

## News from the World Of Spices

December 2022



*World Spice Organisation wishes you a very happy and prosperous new year!!!*

2022 was a truly eventful year for WSO as it marked the conduct of the first ever National Spice Conference. This year also witnessed much positive impacts among the farming community as the National Sustainable Spice Program was joined by two more collaborators- Rainforest Alliance and Sustainable Spice Initiative (SSI).

The important activities undertaken by WSO in the last quarter of 2022 are summarized below.

### **Annual General Meeting**

The WSO Annual General Meeting (AGM) was held on Saturday 19 November 2022 in Hybrid mode. Various activities undertaken by WSO were discussed in the meeting and inputs were received from the participants. In the Managing Committee Meeting that followed, Mr. Ramkumar Menon was reelected as the Chairman of WSO. Mr. Gulshan John and Mr. Emmanuel Nambusseril were elected as the Vice- Chairman and Treasurer respectively.

### **National Sustainable Spice Program**

Chilly demonstration plots in Telangana selected by the Pothana NGO under Nadikuda FPO were reviewed to be good high-tech plots using precision technologies. It is planned to include more sustainable practices like border crop planting, trap cropping and pesticide bins for empty bottle disposal in the future model plots.

Training of Trainer programmes were conducted by NSSP Master Trainers and other experts where the cultivation practices to be followed were touched upon. Programmes were conducted

for 40 FPOs cultivating cumin in Rajasthan, Chilli and turmeric in Andhra Pradesh and Turmeric in Tamil Nadu. Each of these ToTs saw the participation of farmers in good numbers.



Demo plot-chilly of Nadikuda  
FPO-Telengana



ToT conducted under Osian Jeera producer  
company FPO in Jodhpur district.

NSSP Collaborators Meeting was held virtually on 18<sup>th</sup> November 2022. Collaborators were informed about the activities undertaken by NSSP and it was decided to move forward with the Action plan formulated in the last Collaborators meeting held in June. In the meeting, Budget for the next year was approved and Steering committee members were finalised.

### **Other Activities**

WSO representatives participated in a pre-session meeting of National Committee for Spices Quality and Safety (NCSQS) organized by Spices Board organized on 26<sup>th</sup> October. The meeting discussed two projects being taken up by Spices Board on Ethylene oxide (EtO) contamination in spices to identify possible sources of Natural occurrence of EtO and cross contamination in the supply chain. The study on natural occurrence is being conducted at the Chennai laboratory of the Board on chilli and ginger and the study on cross-contamination will begin shortly with the support of spice companies with and without EtO sterilization facilities. WSO was also part of the Indian delegation to the 31st meeting of ISO/TC 34/SC 7 held virtually on 14 - 15 December 2022.

## **COP27: A ‘notable disappointment’ for sustainable food systems**

As climate talks conclude in Sharm El Sheikh, for the first time ever a deal has been reached that will see agriculture integrated into the UN’s climate action body. The result of lengthy talks and a significant process of negotiation, does the so-called Koronivia package represent a win for sustainable food systems?

While the historic Loss and Damage Fund was the most attention-grabbing deal to come out of the COP27 negotiations in Egypt this year (establishing as it does a fund to support climate-vulnerable developing countries), those pushing for food to be part of the climate conversation will undoubtedly be gratified to see the sign-off of the Koronivia package which, for the first time ever, puts agriculture onto the agenda of the UNFCCC, the UN’s climate action body.

The agreement looked touch and go at some points, with talks running through to the eleventh hour and governments signing off on the final text at 6am on Sunday (20 November). The UNFCCC will now incorporate ‘work on implementation of climate action on agriculture and food security’.

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## **FSA sticks with past advice after COVID study results**

The Food Standards Agency (FSA) has published research on the time the virus that causes COVID-19 can survive on food and packaging.

The University of Southampton produced the report under contract by the FSA. Researchers measured the rate of inactivation of the virus on the surface of various types of food and food packaging. Only one COVID strain was studied.

