Alltech®

Sustainability Report

2020

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Letter From the CEO

Dear Friends,

This year, in spite of its challenges, has ushered in a new golden era of agri-food, one that will require us to continue **Working Together for a Planet of Plenty™** across geographies and industries.

The COVID-19 pandemic has shone a spotlight on the heroes of the agri-food industry, from the farmers who feed us to those working in grocery stores, the food service industry and beyond. However, we have also seen increased polarization in our world, continued negativity toward agriculture in the media, rising concerns about food waste and widespread misinformation about the impact agri-food has on the environment. The well-intended actions and messages of many individuals can have unexpected consequences when we do not collaborate and utilize our collective knowledge. This is why Working Together for a Planet of Plenty is so critical.

At Alltech, we choose to see opportunities in every challenge and are dedicated to delivering smarter, more sustainable solutions for agri-food. The facts show that agriculture is making huge strides in sustainability. In my lifetime alone, the carbon emissions to produce beef have decreased by one-third. We produce more food on the same amount of land than we did 50 years ago. As we continue to improve animal nutrition and farm management, animal agriculture can even help to induce a cooling effect on the planet.

Our bold **Planet of Plenty** vision believes that agriculture has the greatest potential to positively impact the future of our planet. Governments, businesses and global citizens are calling for change, and the original caretakers of the land — farmers, ranchers and growers — are the ones who can cultivate a future of promise.

To continue advancing our ambitions to create a more abundant world, this year, we completed a **materiality assessment** of Alltech, its business, its products and its responsibilities to ensure alignment with the U.N. Global Compact. We also established our baseline Scope 1 and 2 greenhouse gas emissions. We are currently completing our Scope 3 baseline emissions estimate and developing emissions reduction targets and plans. Since **COVID-19** first emerged, we have worked to help ensure the health and safety of colleagues, customers and the communities in which we live and work by developing and sharing crucial resources. We believe that **diversity, equity and inclusion** cultivate creativity and drive innovation, and we recommitted to promoting an inclusive work environment where each person is valued and feels inspired to contribute their best. Additionally, we have partnered with numerous individuals and organizations to tell the powerful **story of the sustainable science of agri-food,** with many exciting projects underway. Our team is committed to continually **setting targets** that will propel us into this new era of possibility.

This year has affirmed the vital importance of collaboration, trusting our scientific experts and welcoming diverse perspectives. As a company, industry and planet, we must continue to set aside divisions and harness our most precious infinite resource: human ingenuity. It's an honor to work in the agri-food industry. Together, instead of leaving a footprint, we can leave a legacy.

We are made for this moment.

Sincerely,
Dr. Mark Lyons

President and CEO, Alltech

About Alltech: Delivering Smarter, More Sustainable Solutions for Agriculture

Founded in 1980 by Irish entrepreneur and scientist Dr. Pearse Lyons, Alltech delivers smarter, more sustainable solutions for agriculture. Our products improve the health and performance of plants and animals, resulting in better nutrition for consumers and a decreased environmental impact.

We are a global leader in the animal health industry, producing specialty ingredients, premix supplements, feed and complete feed. Strengthened by more than 40 years of scientific research, we carry forward a legacy of innovation and a unique culture that views challenges through an entrepreneurial lens.

Our more than 5,000 talented team members worldwide share our vision for a Planet of Plenty™. We believe agriculture has the greatest potential to shape the future of our planet, but it will take all of us working together, led by science, technology and a shared will to make a difference.

Alltech is a private, family-owned company, which allows us to adapt quickly to our customers' needs and maintain focus on advanced innovation. Headquartered just outside of Lexington, Kentucky, USA, Alltech has a strong presence in all regions of the world. For more information, visit alltech.com, or join the conversation on Facebook, Twitter, Instagram and LinkedIn.

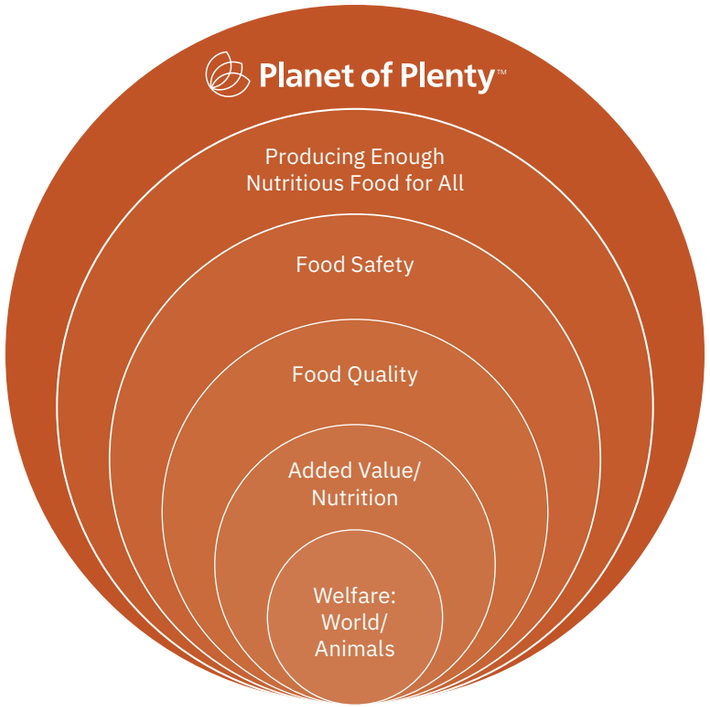
Working Together for a Planet of Plenty™

At Alltech, we are Working Together for a Planet of Plenty™. A planet where science-based solutions help ensure sustainable food production for the global population. A planet where agriculture's story is central to the development of thriving communities and ecosystems. A planet where, through collaboration and innovation, we can create a world of abundance for future generations.

It's at the heart of who we've always been. Alltech founder Dr. Pearse Lyons wanted to ensure that the business would have an impact on our industry and our planet far into the future. In 1989, he established our commitment to a guiding ACE principle, requiring all of our endeavors to seek the safety and well-being of the Animal, Consumer and Environment. Our Planet of Plenty vision propels our founding ACE principle into the future and into a new world of possibility.

The world we share is diverse, with myriad needs, and our vision of a Planet of Plenty addresses humanity's most basic requirements, as well as our aspirations for a better future.

- Support agriculture to produce enough nutritious food for a growing population.
- Improve safety and quality within the food chain.
- Add value and nutrition to fruits and vegetables, meat, milk and eggs.
- Meet the demands of consumers to produce their food and beverages in a way that ensures the welfare of the animal and the environment.



How Our Vision Guides Our Sustainability Journey

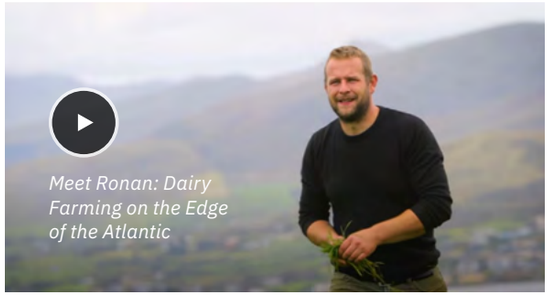
Agriculture has the greatest potential to shape the future of our planet. With the advent of new agricultural technologies, the adoption of improved farm management practices and, above all, the ingenuity inherent in the human spirit, a world of abundance can be ours. Through improving the health of animals and the soil, maximizing the value of feedstuffs, increasing the efficiency of the farm and reinvesting in innovation, Planet of Plenty™ is sharing the sustainable power of science in agri-food.

Planet of Plenty™: A Platform for Collaboration

Our Planet of Plenty™ vision is not exclusive to sustainability. It's a vision of a more positive future, full of promise and possibility that extends to education, talent development, nutritional and digital technologies, new management practices, innovative ideas and human health. It's our belief that a world of abundance is achievable, but it will take all of us working together.

Planet of Plenty provides examples of agricultural methods that can improve animal welfare and the environment. It also features the inspiring stories of the people and technologies making a Planet of Plenty possible. From an Irish dairyman farming sustainably on the edge of the Atlantic to a Brazilian operation farming livestock and trees side by side, there are compelling stories of people who are discovering new approaches and developing technologies that will lead us to a world of abundance. We are continually creating resources that support the three core tenets of Planet of Plenty: science, sustainability and storytelling. As we share this information, we want to encourage greater adoption of sustainable practices, but, most of all, we hope to inspire more ingenuity and a collaborative spirit.

Our own journeys may be unique, but if we work together, our destination can be the same: a Planet of Plenty in which there is enough nutritious food for all, the world's resources are responsibly managed for future generations, and people, animals and plants thrive.



La Cooperativa Ganadera del Valle de los Pedroches (COVAP)

UNCG Principle 7 8 9

Alltech Spain and Alltech E-CO_2 are working in partnership with La Cooperativa Ganadera del Valle de los Pedroches (COVAP) to minimize the environmental impact of the cooperative's products and supply chain. In addition, Dr. Frank Mitloehner and the CLEAR Center at the University of California, Davis have collaborated on the project to help define the environmental impacts. Together, a model for COVAP's customers has been developed that covers 25,000 dairy cows, 20,000 beef animals as well as Iberian pork, sheep and goats from different cooperative members.

