process that would consider the findings from a study, and compare it against prevalent PMRA risk assessments, as well as current understanding of a pesticide.

A 60-day **public consultation** has been initiated on the matter, and comments can be submitted until March 3.

US EPA issues first update on PRIA 5 implementation

15 January 2024

The US EPA highlights undertaking a host of measures during the first year of its implementation of the nation's Pesticide Registration Improvement Act of 2022 (PRIA 5). Around a third of the Agency's pesticide program activities are funded by registration fees authorized by the PRIA, with the regulator adding that **fee increases** and revised decision timeframes sanctioned by the Act improved its ability to perform reviews of new applications as well as the re-evaluation of older pesticides.

Notably, the EPA is mandated by the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) to review each registered pesticide every 15 years to determine whether they continue to meet standards of registration by not posing harm to human health or the environment.

In 2023, the EPA issued a **final guidance** for pesticide registrants to improve the efficiency of its analyses of the country's Endangered Species Act (ESA) for the registration of new pesticide active ingredients, as well as

for those undergoing registration review. It points out that the development translated into regulatory compliance with the PRIA 5, besides furthering goals **outlined** in the EPA's 2022 workplan to protect species listed under the nations Endangered Species Act (ESA).

Additionally, the Agency's actions in 2023 were directed towards centralizing pesticide guidance documents covering over 1,000 pesticides.

The pesticide watchdog also infused capital to support an inter-agency agreement involving the Sentinel Event Notification System for Occupational Risk (SENSOR) program for the surveillance of pesticide-related incidents, besides conducting "significant outreach" and seeking feedback from relevant stakeholders in implementing **bilingual pesticide labels** in English and Spanish.

The end of the year saw the Agency stepping up its actions to achieve enhanced adherence to PRIA 5 guidelines. It unveiled the Vector Expedited Review Voucher (VERV) program to **incentivize** the development of "novel or unique" mosquito control products, besides **issuing** a final guidance for pesticide registrants to improve the efficiency of its ESA analyses for new outdoor uses of existing conventional as well as biopesticide ais.

A comprehensive **review** of US pesticide policies from last year can be read here.

GreenLight's Calantha registered in the US

09 January 2024

US biotechnology business GreenLight Biosciences (Medford, Massachusetts) reports receiving registration from the nation's EPA for its bioinsecticide, Calantha. The product is based on the company's double-stranded RNA (dsRNA) based bioinsecticide active ingredient, ledprona, which **received** US registration late last year. The ai is the first of its kind with a derived sprayable solution that can be commercially used to treat plants.

Calantha is intended for the control of Colorado potato beetles (*Leptinotarsa decemlineata*) affecting potato crops grown across several states of the country. GreenLight highlights that the ai stops the pest from eating and causes death from its own toxins. The company claims that Calantha had no impact on tested species other than L decemlineata even when it was tested "at 100 times the rate that it will be used in agricultural fields". It adds that the product is applied at "less than one-tenth the rate" when compared with synthetic pesticides.

GreenLight notes that Calantha is being reviewed by regulators in other "key" markets, revealing that its next RNA-based product would focus on curbing varroa mites (*Varroa destructor*).

Last year, the EPA granted temporary tolerance exemption to ledprona when it is used on potatoes in accordance with the terms of an experimental use permit (EUP) that the regulator **issued** to GreenLight Bioscience in May 2022. The EUP allows the product to be applied using aerial, ground and chemigation methods across 10 US states. The tolerance exemption is valid until April 30, 2025.

FA Bio raises £5 m from multiple investors

12 January 2024

UK agriculture biotechnology business FA Bio (Harpenden, Hertfordshire) has raised £5.3 million ($6.6 million at the current rate) from three European venture capital funds, existing shareholders, and new private investors.

FA Bio specializes in the discovery and development of microbial bioproducts, including biocontrols, biostimulants and biofertilizers. The company develops products using its targeted microbial sampling strategy, SporSenZ technology, to collect data and microbial isolates from agricultural fields.

"With this latest round of investment, we can accelerate our R&D work and development of bioproducts for the agriculture sector and achieve our vision of revolutionizing sustainable agriculture," says chief executive officer Angela de Manzanos Guinot. Furthermore, the funding will help with the expansion of its team.

DPH Biologicals undergoes ownership transition

12 January 2024

US biological crop protection business DPH Biologicals (East Princeton, Illinois) reports a transition in its ownership. It involved a buyout led by the company's management in association with a private investment group. The entity's products will continue to be marketed under the DPH Biologicals brand.

DPH highlights that the management team brings "decades of experience", domestically as well as globally, in sales, marketing, research, product development, supply chain management, and business strategy. The company's plans during the year include foraying into the Brazilian market.

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