A risk assessment from the FSA in 2020 found it was very unlikely to be infected via food. Results from the study will not change the advice that there is no need to take added precautions because of COVID-19 when handling food and packaging as long as good hygienic practices are followed.

Findings support views from the International Commission for Microbiological Specifications of Foods (ICMSF) in 2020 that SARS-CoV-2 should not be considered a food safety hazard and guidance from FAO in 2021. [Read more](#)

## FAO and WHO publish full E. coli and Listeria reports

Two final reports on controls measures for E. coli and for Listeria in ready-to-eat food have been unveiled by FAO and WHO. The World Health Organization (WHO) and UN Food and Agriculture Organization (FAO) published the complete reports as part of the microbiological risk assessment series.

One Joint FAO/WHO Expert Meeting on Microbiological Risk Assessment (JEMRA) in June 2020 covered Shiga toxin-producing E. coli (STEC) in [meat and dairy products](#) while the other meeting in October and November 2020 looked at Listeria monocytogenes in ready-to-eat (RTE) food.

In 2019, the Codex Alimentarius Commission approved the development of guidelines to control STEC in beef, raw milk, and cheese produced from raw milk, leafy greens, and sprouts. JEMRA was asked for scientific advice on the effectiveness of control measures against STEC during primary production and processing of raw meat, raw milk, and raw cow's milk cheeses. Interventions were scored as high, medium, or low based on evidence in the literature.

### Evidence for control measures

Farm-based practices can reduce STEC carriage, excretion, and transmission within a herd. But this can be negated at later stages of the processing chain due to mixing with other animals. Good practices include hygienic housing and bedding, low animal density, clean drinking water, biosecurity, safe and effective sanitation, and manure management. The impact of feed additives, vaccines and nutrition strategies was mixed. [Read more](#)

## Are our Diets at the Intersection of Food Safety and Sustainability?

The answer to the question posed in the title of this article is an immediate "yes"—our diets are at the intersection of food safety and sustainability.

According to the 2019 Lancet Commission report, "Food systems have the potential to nurture human health and support environmental sustainability; however, they are currently threatening both." Our dietary choices are contributing to the pressure on global food systems. Modern diets are expected to consist of nutritious, environmentally sustainable, high-quality and safe foods, enabling people to satisfy their nutrient requirements and avoiding foodborne illnesses.

In reality, current diets are increasingly unhealthy, unsustainable, and inequitable for many population groups. They are often not up to the required food safety standards, particularly in non-Western countries. The West appears to exhibit heightened awareness about food safety, with many countries claiming that they maintain high standards during the production, distribution, storage, and sale of food, and that they have mandatory legal requirements to protect people. However, there is less understanding of what makes human diets sustainable in a way that ensures global food security and sustainability.

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## Decline in foodborne illnesses in England likely linked to COVID-19 restrictions

Measures aimed at controlling the spread of COVID-19 appear to have reduced food poisoning in England, according to a study.

Non-pharmaceutical interventions (NPIs) include travel restrictions, social distancing, lockdowns, and isolation policies.

Researchers looked at cases of seven reportable communicable diseases including food poisoning from January 2017 to January 2021. Data came from weekly reported diseases from the UKHSA's notifications of infectious diseases (NOIDs) dataset for England.

The smallest decrease was observed for food poisoning, with a 56.4 percent decline from 191 to 83 cases per week. This is likely due to dining services such as home deliveries and takeaways remaining open and providing a potential route of transmission, said scientists.

Food poisoning includes *Campylobacter*, *Salmonella*, *Listeria*, *Cyclospora*, and Shiga-toxin-producing *E. coli* (STEC) and is defined as an illness caused by food contaminated with bacteria, a parasite, virus, chemical, or other toxins.

Another study found lab reporting of norovirus in England was impacted more than *Campylobacter* by the pandemic. Results were published in 2021 in the journal [PLOS One](#).

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## The key to the future of agriculture? Technology

Despite there being a desire to increase the sustainability of farms across the world, sometimes the tools are simply not in place to see this through.