Alltech is providing its on-farm auditing service, and our colleagues in Spain work closely with the Alltech E-CO_2 team to provide herd carbon footprinting and consolidate the farms into a single footprint for reporting on final products (e.g., meat, milk, etc.). As a second step, Alltech is helping identify and define areas of opportunity for improvement. COVAP has incorporated Alltech's recommended nutrition program to achieve these goals, including Optigen®, Yea-Sacc®, Bioplex® and Sel-Plex®. Recently, the project has expanded to include three additional milk processing units that COVAP owns in Spain, moving the project from regional to national status. The Planet of Plenty™ partnership seeks to help COVAP increase its efficiency, lower its costs and reduce its emissions and environmental impact in this continuous improvement program over a five-year period.

Sustainable Egg Production: Noble Foods

UNGC Principle 7 8 9

Alltech U.K. signed its first Planet of Plenty™ partnership with Noble Foods, the largest egg producer in the U.K. and the third largest in Europe.

The partnership between Alltech and Noble Foods enables both companies to simultaneously improve the performance of flocks, meet sustainability goals and increase the profitability of the supply chain.

This is a collaborative partnership exclusively designed to strengthen and accelerate the joint missions of Noble Foods and Alltech, driving sustainable and profitable growth. By working together, the companies can take egg industry standards to a new level. These standards will be illustrated and promoted through highly marketable claims, affirming that sustainability is not only achievable, but also profitable.
The partnership will combine Alltech's expertise in animal nutrition and ag-tech solutions with Noble Foods' 100 years of experience in the egg industry to achieve five pillars of sustainability:

- Reduced food loss
- Reduced carbon footprint
- Increased welfare
- Reduced land use
- Reduced mineral excretion

The partnership is anchored by a shared passion for education through continuous learning and the transfer of knowledge. By sharing insights and ideas, Alltech and Noble Foods will support each other on the journey to creating a sustainable future for the egg industry. Through the power of science and nutrition, Alltech is working closely with Noble Foods' supply chain, from start to finish, to help produce more quality eggs with less environmental impact.

Clarity and Leadership for Environmental Awareness and Research (CLEAR) Center at the University of California, Davis

UNCG Principle 7 8 9

We must better understand the role of agriculture in nourishing our world. At the same time, we must know where to focus our attention for a healthy climate and environment. That is where the Clarity and Leadership for Environmental Awareness and Research Center — or CLEAR Center — can help.

The CLEAR Center is led by Dr. Frank Mitloehner and is based in the Department of Animal Science in the College of Agricultural and Environmental Sciences at the University of California, Davis. The CLEAR Center uses its two cores, research and communications, to help animal agriculture operate more efficiently in order to meet the demands of a growing population and lessen its impact on the environment and climate. Research topics, among others, include quantifying and mitigating greenhouse gas emissions from livestock.

The CLEAR Center collaborates with those in the food chain who are striving to reduce their environmental footprint. The center actively conducts field work on ranches and dairies to find real solutions that reverberate throughout the industry because, in order to create a food system that encourages health for animals, consumers and the environment, policymakers, researchers, the agriculture sector and NGOs must work together.

Dr. Mitloehner, also known as @GHGGuru on Twitter, has discussed "Clearing the Air: Debunking the Myths of Agriculture" at the Alltech ONE Ideas Conference. As he described in his talk, the mission is to educate everyone on the effects of agricultural production using facts derived from science and research.

The CLEAR Center aligns with our Planet of Plenty™ vision to amplify the positive stories of agriculture. Through this partnership, we are demonstrating that our long-standing and vital industry has the greatest potential to have a positive impact on the planet for future generations. One way we are collaborating with the CLEAR Center is through the creation of co-branded animations that illustrate the science behind Dr. Mitloehner's research. The entertaining and educational videos were shared across social media channels and online.

The Biogenic Carbon Cycle

Not All Greenhouse Gases Are the Same

Stock Gas vs. Flow Gas

Where Can We Make a Difference?

Our Sustainability Commitments

The United Nations Global Compact

On July 12, 2019, Alltech became a signatory to the United Nations Global Compact (UNGC). The UNGC provides corporations with a value system and principle-based approach to conducting business. We strive to operate in a way that meets fundamental responsibilities in the areas of human rights, labor, the environment and anti-corruption, and we are working to incorporate the Ten Principles of the U.N. Global Compact into our strategies, policies and procedures. The Ten Principles are:

Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2: make sure that they are not complicit in human rights abuses.

Labor

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: the elimination of all forms of forced and compulsory labor;

Principle 5: the effective abolition of child labor; and

Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Throughout this report, you will find Alltech's commitment to these principles. As you read through the following section outlining our contributions, you will see that each action is tagged with the corresponding icon of the four categories related to the Ten Principles.

U.N. Sustainable Development Goals

Alltech has long been a leader in the agri-food industry, and committing to the U.N. Sustainable Development Goals (SDGs), the world's largest corporate sustainability initiative, was a natural step for a company that is passionate about sustainability and making a positive impact on the planet we all share. In 2019, when Dr. Mark Lyons announced our Planet of Plenty™ vision, it was a call for collaboration and partnership across industries and geographies, because innovation knows no boundaries. Today, our commitment to the SDGs strengthens our mission to achieve a brighter future — together — and to inspire others in our industry to do the same.

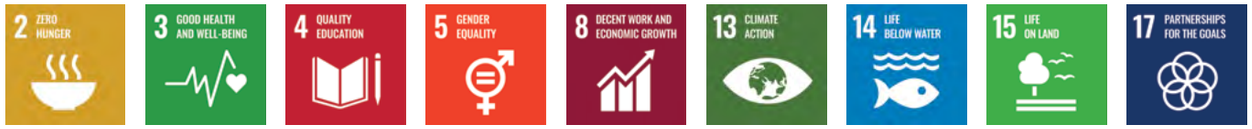
There are nine of the United Nations' 17 SDGs that we feel most closely align with our core business and are therefore actionable by the company.

Opportunities and Responsibilities That the SDGs Represent to the Business
Agriculture has many opportunities to address climate change (SDG 13, Climate Action), and governments and corporations are stepping up to provide the incentives needed for farmers to take action. This is an enormous opportunity for Alltech, as many of our products and services can help farmers reduce their GHG footprint and their broader environmental impact.

Where the Company's Priorities Lie With Respect to the SDGs
Climate change threatens agriculture's ability to feed the world's growing population. It is difficult to imagine a world in which we achieve any of the SDGs without tackling climate change. Therefore, SDG 13 must be the highest priority for Alltech and the agriculture industry as a whole.

How the SDGs Are Integrated Into the Company's Business Model
Alltech's founding ACE principle requires that all of our endeavors seek the safety and well-being of the Animal, Consumer and Environment. Planet of Plenty™ carries this legacy forward as we deliver smarter, more sustainable solutions for agriculture. This includes products that improve the health and performance of plants and animals, resulting in better nutrition for consumers and a decreased environmental impact. This mission fundamentally aligns with SDG 2, Zero Hunger; SDG 3, Good Health and Well-Being; and SDG 15, Life on Land. Furthermore, when animals are more productive, it reduces their environmental footprint, which advances SDG 13, Climate Action, and SDG 15, Life on Land.

The Expected Outcomes and Impact of the Company's Activities Related to the SDGs
We are developing specific goals for each of the SDGs that are aligned with our business. Additionally, we are implementing a system for measuring and reporting our progress. We expect to discover several opportunities for innovation and improvement as we work to advance the SDGs.



Science Based Targets Initiative

Alltech committed to the Science Based Targets initiative in 2019, which is designed to help companies reduce their greenhouse gas emissions and share their progress through transparent documentation and reporting. We have collected data from all our facilities and offices across the world in order to determine our Scope 1 and Scope 2 greenhouse gas emissions for a baseline year of 2019. We are also developing our Scope 3 emissions, which include all the emissions across our value chain, for baseline year 2019.

Materiality

Alltech conducted a materiality assessment in 2021. The goal of the materiality assessment was to gain a better understanding of our stakeholders' perceptions of Alltech and the issues of primary importance to them, as well as to develop a set of key performance indicators for our sustainability program.

Step 1: Development

Alltech's sustainability team developed a diverse list of 58 material topics divided into five categories — Environmental, Human Resources, Leadership, Business Operations and Social — in consultation with industry experts and internal leadership. The categories we chose are in line with global and industry sustainability frameworks.

Step 2: Stakeholder Engagement

We created a thorough survey and engaged a variety of internal and external stakeholders to identify the most important, or material, issues. By identifying our economic, environmental and social impacts, we will ensure we are addressing the most important topics to our business and stakeholders as we work toward our vision of a Planet of Plenty™.

External stakeholders who were invited to participate included industry peers, research partners, industry associations, members of the media, Alltech ONE Ideas Conference speakers and Planet of Plenty partners.