Last month we witnessed global leaders meeting to discuss plans to curtail the climate challenges currently facing the planet during COP27. The conference was dubbed by many as the first 'food COP,' with over 200 food-focused events, four pavilions and an entire day dedicated to agriculture and adaptation – this comes after many have criticised previous events for ignoring the farming industry completely.

It is no surprise to see farming finally discussed at the top table, with food systems massively impacted by climate change and a big contributor of greenhouse gases. The sector is currently [responsible for one-third of greenhouse gases globally](#), with food and livestock production, fertilizer use, deforestation, transport and food waste as the main drivers.

Despite this, there's clear evidence that farmers across Europe and Africa understand the need to become more sustainable. [Findings from a recent report](#) show 96% of farmers in Europe and 92% of farmers in Africa would like to increase the sustainability of their farms. But how can we help secure farmers futures while becoming more sustainable?

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## **Sustainable Agriculture: Why a Changing Policy Landscape Matters to Business**

A well functioning agricultural sector is a crucial component for any successful and sustainable economy, given its core role in the production of food and raw materials. Supply chains of many sectors rely on crops, fibers and fuels, linking them to agriculture and its impacts.

Given the multiple sustainability themes associated with agriculture - nutrition and health, employment, soil or water contamination, competing demands for land use, and food prices - it's no surprise that the sector is highly regulated. As the global drive towards more sustainable agricultural production intensifies, scrutiny will only further increase.

European countries, in particular, have been actively adopting strategies for more sustainable food systems, such as [Farm to Fork](#) under the European Green Deal. Consequently, countries who export agriculture commodities to the EU will also need to adapt to these developments.

It can be a significant ask for companies with global supply chains to comply with developing sustainability requirements, as they affect almost every operational aspect - how production is managed; employment terms and conditions; use of natural resources, etc. There are a number of emerging developments, described below, that companies with agricultural products in their supply chain need to be ready to respond to.

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## **UNESCO and LVMH strengthen their partnership to support biodiversity**

UNESCO and LVMH have announced strengthened cooperation on projects aimed at minimising the impact of climate change on biodiversity and improving ecosystem resilience. A new component of the partnership will be dedicated to measuring impact, to assess how programmes conserve biodiversity, mitigate the effects of climate change, increase ecosystem resilience and benefit local communities.

On the occasion of the Conference of the Parties to the Convention on Biological Diversity, COP 15, in Montreal, the Man and the Biosphere (MAB) programme of UNESCO is strengthening its cooperation with the LVMH Group on numerous projects around the world.

In particular, in the Amazon basin, this partnership has been working since 2019 against the direct and indirect causes of deforestation in eight biosphere reserves in Bolivia, Brazil, Ecuador and Peru.

To date, it has supported more than 41 projects to regenerate ecosystems and develop sustainable employment projects for local communities, combining scientific and local knowledge with indigenous know-how.

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## Government schemes for promoting natural farming

Under BPKP, natural farming is being promoted in cluster of 500 hectare and Rs.12,200 is provided per hectare for three years, in which Rs.2000 is provided as incentives to farmers through DBT

The Government of India is promoting natural farming through a sub-scheme namely Bharatiya Prakritik Krishi Paddhati (BPKP) under Paramparagat Krishi Vikas Yojana (PKVY) since 2019-2020. So far 4.09 lakh hectare area has been brought under BPKP, Union Minister of Agriculture & Farmers Welfare, Narendra Singh Tomar in a written reply in Rajya Sabha on Friday.

Department of Agriculture and Farmer Welfare (DA&FW) is undertaking large-scale training of master trainers, champion farmers and practicing farmers on techniques of natural farming through the National Institute of Agricultural Extension Management (MANAGE) and National Centre of Organic and Natural Farming (NCONF). It has also sensitised the public representative like gram-pradhan on the technique and benefits of natural farming.

Study material on 22 regional languages has been prepared and 697 master trainers have been developed on natural farming and 997 training were conducted for 56,952 gram pradhans through MANAGE. In addition, Indian Council of Agricultural Research (ICAR) has initiated research in 20 locations to validate natural farming techniques besides demonstrating in 425 KVKs (Krishi Vikas Kendras) to showcase the benefits of natural farming, the agriculture minister informed the upper house of Indian parliament.

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## EU's global push on food sustainability standards raises hackles in third countries

The EU's ambition to hold third countries' food imports to its own sustainability standards has been met with consternation as stakeholders sounded the alarm in key trading partners, including Brazil and the US.

As set out in the EU's flagship food policy, the Farm to Fork strategy, EU trade policy should "contribute to enhance cooperation with and to obtain ambitious commitments from third countries in key areas".

This includes key areas such as animal welfare, the use of pesticides, and the fight against antimicrobial resistance in efforts to "encourage the production of agri-food products complying with high safety and sustainability standards".

And there has been a recent spate of legislation intended to make this a reality, including a new deforestation law, as well as conversations over halting the export of banned pesticides from the EU and calls to apply animal welfare rules to imported products.

The move has been welcomed both by EU farmers, who stress the need for a level playing field, as well as green campaigners, who point out concerns that otherwise this may lead to an outsourcing of the EU's pollution elsewhere.

[Read more](#)

## **FSA publishes new research on the survival of coronavirus on food and packaging**

The Food Standards Agency has today published research into the length of time coronavirus can survive on the surface of food and packaging.

The research, conducted by the University of Southampton, was commissioned by the FSA following the publication of its risk assessment in 2020 which concluded it was very unlikely that humans could catch the virus from food. The study involved deliberately adding virus to the surface of food and packaging. It was not designed to consider the probability that food becomes contaminated under normal conditions, or the probability that virus on food will lead to infection.

The study's results shows that the virus's survival varied depending on the foods and food packaging examined. On some foods, such as cheese and ham, the virus survived for several days. On others, such as apples and olives, virus levels dropped quickly. For most food products tested there was a 'significant drop' in the levels of virus contamination over the first 24 hours. These findings confirm that the overall risk to consumers from coronavirus via food remains very low.

[Read more](#)

## **Beyond sustainability: Why the future of coffee farming is regenerative**

In the wake of global events like the pandemic, today's consumers are more mindful than ever of the environment and the importance of doing their bit to address sustainability challenges.

However, while enjoying a morning cup of coffee or afternoon pick-me-up, many of us may not realise that the impacts of climate change are already very real for the farmers behind our favourite blends. For 125 million people around the world, coffee goes far beyond a daily ritual – it is their livelihood, but production is becoming more challenging every day.

Many farmers are being forced to grow coffee at higher altitudes due to rising temperatures, while others are dealing with unprecedented droughts or heavy rainfall. In Brazil, the world's largest coffee-producing country, farmers are still battling to survive in the aftermath of severe frosts that damaged up to 200,000 hectares of land cultivated with coffee last year – increasing coffee prices by 70% between April 2020 and December 2021.

[Read more](#)



## The Wave of Recalls, Explained

You're not imagining things if you've sensed a high number of recalls these days. Learn which ones to pay attention to, and when you shouldn't stress.

If you read the news, or at least the grocery news, the number of recall announcements might be enough to make your head spin -- or at least enough to convince you that basically everything is risky to eat, or that no shampoo or deodorant is safe to use.

We've reported on a number of these recalls this year, many posted by the US Food and Drug Administration, the US Department of Agriculture or the Consumer Product Safety Commission. The guidance is typically along the lines of, "if you have a package in this lot, throw it away," or, "immediately dispose of the affected medication or potentially contaminated food."

But on the scale of things that are likely to harm you, food recalls are generally pretty low on the list. Food is often recalled, "out of an abundance of caution." Even if it seems like there's been an excess of announcements telling us to take action, that has less to do with the actual safety of products declining, and more to do with increased monitoring by the FDA. It's also a result of more tests by third-party pharmaceutical companies such as Valisure, the testing company that spurred the recall of many sunscreens, deodorants and shampoos. More awareness of what we're putting into our bodies sometimes means more recalls.