Step 3: Analysis of the Results

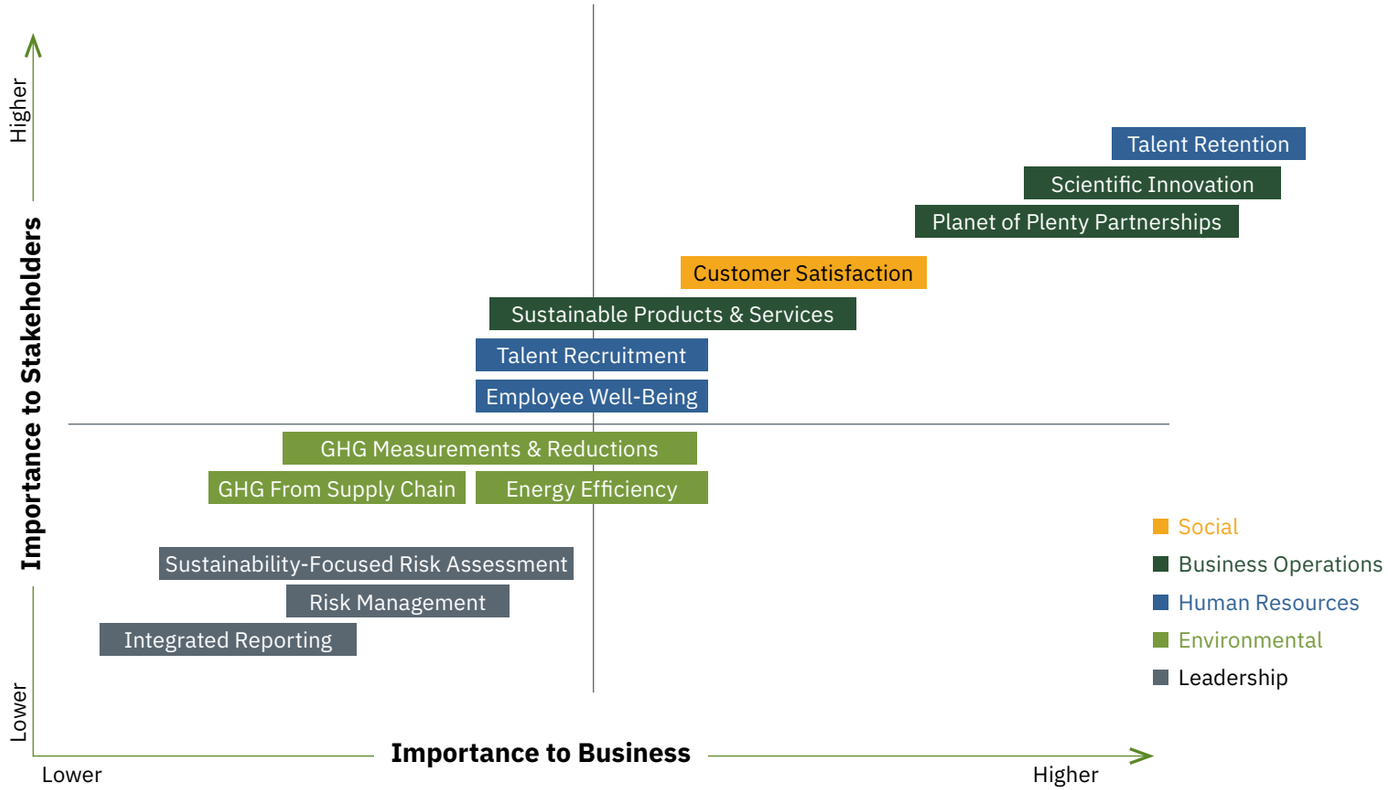
Responses included representation from Alltech's global footprint, with survey results from 18 countries: Australia, Brazil, Canada, China, Costa Rica, Denmark, France, Ireland, Italy, Japan, the Netherlands, the Philippines, Singapore, Spain, Switzerland, Thailand, the United Kingdom and the United States.

Highest-Ranked Topics in Each Category

Environmental	Human Resources	Leadership	Business Operations	Social
Greenhouse Gas Measurements and Reductions	Talent Retention	Risk Management	Scientific Innovation	Customer Satisfaction
Energy Efficiency	Talent Recruitment	Sustainability-Focused Risk Assessment	Alltech's Planet of Plenty™ Vision and Partnerships	Community Involvement/ Engagement Through Sponsorship, Donation and Volunteer Programs
Greenhouse Gas Emissions From Supply Chain	Employee Well-Being	Integrated Reporting	Sustainable Products and Services	Implementation of a Human Rights Policy

We focused on the top five ranked topics in each of the five categories to identify the highest frequency in which a topic was ranked. These highest-ranked topics were plotted in terms of their importance to stakeholders, and the frequency was used to plot against the importance to Alltech in a matrix. We found that the topics most important to both stakeholders and business strategy are talent retention, scientific innovation, Planet of Plenty partnerships and customer satisfaction.

Alltech Sustainability 2021 Materiality Assessment Results



Through this materiality assessment, we were able to identify the following topics as the most important for us. These insights will be used to inform the progression of our sustainability work and for the development of our key performance indicators.

Highest-Ranked Topics

1. Talent Retention
2. Scientific Innovation
3. Alltech's Planet of Plenty Vision and Partnerships
4. Customer Satisfaction
5. Sustainable Products and Services
6. Talent Recruitment
7. Employee Well-Being
8. GHG Measurements and Reductions
9. GHG from Supply Chain
10. Energy Efficiency
11. Sustainability-Focused Risk Assessment
12. Risk Management
13. Integrated Reporting

Key Performance Indicators

Labor

Employee Health and Safety

- Percentage of employees trained on health and safety issues
- Lost time injury frequency rate for direct workforce
- Lost time injury severity rate for direct workforce
- Safety training hours per employee

Working Conditions

- Number of employees covered with healthcare
- Amount of investment in workspaces

Child Labor, Forced Labor and Human Trafficking

- Number of child or forced labor incidents reported
- Number of inspections per year to audit factories for child or forced labor

Diversity, Discrimination and Harassment

- Percentage of employees trained on discrimination or harassment issues

Workplace Diversity

- Percentage of employees by gender
- Percentage breakdown of workers by race

Environment

- Percentage of the total workforce across all locations who received training on environmental issues
- Percentage of all operational sites for which an environmental risk assessment has been conducted
- Total Scope 1 and 2 energy consumption and GHG emissions
- Scope 1 and 2 energy consumption and GHG emissions per ton of product
- Percentage of total energy usage that is considered renewable
- Total Scope 3 GHG emissions
- Scope 3 GHG emissions per ton of product
- Total water consumption by source
- Water consumption per ton of product
- Volume of wastewater
- Total number of incidents of noncompliance associated with water use
- Total number of IUCN Red List Species within operation areas
- Total weight of non-hazardous waste generated, recycled, reused, recovered, transported, exported or imported

Sustainable Procurement

- Percentage of buyers trained on social and environmental issues within the supply chain
- Percentage of targeted suppliers that have signed the supplier code of conduct
- Percentage of targeted suppliers that have gone through a CSR assessment (e.g., questionnaire)
- Percentage of targeted suppliers that have gone through a CSR on-site or virtual audit
- Percentage of buyers across all locations who have received training on sustainable procurement

Science and Innovation: Helping Farmers Produce Food More Sustainably

For more than 40 years, Alltech has been helping farmers produce food more sustainably. Our nutritional technologies help optimize the nutrients in animal feed, supporting the health and performance of livestock. Alltech's support goes beyond nutrition to help producers improve efficiency, productivity and profitability with an array of analytical tools, services and equipment.

Reducing Agriculture's Carbon Footprint

Climate change threatens every environmental system and will potentially hinder agriculture's ability to feed the world. Today's dairy and beef producers face many challenges, from market volatility to shifting consumer preferences. Being able to accurately measure and manage the carbon footprint of their operations is integral to farm profitability. Alltech can help reduce the carbon footprint of milk and meat production through nutritional solutions that offer environmental benefits without compromising animal performance.

Alltech E-CO_2

UNCG Principle 9

Alltech E-CO_2 has pioneered the use of environmental tools and assessments to benchmark and improve on-farm efficiency, leading to increased profitability and sustainability. From individual farms to multinational organizations, Alltech E-CO_2's accredited service provides a comprehensive range of advice, tools and services to help measure and improve environmental performance.

Alltech E-CO_2 has carried out more than 15,000 on-farm assessments globally and developed assessment models for crops and all major livestock species. Accredited environmental assessments provide a wealth of in-depth data on animal production, health, feed, fertilizer, nitrogen balance, water, energy and resource use. Data collected is used to deliver practical, on-farm and online programs and benchmark reporting, with clear and concise consultancy advice for producers and industry leaders.

Feeds EA™

UNCG Principle 9

Alltech E-CO_2 launched Feeds EA™ (Environmental Assessment) early in 2021 to help customers measure and lower the carbon footprint of their feed. Feeds EA enables the calculation of emissions from each step in the production of feed: cultivation, processing, energy utilization and transportation. Through the use of Feeds EA, feed manufacturers can produce more sustainable feed, enabling farmers to choose diets with a lower environmental impact. Using Feeds EA also provides an opportunity to optimize a ration, as it demonstrates how formulation changes could reduce the carbon footprint of feed while increasing performance. Some ingredients carry a higher carbon burden than others, and the substitution or replacement of specific ingredients with more sustainable options can therefore have a major impact. Some feed customers have been able to reduce the global warming potential (GWP) of a ration by as much as 50% by partially replacing soybean meal with Optigen®. Feed emissions calculated via Feeds EA can also be used and implemented in the calculation of the carbon footprint of an entire farm assessment, or any other assessment that calculates the carbon footprint of an organization.

Alltech IFM®

UNCG Principle 9

Alltech IFM® is an in vitro fermentation model for ruminant rations that simulates rumen fermentation. Producers receive a customized report assessing a ration's digestibility and advice for optimizing rumen function. Farmers and feed manufacturers can use it to screen individual ingredients, formulate rations and make informed decisions on the quality of feed or total mixed rations (TMR).

Nutritionists often rely on nutritional models and chemical feed characteristics to formulate diets. However, this information is static and does not provide a complete evaluation of nutrient availability. Alltech IFM is a dynamic diagnostic tool that simulates the digestion of feed in the rumen in real time, which creates a comprehensive view of feed digestion, as opposed to a snapshot from a single point in time.

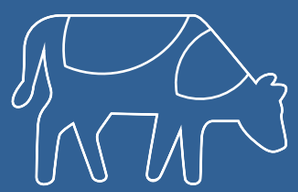
Feed samples are incubated using rumen fluid and a buffer system to mimic natural rumen fermentation in the animal. Feed samples can include concentrates, fresh forages, silages or total mixed rations. As digestion progresses, volumes of fermentation gases, such as methane and carbon dioxide, are continuously monitored using an automated system. This allows us to calculate the amount of energy lost as methane and methane emissions per animal.

Reducing GHG Emissions

Yea-Sacc®

Yea-Sacc® is a yeast culture specifically selected for use in beef, dairy and equine feeds. Its unique mode of action leads to enhanced digestibility and nutrient utilization, higher milk production in dairy cows and increased average daily gain in beef cattle. By converting more feed into milk or meat with Yea-Sacc, less methane is produced per kilo of output.

For a sense of Yea-Sacc's impact at scale, if Yea-Sacc was fed to Ireland's entire dairy herd (1.4 million cows), milk production could increase by 435,000 metric tons, meaning 75,000 fewer cows would be needed to meet current milk production! This would lead to savings in feed, enteric methane emissions, manure output, fertilizer, land and water.



If Ireland's 1.4 million cows were fed Yea-Sacc

milk production could increase by

435,000

metric tons

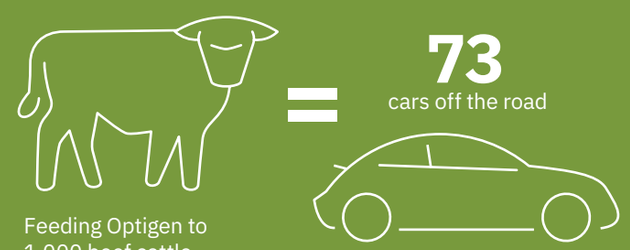
75,000 fewer cows would be needed to meet current milk production

Optigen®

Optigen® is an innovative ingredient that provides a slow release of non-protein nitrogen (NPN) to the rumen over time, with benefits for microbial protein, fiber digestion and energy availability for milk and meat production. Optigen can replace vegetable protein sources and enable producers to simultaneously improve animal performance, reduce their carbon footprint and increase profitability. Recently published meta-analyses in dairy and beef cattle highlight that the use of Optigen in dairy diets resulted in carbon savings of around 54 grams of CO_2e per kilogram of milk produced, and in beef diets, the partial replacement of vegetable protein with Optigen exhibited a consistent improvement in the liveweight gain (8%) and feed efficiency (8%) of beef cattle.

For example, if Optigen was incorporated into the diets of the entire dairy herd in Argentina, it would represent savings of 240,000 tons of soybean meal and 107,000 hectares of land from soybean cultivation — that is five times the size of Buenos Aires, the largest city in Argentina (with an estimated population of 15,257,673)!

Feeding Optigen to 1,000 beef cattle — aiming for each animal to gain 440 pounds (200 kilograms) — we can expect carbon savings of 111 tons of CO_2e, the same as taking 73 cars off the road.



Feeding Optigen to 1,000 beef cattle

73

cars off the road

Mycosorb

Mycosorb is Alltech's proprietary mycotoxin binder that is proven to deliver broad-spectrum mycotoxin binding, reducing the damaging effects of these unwanted toxins on animal health and productivity. In addition to binding mycotoxins, Mycosorb supports animal immunity and gut health in the presence of mycotoxins.

In recent meta-analyses of published studies in which Mycosorb was fed to either egg-laying or broiler chickens, the contribution Mycosorb makes to environmental sustainability is significant, as calculated by Alltech E-CO_2.

In egg-laying chickens, the increased performance from feeding Mycosorb led to a 3.76% reduction in overall carbon footprint. When this is applied to an operation with 100,000 layer birds and fed for 63 weeks, it is the equivalent of removing 124 cars from the road, grounding 221 round-trip transatlantic flights or planting 190 trees.

In broiler chickens, Mycosorb can improve environmental sustainability through improved feed conversion ratio and reduced mortality rates. When applying these results to a 100,000-bird operation, and including Mycosorb in the diet for 42 days, more than 21 tons of CO_2e could be saved. This equates to 52 flights from London to New York, or the annual CO_2 output of 14 cars.

100,000 layer birds fed Mycosorb for 63 weeks

221

round-trip transatlantic flights

Producing More Food With Less Land, Water and Energy

Over the last 60 years, the agriculture industry has accomplished amazing feats, including producing more food with less land. However, we need to become ever more efficient to feed the world's growing population without converting more land to agricultural use. It is imperative that we protect our remaining natural ecosystems to preserve biodiversity and maintain carbon sinks. We need to feed livestock without driving deforestation and conversion of grasslands to crop production. Therefore, it's important that animals make the most efficient use of the forage, crops and byproducts that they consume. This is essential for livestock producers as well, since feed can account for up to 70% of total production expenses.

Alltech® Enzyme Management

UNCG Principle 9

Alltech® Enzyme Management technologies break down fiber in feed and release nutrients that would otherwise not be available to the animal. This optimizes feed efficiency and allows farmers to use alternative feed ingredients and byproducts. This means more meat, milk or eggs with less feed. Reducing the amount of feed ingredients that it takes to raise animals reduces the amount of land, water, fertilizer and energy required. This can lead to an overall lower environmental footprint and lower costs for the farmer.

Alltech® Mineral Management

UNCG Principle 9

The Alltech® Mineral Management program guarantees organic minerals that are better absorbed, stored and utilized by the animal. This ensures the higher nutrient needs of modern livestock are met for growth, reproductive performance and animal health.

The Mineral Management team conducted a poultry meta-analysis to investigate how Alltech's Bioplex® and Sel-Plex® technologies can positively impact the sustainability of layer farming and egg production. Bioplex was found to consistently improve hen production and have no effect on feed intake, resulting in production of more eggs per kilogram of feed consumed. The meta-analysis also found improvements in shell strength and egg loss contributed to a reduction in food loss. Feeding Bioplex to a 1-million-layer flock could restore 384 tonnes of first-class eggs back into the supply chain. This number of eggs saved is equivalent to the size of 154 African elephants! Sel-Plex saw similar improvements in egg production with less feed consumption, all while boosting selenium content in eggs.

Alltech Crop Science

UNCG Principle 9

Alltech Crop Science is a global leader in microbial fermentation, nutrigenomics, amino acids, integrated pest management and natural surfactants. The team's research aids in producing solutions for healthy root development and plant growth while optimizing soil microbial populations. To keep soil healthy and thriving, Alltech Crop Science harnesses the powerful world of microbes. Healthy soil has plentiful nutrient content, biodiversity and a strong microbiome. As a result, it needs fewer chemical inputs, which reduces the risk of exposure to hazardous chemicals and environmental contamination.

Healthy soils are not only more environmentally sustainable, but they also represent a reliable and valuable resource for growers, their businesses and their families for years to come. Well-balanced soils that are rich in organic matter naturally supply nutritional and water requirements that would otherwise be supplemented by the grower, both reducing the environmental impact and saving the farmer money. Extreme weather events such as heat, frost, flood, drought and disease have all been worsened by climate change, straining plant resources and greatly reducing potential yields. Healthy, productive soils can offset these stresses, helping maintain optimal harvest yields and profitability for farmers.

Nutrigenomic research reveals the close connection between plant nutrition and natural plant defenses. To help farmers achieve top yield and quality, Alltech Crop Science applies nutrigenomic research to help optimize plant performance. It selects and grows specific bacterial strains that are naturally found in healthy soils. In stressful situations, these strains produce metabolites to protect themselves and modify their environment. Alltech Crop Science extracts these metabolites, which play a key role in the balance of the microbial ecosystem and the interaction between soil microbes and roots. By providing essential nutrients and unique microbial components, plants can better defend themselves, contributing to sustainable crop production by reducing the need for conventional pesticides.

Plants face a variety of biotic stresses that can result in diminished productivity and quality. For generations, farmers have used pesticides and other synthetic chemistries to protect their crops; however, as the demand for sustainable management practices increases, farmers have had to incorporate new technologies into their management programs to help optimize plant performance. Science meets sustainability in our efforts to improve plant health, quality, nutritional value and yield while decreasing the need for conventional chemicals.

Alltech True Check™

UNCG Principle 9

Alltech True Check™ is an analysis designed to simulate the digestive systems of poultry and swine, providing a prediction of nutrient release from feed. It allows us to quantify the benefits of adding enzymes and determine the best enzymes for individual feeds. This means we can formulate feeds that will deliver the most benefit for the animal while reducing inputs and environmental impact.

By simulating the digestive process in the lab, Alltech True Check provides a fast, effective screening method for novel diet formulations and enzyme additions. Use of Alltech True Check can reduce wasted nutrients, increasing production efficiency while also minimizing the environmental impact of animal production.

KEENAN and InTouch

UNCG Principle 7 8 9

KEENAN and InTouch provide precision diet feeding technology to formulate and mix rations that are customized for a farmer's herd. This enables farmers to reduce their environmental impact. Alltech completed a four-year analysis of 178 farms in the U.K., Ireland and France using KEENAN and the InTouch technology platform. The results showed that a KEENAN diet increased feed efficiency by 12%. Additionally, there was a 10% decrease in the amount of methane produced per liter of milk and a 3% increase in nitrogen use efficiency.