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## EU climate plan sacrifices carbon storage and biodiversity for bioenergy

Incoming policies will cause the European Union to harvest more wood, shift one-fifth of cropland to bioenergy and outsource deforestation, analysis shows.

Nearly all strategies to meet climate targets or preserve global biodiversity require the world's agricultural land area to be held at current levels or reduced. More precisely, the world must decrease its 'land carbon footprint', which is the quantity of carbon lost from native habitats to supply agricultural products and wood.

But rising populations and incomes put the world on track to require 40–60% more crops and 70% more milk and meat in 2050 than in 2010<sup>1</sup>. Even factoring in higher yields, models project that cropland will expand by 100 million to 400 million hectares (Mha) globally over this period. Indeed, remote sensing of recent growth rates puts the world's cropland on track to consume 450 million more hectares over this period, an area 1.5 times the size of India.

To meet the challenge, countries must do more to maintain or reduce their land carbon footprints. They can do so by boosting crop and livestock yields and by reducing demand, particularly for products that require a lot of land to produce, such as meat. [Read more](#)

## **A new edible sensor shows if frozen products have previously thawed**

Researchers at the Istituto Italiano di Tecnologia in Italy have designed a food-grade device from edible materials that indicates whether a frozen product has been thawed and refrozen.

The researchers' work, titled "Self-Powered Edible Defrosting Sensor" was published in *ACS Sensors*, by Ivan Ilic, Mario Caironi, and their colleagues.

The device can detect defrosting events by coupling a temperature-activated galvanic cell with an ionochromic cell. All components of the sensor are made with entirely edible materials, including table salt, red cabbage, and beeswax.

The galvanic cell operates with an aqueous electrolyte solution, producing current only at temperatures above the solution's freezing point. The ionochromic cell uses the current generated during the defrosting to release tin ions. This forms complexes with natural dyes, causing the color to change and providing information about defrosting events.

The temperature at which the sensor reacts can be tuned between 0 and -50 degrees Celsius. The temperature range allows the device to be used in the supply chain in several ways: as a sensor, it can measure the length of exposure to above-the-threshold temperatures, while as a detector, it can provide a signal that there was exposure to above-the-threshold temperatures.

[Read more](#)

## **Turning Wastewater into Fertilizer is Viable & could Make Agriculture More Sustainable: Study**

According to environmental engineering researchers at Drexel University, wastewater draining from massive pools of sewage sludge has the potential to play a role in more sustainable agriculture. A new study of removing ammonia from wastewater and converting it into fertilizer suggests that it is not only technically feasible but also has the potential to reduce the environmental and energy footprint of fertilizer production – and even provide a revenue stream for utilities and water treatment facilities.

### **A Sustainable Nitrogen Source**

Nitrogen production for fertilizer is an energy-intensive process that accounts for nearly 2% of global CO<sub>2</sub> emissions.

Researchers have looked into alternatives to the Haber-Bosch nitrogen production process in recent years, which has been the industry standard for over a century. One promising option, recently raised by some water utility providers, is to extract nitrogen from waste ammonia extracted from water during treatment.

"Recovering nitrogen from wastewater would be a desirable alternative to the Haber-Bosch process because it creates a 'circular nitrogen economy,'" said Patrick Gurian, Ph.D., who contributed to the study, which was recently published in the journal *Science of the Total Environment*. [Read more](#)

## WHO Convenes Panel to Identify Priority Pathogens for Research and Oversight

More than 300 scientists will consider the evidence on over 25 virus families and bacteria—as well as “Disease X” (an unknown pathogen that could cause a serious international epidemic)—and recommend a list of priority pathogens that need further research and investment.

The World Health Organization (WHO) [announced](#) that it is launching a global scientific process to update the list of priority pathogens to guide global investment, research and development of vaccines, tests and treatments.

The process began on November 18 with a meeting of more than 300 scientists who will consider the evidence on over 25 virus families and bacteria, as well as “Disease X.” Disease X is included to indicate an unknown pathogen that could cause a serious international epidemic. The experts will recommend a list of priority pathogens that need further research and investment. The process will include both scientific and public health criteria, as well as criteria related to socioeconomic impact, access, and equity.