In the last 12 months, 279 farms have used KEENAN machines equipped with InTouch to utilize 159,486 tons of food waste and byproducts to feed animals. Annually, that is an average of 572 tons of waste per farm being diverted and utilized instead of being sent to landfills to decompose and produce methane.

KEENAN and MacRebur: Utilizing Plastic Waste for the Roads of Tomorrow

UNGC Principle 7 8 9

KEENAN mixers aren't just being used on farms to make environmental improvements. You can now find KEENAN machines involved in a variety of other environmentally friendly applications, such as the mixing of recycled plastic to make roads. KEENAN became a trusted partner of MacRebur at the start of its enterprise, and there is a KEENAN mixer in each of MacRebur's seven plants across the world.

MacRebur uses plastic waste that is destined for landfills or incineration and adds it into asphalt that is ready for road construction and surfacing. At just one of its plants in Spain, MacRebur estimates that it will save more than 1 million kilograms of carbon emissions in 2022, compared to other asphalt manufacturers. The plastic utilized in this asphalt helps to extend and improve the bitumen binder, the liquid binder that holds asphalt together. Intensive studies have revealed plastic roads to be more robust and flexible, improving the lifespan by up to 60%.

MechFiber300 diet feeders, which are equipped with a KEENAN controller and InTouch feed management technology, are used to mix granulated plastic waste with an activator developed by MacRebur to create a mix that is distributed to asphalt producers. The MechFiber machines use horizontal paddle action to produce an optimal mix that is never over- or under-processed. The KEENAN controller uses InTouch technology to offer real-time performance measuring and support service. It also gives clear instructions on the order and weight of ingredients, leading to maximized mix quality and consistency. This level of consistency was critical for the partnership with MacRebur.

"Quality is extremely important to us at MacRebur — we can't have any variability in our batches, so we need to make sure our product is consistent," said Gordon Reid, co-founder of MacRebur. "This is the main reason we chose KEENAN. In addition, the KEENAN controller enables us to use exactly the right amount of activator to create the correct blend."

Reducing Air and Water Pollution

Nitrogen and Ammonia Emissions

UNCG Principle 8

Ruminants excrete 75-95% of the nitrogen in their diets due to poor utilization (FAO). In Europe, every kilogram of excreted nitrogen costs €14 (roughly US$16.50) in human health and ecological damage. A recently published meta-analysis highlighted that Optigen® improves nitrogen use efficiency by 4%, leading to a nitrogen excretion intensity reduction of 4%.

Ammonia emissions are a deadly source of air pollution and can significantly impact human health. In some countries, animal manure can account for up to 90% of ammonia emissions. The evaluation of De-Odorase® to control ammonia began in the early 1990s. Our research shows that De-Odorase reduces atmospheric ammonia levels in pigs' weaner and grower pens steadily throughout the growth period. Ammonia levels in the weaner houses were reduced by 46-50%, while levels in the grower pens decreased by 65%. This initial work with De-Odorase paved the way for intensive research for both swine and poultry. Similarly, using De-Odorase in broiler feed has shown a significant reduction of the ammonia concentration in sheds by 38%.

Ammonia levels in the weaner houses were reduced by

46-50%

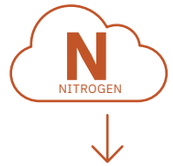
Nitrogen Runoff

UNCG Principle 8

Excessive nitrogen in rivers, lakes and oceans can lead to dangerous algal blooms and dead zones. Agriculture is under increasing pressure to reduce nitrogen runoff from fertilizer and manure.

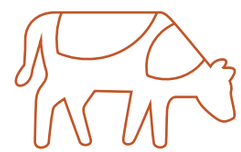
Optigen® is proven to reduce manure nitrogen excretion in dairy cows by 12-13 grams of nitrogen per cow per day. This data suggests that the use of Optigen could reduce the annual manure nitrogen excretion from the U.S. dairy sector by an average of 51,509 tons of nitrogen, based on the annual milk output.

Allzyme® SSF is derived from a select (non-GMO) strain of *Aspergillus niger* using Alltech's unique solid state fermentation process. Allzyme SSF allows for flexible feed formulation through the inclusion of byproducts and alternative raw materials and by reducing the density of the diet. It also promotes nutrient release — including the release of amino acids, calcium and phosphorus — and optimizes feed digestibility while supporting a healthy animal digestive system. Allzyme SSF targets multiple substrates in the animal diet to promote improved digestibility and enhanced nutrient utilization. Studies have shown a reduction in nitrogen and phosphorus in manure, which lessens the environmental impact of animal waste. Allzyme® Vegpro allows the animal to better utilize protein sources in the diet while maximizing nutrient digestibility. Feed efficiency is key as we continue to produce more food to feed the growing population. Allzyme Vegpro supplementation reduces the environmental impact and the cost of production, with studies showing a reduction in the nitrogen excretion ratio.



12-13

grams of nitrogen reduction per cow per day



Mineral Pollution

UNCG Principle 8

Alltech's Total Replacement Technology™ (TRT) focuses on feeding organic trace minerals that are better absorbed, stored and utilized by animals than traditional inorganic trace mineral supplements. Increased nutritional efficiency aids in better digestion and lower feed consumption. Alltech has proven that organic trace minerals in the form of Bioplex® and Sel-Plex® can be included at significantly lower levels while improving animal performance and reducing excretion of minerals into the environment.

The Alltech U.K. poultry team carried out a meta-analysis to investigate how Alltech technologies can positively impact the sustainability of layer farming and egg production, with a focus on Bioplex and Sel-Plex. Bioplex was found to consistently improve hen production and have no effect on feed intake, leading to producing more eggs per kilogram of feed consumed. The team also found that improvements in shell strength and egg loss contributed to a reduction in food loss.

Supporting Animal Health and Welfare

Alltech® Mycotoxin Management

UNCG Principle 9

Extreme weather patterns and changing agricultural practices such as no-till and reduced pesticide applications may increase the chance that mold will damage animal feed. These molds can produce mycotoxins that harm animal health and performance when ingested. This reduction in productivity has the subsequent effect of increasing agriculture's environmental footprint.

The Feed and Agriculture Organization (FAO) of the United Nations notes the importance of feed safety in ensuring food safety and human health, as well as animal health and welfare. Feeds with high mycotoxin levels are known to lead to increased mortality rates. The holistic approach of Alltech® Mycotoxin Management aims to inform producers of the best practices for reducing mycotoxin risk, from crop planting to the delivery of feed to animals, promoting feed safety and decreasing feed losses at each step.

Mycotoxin Testing

The Alltech 37+® mycotoxin analysis is the cornerstone of our mycotoxin identification capabilities. Each year, nearly 7,000 samples are tested in Alltech labs globally, with each test searching for 54 individual mycotoxins. Alltech 37+ test results provide a realistic picture of mycotoxin contamination in feed ingredients, forages or TMRs to speed up proper diagnosis, effective remediation and the development of a mycotoxin control plan.

Alltech® RAPIREAD® connects modern testing devices with the latest mobile technology, allowing producers to test, identify and analyze the results in just minutes. Highlighting real-time mycotoxin contamination on-farm or in the feed mill, Alltech RAPIREAD provides users with 24/7 online access to detailed results and actionable insights, all helping to maintain production efficiency, profitability and animal health.

Mitigating the Mycotoxin Challenge and Enhancing Animal Welfare

Designed to remove mycotoxins from the animal's digestive tract before they have a chance to cause serious harm, Mycosorb also contributes to greater animal welfare and environmental sustainability. A recent meta-analysis of 25 broiler studies demonstrated that the inclusion of Mycosorb during a mycotoxin challenge reduced bird mortality by up to 90%.

Harvest Analysis Programs

UNCG Principle 8

Each year, Alltech completes Harvest Analysis Programs across Europe, North America and Latin America. These analyses of new crop grains and forages provide a broad representation of mycotoxin risk across each of these regions. Using this data and insights, both feed mills and livestock producers can ensure they are putting in place the necessary mycotoxin mitigation strategies, depending on where they are sourcing their feed ingredients. Building on our goal to always provide the animal feed chain with the most relevant and insightful mycotoxin information, we are working with SGS, the world's leading testing, inspection and certification company, on this year's European Harvest Analysis, enabling us to deliver an even greater representation of mycotoxin contamination across the key grain and forage producing regions of Europe.

Mycotoxins in Aquaculture

UNCG Principle 9

As the aquaculture industry moves toward using more sustainable plant-based ingredients, the mycotoxin risk in fish diets increases. Supporting our ambition to understand more about the impact of mycotoxins in aquaculture and the role of Mycosorb in fish diets, our alliance with Ocean University China (OUC) has allowed us to publish two recent studies on turbot. Both studies demonstrated the positive effects of Mycosorb in reducing the negative effects of mycotoxins on turbot. Further leveraging the strength of our university alliances, a Ph.D. study is underway between Alltech Coppens and Wageningen University to better understand the mycotoxin presence in fish diets and the impact this can have on subsequent health and performance.

Reducing Antibiotic Use and Antimicrobial Resistance

Alltech® Gut Health

UNCG Principle 7

Governments are putting restrictions on the use of zinc oxide (ZnO) in piglet feed. Zinc oxide has traditionally been used to control diarrhea in weaning pigs, but it can be toxic to the animal and can pollute the environment when it is excreted in manure. It also increases bacterial antibiotic resistance development in weaned pigs. Alltech's Seed, Feed, Weed solution for poultry, calves and pigs through the Alltech® Gut Health program can be a solution to this problem.