The first priority pathogen list was published in 2017 and [the last prioritization exercise was done](#) in 2018. The current list includes COVID-19, Crimean-Cong hemorrhagic fever, Ebola virus disease and Marburg virus disease, Lassa fever, Middle East respiratory syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS), Nipah and henipaviral diseases, Rift Valley fever, Zika and Disease X. [Read more](#)

## Modern Mycotoxin Testing: How Advanced Detection Solutions Help Protect Brands and Consumers

Mycotoxins are toxic compounds produced by several types of fungi. These mycotoxin-producing fungi grow on a variety of crops and foodstuffs, such as cereals, nuts, and coffee beans, contaminating [up to 25% of the world’s crops every year](#).

In humans, ingesting even small amounts of some mycotoxins [can lead to acute poisoning](#)—research has also linked mycotoxin ingestion to [long-term effects such as cancer and immune deficiency](#). In livestock, [the situation is similar](#) with mycotoxin exposure responsible for a greater incidence of disease, poor reproductive performance, and suboptimal milk production. With the health consequences so severe, it’s easy to see why mycotoxin contamination can harm the brand reputation of food producers and suppliers.

Mycotoxin contamination also poses a significant economic risk. The U.S. FDA estimates that mycotoxin contamination is responsible for an estimated annual crop loss of [\\$932 million](#) while, the Food and Agriculture Association estimates toxigenic fungi drive annual food and food product losses of [~1 billion metric tons](#), which includes losses due to reduced livestock productivity.

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## Heavy metals, pesticides, and undeclared colors spur FDA to step up import alerts

The Food and Drug Administration is continuing its use of import alerts to enforce U.S. food safety regulations for food from foreign countries. The agency updates and modifies the alerts as needed. Recent modifications to FDA's import alerts, as posted by the agency, are listed below.

Import Alert	Desc Text
IA -36-01	Adulteration of Honey- Firms on Red list
IA-45-02	Detention without Physical Examination and Guidance of Foods containing Illegal and/or Undeclared Colors
IA-53-06	Detention without Physical Examination of cosmetics that are adulterated and/or misbranded due to color additive violations
IA-57-06	Detention Without Physical Examination of 714x Cancer/Aids Serum
IA-76-01	Detention Without Physical Examination Of Medical Instruments from Pakistan
IA-89-04	Detention Without Physical Examination of Devices from firms that have not met Device Quality System Requirements
IA-89-08	Detention Without Physical Examination of Devices Without Approved PMAs or IDEs and Other Devices Not Substantially Equivalent or Without a 510(k)
IA-99-05	Detention Without Physical Examination of Raw Agricultural Products for Pesticides
IA-99-08	Detention Without Physical Examination Of Processed Human and Animal Foods for Pesticides
IA-99-14	Countrywide Detention Without Physical Examination Of Raw Agricultural Products for Pesticides
IA-99-22	Detention Without Physical Examination Of Foods Containing Undeclared Major Food Allergens Or Foods That Fail To Properly Label MajorFood Allergens
IA-99-42	DETENTION WITHOUT PHYSICAL EXAMINATION OF FOODS DUE TO HEAVY METAL (TOXIC ELEMENT) CONTAMINATION

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## Abu Dhabi to impose seven kinds of penalties against food safety violators

From warning notices to permanent closure, new resolution gives ADAFSA powers to inspect and monitor that set standards are followed.

Abu Dhabi Agriculture and Food Safety Authority (ADAFSA) has introduced seven types of administrative penalties – starting from a warning notice to permanent closure – in its efforts to eliminate improper practices across the emirate's agriculture and food production sector.

This is part of government's objective to enhance the quality of agriculture and food facilities by strengthening the emirate's agricultural legislative system. It will ensure high-quality standards across the sector, and also protect the community from violations at farm and food outlets.

Saeed Al Bahri Al Ameri, Director General of ADAFSA, said the new rules will enhance the development of a sustainable agricultural sector, as well as strengthen the food security and biosecurity system.

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