In order to promote sustainability in agri-food and pursue our Planet of Plenty™ goals, the Alltech Gut Health strategy focuses on three main areas of gut health: reducing antimicrobial resistance, supporting natural immunity and ensuring food safety. When your animal becomes sick, the Alltech Gut Health program increases the efficiency of antibiotics to fight sickness. A healthier gut reduces the need for antibiotics on-farm and antibiotic resistance among farm animals. The Alltech program balances the microbial diversity in the gut and supports the animal's natural immunity. This increased immunity reduces antimicrobial resistance in the animal and the risk of food-borne illnesses.

Actigen®

Actigen® is a second-generation, unique bioactive product derived from *Saccharomyces cerevisiae*, selected by Alltech and isolated to create a more effective gut health solution. Actigen was developed to be a traceable form of yeast carbohydrate for beef cattle, dairy cows, poultry, pigs, aqua, pet and equine. Actigen is able to support immune defense, gut microbial health, and gut function and development, thereby promoting overall health and performance.

Actigen also reduces negative environmental impacts by contributing to a reduction in food loss and improving protein output. Actigen's efficiency lessens the amount of commodity feed needed for animal production and therefore directly reduces arable land use. In terms of animal welfare, Actigen use in feed benefits animal health by improving gut health and helping to decrease the mortality of laying hens by nearly half (46%).

Through Actigen lifecycle assessments for both poultry and pigs, we have been able to establish the following data:

Layers

- Decreased GHG emissions by an average of 5.4% in egg production systems

Pigs

- Improved pork production efficiency and increased edible protein output
- Improved digestive health and animal welfare
- Reduced nitrogen and phosphorous excretion
- Reduced "days to slaughter" and carbon footprint; Actigen use in feed decreased emission intensity by an average of 3.5% (-0.11 kilograms CO_2e per kilogram liveweight)
- In terms of resource efficiency, for 100,000 pigs, Actigen helps to use 385 tonnes of feed, which is equivalent to 14 feed lorry deliveries, or 38 hectares of land from soya cultivation/21 hectares of land from corn cultivation.
- In terms of welfare, Actigen use in feed reduces sub-therapeutic use of antibiotics or super-dosing minerals.

Sustainable Aquaculture

Alltech Coppens

UNGC Principle 1 2 8

The process of making global aquaculture more sustainable starts by looking at the raw materials used for feed and fish production. At Alltech Coppens, the R&D and Procurement departments evaluate all raw materials used in our aquaculture products, ensuring they are sustainably and responsibly sourced and ultimately benefit farm performance and the future of our industry and planet. With the dual concern of increased climate risk and business's impact on the depletion of natural resources, Alltech Coppens has made water efficiency and reuse and sustainable procurement for its fish feed ingredients central to its sustainability strategy.

The Alltech Coppens Aqua Centre (ACAC) utilizes recirculating aquaculture systems (RAS). These systems are specifically designed to use freshwater supplies as economically and efficiently as possible and reduce the burden on water resources. Additionally, Alltech Coppens' R&D and Procurement departments evaluate all raw materials used in our aquaculture products, ensuring they are responsibly and sustainably sourced. With data sourced from the Global Feed Life Cycle Institute (GFLI) and BLONK databases, different feed is characterized according to its impact on different factors, such as climate change, acidification, etcetera. That data is combined within the database at ACAC, which has led to our sustainable feed index.

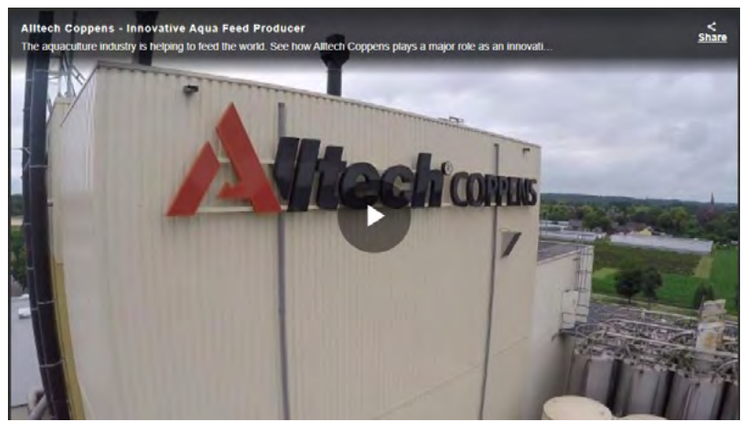
To reduce the use of ingredients of marine origin, such as fish feed and fish oil, that have detrimental impacts on the environment, Alltech Coppens focuses on lowering the FIFO factor (fish in fish out ratio) by using fish meal alternatives, such as:

- Animal byproducts
- Vegetable protein sources
- Insect meals
- Byproducts from human consumption

While global aquaculture production has achieved a 0.27 FIFO rate, Alltech Coppens lowered the FIFO factor to 0.10, which means only 100 grams of wild-caught fish are needed to produce 1 kilogram of farmed fish.

In 2020, Alltech Coppens replaced 60% of its marine products with trimmings and continued replacement efforts in 2021. Upcycling trimmings to produce marine products also fits within the vision of a circular food system, as waste is recycled into valuable nutrients and is considered more sustainable than marine products sourced from forage fisheries. In 2020, 100% of Alltech Coppens fishmeal and krill meal was certified or produced from trimmings. For fish oil, this was 88%. Alltech Coppens changed the sourcing of its fish oils in the last quarter of 2020 with the goal of achieving a 100% score in 2021. In addition, Alltech Coppens only buys certified soy products and does not use any palm or palm-related products. It is working to decrease the usage of whole fish products.

Alltech Coppens strives to positively impact the market in which it operates, and sustainability is embedded in the business strategy. Its ambitions for the future include zero waste emissions throughout the lifecycle of fish feed by 2030, zero CO_2 emissions throughout the product life cycle through an uncompromising pursuit of energy saving and utilization of renewable energy to achieve a carbon-free society by 2050. Alltech Coppens firmly believes that a sustainability strategy is a corporate strategy and sustainability issues are business issues. To learn more about Alltech Coppens and its sustainability-driven work, view its 2021 Planet of Plenty Report.



Guabi Animal Nutrition and Health

UNGC Principle 1 2 8

In Brazil, Guabi, which is part of the Alltech family of companies, is working to improve its supply chain's sustainability.

"Our soybean meal suppliers are international companies that have huge controls on the sourcing, are signatories of public agreements of no deforestation and have 100% traceability, and our most important supplier monitors 8,000 farms, 11.6 million hectares inside the Cerrado biome, mostly in the Amazon biome," said João Manoel Cordeiro Alves, aquafeed product manager at Guabi Animal Nutrition and Health.

Soybean suppliers for Guabi adhere to restrictions like a soy moratorium in the Amazon and the Green Grain Protocol of Para, as well as labor regulations. All the ingredients Guabi sources are regulated by Brazil's Ministry of Agriculture Livestock and Supply, known in Brazil as MAPA.

"Brazil is among the biggest food producers — the biggest in the temperate and sub-temperate regions — and is the biggest in soybeans," said Alves. "Out of this production, only one-third is produced in the legal Amazonia area; the rest is produced in other regions. Most of the soy produced in the legal Amazonia area is produced out of the limits of the Amazon biome (rainforest)."

Alltech Life Sciences

Though formally launched in 2010, Alltech Life Sciences applies our more than 40 years of research experience and scientific expertise to human health. We aim to help people live their best lives, conducting research on digestive health and brain health, including clinical trials related to Alzheimer's disease.

Additionally, our revolutionary breakthrough in diabetes research may provide an alternative to current insulin treatments. The compound, called NPC43, acts as an insulin replacement in insulin-deficient and insulin-resistant conditions, and it is effective when administered orally. This could lead to the elimination of injections, pens and pumps, and provide an affordable alternative to insulin for those who suffer with Type 1 or Type 2 diabetes.

In March 2021, Acutia, a wholly owned subsidiary of Alltech, launched a suite of supplements that have been developed with the support of the research conducted by Alltech Life Sciences.

Acutia

UNCG Principle 8

Alltech views Acutia as a natural extension of our business, allowing us to directly support people in their pursuit of sustainable wellness. In a time when we are all deeply aware of the importance of our health, Acutia's launch was particularly important.

Acutia's initial line of products was rolled out in phases, beginning with Acutia Selenium. This supplement provides immune system support, antioxidant benefits and essential nutrition, and it helps maintain healthy thyroid function. Acutia Brain Health supports cognitive health and brain function, and it provides antioxidant benefits and essential nutrients by combining selenium, vitamin C and plant-based omega-3 DHA.

Acutia's focus on sustainable wellness extends to its unique packaging and refill system, combining nutrition science with a sustainable packaging system that helps reduce waste. Customers can choose if they would like to receive or forgo a complimentary starter kit, which is packaged in a recyclable box, made from partially recycled material certified by the Sustainable Forestry Initiative (SFI), and which includes a reusable glass storage jar and a travel container. Supplements are provided in compostable pouches that can be used to refill the reusable glass jar or the customer's own storage container. These pouches are shipped in envelopes made of post-consumer waste. To offset carbon emissions from shipping, Acutia partners with Nori to support farming practices that sequester CO_2 from the atmosphere, supporting a healthy future for both people and our planet.

Sustainable Wellness

Selenium deficiency affects between 500 million and 1 billion people globally, including in some parts of the U.S.

Selenium is an essential nutrient, meaning it is required for normal body functioning but cannot be made by your body; therefore, it must be derived from food or supplements.

Selenium is an antioxidant and protects cells from free radicals. Selenium also supports the immune system and healthy thyroid function.

The selenium found in Acutia Selenium is made from a specialized strain of brewer's yeast, formulated specifically for quality, bioavailability, safety and efficacy.

Sustainable Operations: Reducing Our Footprint

All companies must work diligently over the coming decades to reduce their greenhouse gas emissions, energy consumption, water use and waste. This is a non-negotiable for companies that want to be good corporate citizens and help solve climate change and other urgent environmental issues to preserve the planet for future generations. Alltech is working to reduce our carbon footprint to decrease our impact on the environment.

Science Based Targets

In 2019, Alltech committed to the Science Based Targets initiative. In 2021, we completed an assessment of our baseline Scope 1 and 2 greenhouse gas emissions. We are currently completing our Scope 3 baseline emissions estimate and developing emissions reduction targets and plans.

Alltech's 2019 Baseline Greenhouse Gas Emissions

GHG Emissions

Scope 1	Scope 2	Scope 3
109,247 $MTCO_2e$	49,887 $MTCO_2e$	2019 baseline being developed
Direct Emissions Company facilities and non-electric vehicles. Direct emissions from company activities and resources we own and control.	**Indirect Emissions** Indirect emissions that are created during the production of energy used by the company.	**Other Indirect Emissions** Indirect emissions from sources not controlled by the company but caused from its activities. Includes both the upstream and downstream value chain associated with areas such as business travel, procurement, transportation, waste, water and use of products sold.

Reducing Our Energy Footprint

UNCG Principle 7 8 9

Alltech's commitment to the Science Based Targets will require significant investments in energy efficiency and renewable energy as we work toward our 2030 reduction targets. We began the journey this year with our first renewable energy project, a solar photovoltaic system located on-site at our manufacturing facility in Serdan, Mexico.

Alltech's Serdan facility is located about 120 miles southeast of Mexico City. The plant produces two main products: Allzyme® SSF, a natural enzyme complex that maximizes nutrient release, and De-Odorase®, made from yucca extract, which reduces ammonia from animal waste. The state-of-the-art production facility is one of the largest facilities of its kind in the world. The Serdan facility has a long history of sustainable operations — for every yucca tree harvested to produce De-Odorase, three trees are planted — and reducing the energy footprint is in line with our larger global sustainability commitments.

Photovoltaic Installation

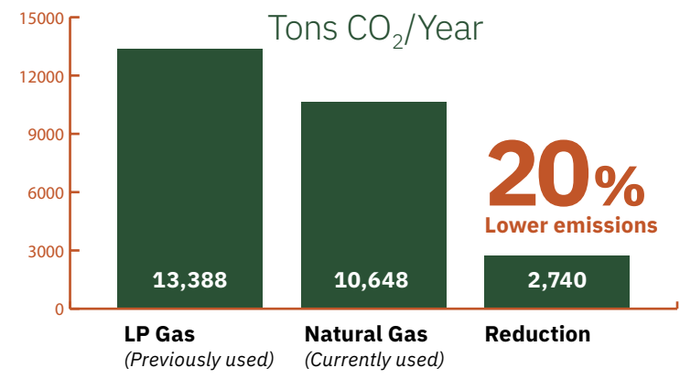
The sun provides clean, pure energy for solar power systems that reduce both energy costs and greenhouse gas emissions. Our Serdan facility was a natural choice for our first solar energy project due to the high solar irradiation, which results from its latitude, high altitude and low rainfall.

The photovoltaic system will provide 46% of Alltech Serdan's energy requirements. With the new system, Alltech will have a 22% energy cost savings in the first year and a reduction of 650 tons of carbon dioxide equivalent (CO_2e) emissions per year. That reduction is equivalent to 11,000 tree seedlings growing for 10 years!

In addition to the installation of the photovoltaic system, the Serdan facility is converting from using liquefied petroleum gas (LPG) to using

compressed natural gas (CNG), a more environmentally friendly fuel. The project will lead to a reduction of the Serdan facility's environmental footprint. CNG emits 30% less carbon dioxide (CO_2) and 65% less carbon monoxide (CO) than LPG. Additionally, the emissions of nitrous oxide are very low, and no sulfur or heavy metals are produced.

The independent company SEITON officially confirmed there will be a reduction of 20% in facility CO_2 emissions. Initially, the project was expected to reduce CO_2e emissions by 570 tons per year, but the actual reduction will be 665 tons CO_2e per year.



Compressed Natural Gas Conversion

22%
Energy cost savings

-650
$MTCO_2e$ per year

Up to **46%**
clean energy

Alltech's Environmental Policy

UNCG Principle 7 8 9

Alltech and its subsidiaries recognize that protecting the safety and well-being of the environment is essential to achieving sustainable development as outlined by the United Nations Sustainable Development Goals. Alltech's environmental policy commits Alltech to identify, avoid and manage risks to the environment from its operations. The policy also recognizes that Alltech's Planet of Plenty™ vision and its related activities can generate environmental benefits and commits Alltech to pursue them. Guided by Alltech's ACE principle, which emphasizes delivering benefit to Animals, Consumers and the Environment, the policy requires alignment with compliance obligations in each facility to prevent pollution and protect natural resources; the systematic application of management practices that promote sustainable use of natural resources; and active engagement with the local communities, legislators, regulators and other organizations who share an interest in Alltech's environmental performance. Alltech will seek continuous improvement as it works to reduce its environmental impact in partnership with its suppliers and customers.

Packaging

Bag Recycling and Biodegradable Containers

UNCG Principle 8

Ridley Block Operations (RBO) joined the Alltech family in June 2015. RBO is the industry leader in self-fed supplements and focuses on four branded product lines: CRYSTALYX®, SWEETLIX®, STOCKADE® and ULTRALYX®. The company also provides private-label manufacturing to customers across the United States. In 2020, RBO underwent a major project to update all product packaging through a redesign of all bags. The new bags are recyclable and make a smaller impact on the environment. All of the polypropylene used in RBO's packaging is a byproduct of natural gas and petroleum refining, allowing it to efficiently use a waste product from another industry. The company also continues to promote the 100% biodegradable and renewable BioBarrel® container for CRYSTALYX. The BioTub® is also available for private label customers.

People and Communities

UNGC Principle 1

Alltech believes that all our activities should be guided by a sense of purpose, which drives our support for the communities in which we operate. Our team members adopt local causes that are close to home, giving each endeavor personal attention. For this reason, we established the Pearse Lyons ACE Foundation, a charitable foundation to help fund the philanthropic efforts of our company, employees and partners around the world.

It is our belief that education is the primary catalyst for success and that progress is driven by insatiable curiosity. Alltech leads multiple initiatives to inspire the next generation of change-makers. Throughout the world, examples of Alltech's educational initiatives abound. From classroom science laboratories in Kentucky to entire primary schools in Haiti, Alltech has shown its strong support of education across every region.

Our scientists and colleagues are active in local agri-science education outreach across the globe. They visit classrooms or appear virtually to discuss and demonstrate scientific activities, provide expertise for events such as science fairs and serve as resources for community educators and organizations.

COVID-19 Response

UNGC Principle 2 8

> "Alltech and team kickstarted the COVID response for our industry."
>
> —Constance Cullman, CEO, American Feed Industry Association (AFIA)

These are unprecedented days that require a greater level of collaboration. As a multinational business, Alltech has been tracking COVID-19 since it first emerged, and our ability to navigate the pandemic with speed and effective communication has been supported by our local teams. To help ensure the health and safety of colleagues, customers and the communities in which we live and work, our company policies and procedures have been developed by a dedicated task force representing the more than 120 countries in which we operate.

Our multidisciplinary COVID Task Force representatives are available to our colleagues around the world to answer questions, address concerns and provide support and guidance. Our COVID-19 Resource Portal was made available to everyone who might benefit and has been kept up to date with additional resources and country-specific content as the pandemic has progressed.

COVID-19 Resource Portal Features

- "Forging the Future of the Farm & Food Chain": Special discussion series with a spotlight on the global food supply chain and the people within it who keep store shelves stocked and families fed.
- "The Science of COVID: Mythbuster Series": Includes a vaccine Q&A with Dr. Joe Morris of St. Joseph Healthcare in Nicholasville, Kentucky.
- Tips and resources to help team members adjust to working from home.
- General resources, including COVID testing policies, daily health checklists, farm visit policies, educational infographics and more.

During the protracted COVID-19 emergency, Alltech has provided a series of critical mitigation efforts to prioritize physical and mental safety. From PPE to doctors, wellness webinars, health and safety trainings, and corporate policies for personal travel and vaccination, Alltech has maintained health and safety protocols.

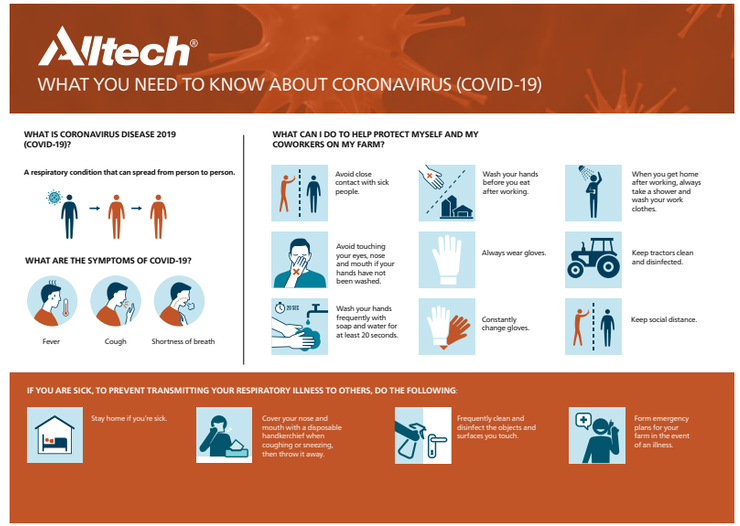
By the time peak infections hit the U.S. in June 2020, Alltech had already established a COVID Task Force and COVID management policies. Operations in Kentucky and Brazil repurposed their production to provide much-needed hand sanitizer to state and local communities, respectively. The Alltech production plant in São Pedro, Brazil, produced and provided 500 liters of sanitizer to the local hospital. In Kentucky, Lexington Brewing & Distilling Co., originally founded by Alltech founder Dr. Pearse Lyons, did the same for the state and local response. At Alltech's headquarters in Nicholasville, Kentucky, our team demonstrated an unwavering commitment to our colleagues' health and well-being and organized an on-site drive-thru vaccination clinic in April 2021. The clinic welcomed family members of Alltech colleagues and those in the local community. We also offered a vaccine clinic in September 2021.

Health and Safety Trainings

UNGC Principle 2

The Alltech Wellness Portal was launched during the pandemic and includes a variety of company-supported resources to foster good health and well-being for all team members, including assistance programs, health and safety information, education tools, mentorship and more.

The Alltech Wellness Mentors program launched globally with colleagues trained through the STARS Well-being program, an evidence-based approach that aims to reduce stress and anxiety.



Wellness

UNGC Principle 2

During this particularly challenging time of social distancing and working from home, Alltech leadership has worked — and continues to work — assiduously to communicate with team members and customers about remaining productive while combating the effects of isolation, remaining informed and exercising self-care.

Alltech also produced various educational resources to amplify the science behind COVID-19.

Harnessing internal expertise, Alltech provided webinars with Alltech nutritionist Nikki Putman Badding, director of Acutia and human nutrition initiatives at Alltech, on how to stay healthy during COVID.

- Additionally, Alltech shared information on production site policies, work from home tips, travel guidance and resources in Spanish.
- Internally, "Wednesday Wisdom" communications were established to share information and tips on maintaining physical and mental well-being during the pandemic.

Alltech's Human Rights Policy and Code of Conduct

UNGC Principle 1 2 4 5 6 10

This year, we introduced a Code of Conduct to clearly communicate our values and set expectations for behavior, decision-making, business practices and anti-corruption. There is nothing more important than the integrity and quality of character represented by Alltech. It is not a request, but an expectation, that we all act with honesty and abide by the values detailed within our Code of Conduct. To support our shared commitment to the values and culture represented within the Code, we have established a Speak Up! Reporting System. This confidential system administered by an independent third party enables our team members to make us aware of issues that are inconsistent with the law or our values, policies or Code of Conduct.

We also created a Human Rights Policy to uphold our commitment to the protection and advancement of fundamental human rights. Alltech will not tolerate the use of exploitative child labor, forced, compulsory or other forms of involuntary labor, or human trafficking in any of its operations. We also expect suppliers and contractors to uphold the same standards.

Support After Extreme Weather: Iowa Farmers

In the wake of extreme weather that devastated several communities across Iowa on Aug. 10, 2020, Alltech established the Iowa Derecho Devastation Relief Fund to match donations dollar for dollar and provide goods and services to farmers and their local communities who were directly impacted.

Funds were donated to the Iowa Cattlemen's Association, the Iowa Pork Producers Association and the Iowa Corn Growers Association, who ensured aid reached the rural communities most in need of assistance.

Support for Young Agricultural Communications Leaders

UNGC Principle 9

Agricultural communicators are essential to help educate and bridge the gap between rural and urban audiences on food production, innovation and technology. Traditional and new media platforms allow these stories to be told and shared beyond borders, with the next generation of agricultural communicators leading the way.

"As a voice for the farmers and ranchers who work hard to feed our growing world every day, agriculture communicators help educate consumers about our industry and how food is produced," said Jenn Norrie, communications manager at Alltech.

Make a Difference Day

To honor the memory and legacy of our late founder, Dr. Pearse Lyons, who passed away in early 2018, Alltech team members celebrate his birthday, Aug. 3, through social and environmental initiatives spearheaded by our more than 90 local offices throughout the world. In conjunction with wider global initiatives, each office determines its own activity and reports back on the results. From supplies and food donations to schools, from tree planting to trash pickup, our team members make a difference across all regions on this special day.

Mexican Center for Philanthropy Award

UNGC Principle 1 8 9

For the fourth consecutive year, Alltech Serdan was recognized by the Mexican Center for Philanthropy (Centro Mexicano de la Filantropia – CEMEFI) as a Socially Responsible Company (Empresa Socialmente Responsible Award- ESR). This Latin American recognition requires the Alltech Serdan team to demonstrate improvements in quality of life for employees, environmental preservation according to Alltech's Planet of Plenty™ vision, be in compliance with legal and ethical procedures that guarantee customers' reliability in the products they receive from Alltech, and make a difference in the community, primarily by supporting educational activities.

Alltech Serdan's specific ESR projects and contributions to the United Nations Sustainable Development Goals include:

Quality Education:

- Working on support projects with local schools, including El Cerrito Primary School and CAM (Centro de Atencion Multiple), a school for children with special needs.

Life on Land:

- Compliance with Alltech Serdan's yucca reforestation program. Yucca extract is a unique product that is included in De-Odorase® due to its ability to reduce ammonia from animal waste. For every yucca log that is harvested, Alltech Serdan plants three.

Decent Work and Economic Growth:

- All of Alltech Serdan's team members are included in training programs and are given opportunities for growth.
- On-site medical services are provided for team members to help support their well-being.
- Alltech Serdan's Purchasing Department works with local suppliers to contribute to the local economy.

Climate Action:

- The team works on various projects related to environmental issues, such as solar panel installation and beehives.

Women in Food & Ag Survey

UNGC Principle 1 8 9

The challenges associated with the ever-increasing global population have made it more important than ever for the agri-food industry to be able to perform at its full potential. Inclusion and diversity in the workforce are essential to shaping a sustainable future — and yet, according to the Food and Agriculture Organization (FAO) of the United Nations, the gender gap in the food and agriculture industries is extensive. To gather real-world insights into the professional landscape for women in agriculture, Alltech partnered with AgriBriefing in 2019 to collect feedback about the barriers that impede progress and to identify the resources needed to ensure workplace equality.

As 2020 ushered in unprecedented challenges for agriculture, new questions were added to the survey to gauge potential inequalities exacerbated by COVID-19. To further globalize this effort and increase accessibility, the survey was made available in six languages. Women and men in all sectors of the food supply chain were encouraged to contribute.

The Women in Food & Ag Survey has consistently revealed that a lack of mentorship is a barrier to success for women working within the agri-food industry. For 2021, Alltech is pleased to partner with WFA to convert insight into action through the Women in Food & Ag Mentorship Program. Launching in Q4, the program connects professionals from around the world, matching mentees with mentors to provide career guidance and champion mutual success.

Learn more about the survey and read stories about women in the food and ag industry.

Alltech Sustainable Haiti Project

UNGC Principle 1 2

Only 10 days after a devastating earthquake hit Haiti in 2010, Dr. Pearse Lyons traveled to the country to see how Alltech could help. This was the beginning of the Alltech Sustainable Haiti Project in the towns of Ouanaminthe and Dondon, with the goal of helping build a sustainable future for Haitian residents.

There can be no sustainability without education, which is why the Alltech Sustainable Haiti Project includes complete financial responsibility, renovations, educational support, meals and clean water distribution for the students and staff of three grade schools in northern Haiti.

In Haiti, the poorest country in the Western hemisphere, centuries of poverty have resulted in poorly built and maintained structures and sprawling slums comprising makeshift housing. Additionally, unsustainable timber harvesting and agricultural clearing have resulted in devastating soil erosion. This has increased the frequency of flooding and reduced the country's agricultural potential. Natural disasters like the 7.2 magnitude earthquake that struck Haiti in August 2021 continue to compound these socioeconomic problems for residents.

More than 2,000 lives were lost in the most recent powerful earthquake. Thankfully, Alltech was able to connect with its colleagues in Haiti, who communicated that the schools' teachers, children and families in Ouanaminthe and Dondon were safe.

The COVID-19 pandemic has also continued to affect Haiti, but despite the challenges, both the parents and children were excited for school to resume. The schools, which are now back in operation, are practicing proper safety measures consistent with schools across the globe.

The Pearse Lyons ACE Foundation helps fund the ongoing efforts that support the communities of Ouanaminthe and Dondon, including after natural disasters and during the COVID-19 pandemic.

Sustainable economic growth is the key to making a long-term difference in Haiti, which is why we are investing in its future at the grassroots level. The project has also resurrected a Haitian gem: the country's 100% shade-grown Arabica coffee, which Alltech markets and sells as Alltech® Café Citadelle.

Together, we are helping build a more sustainable future in one small part of Haiti by creating employment opportunities for the Haitian people and sparking a lifelong love of learning in its children.

10th Annual Alltech Global Feed Survey

The Alltech Global Feed Survey is an invaluable barometer for the state of animal feed production. Fortified by a decade of documentation and research, it is the strongest evaluation of compound feed production and prices in the industry and is the most complete data source of its kind.

"This has been an exceptional time for the agri-food industry," said Dr. Mark Lyons, president and CEO of Alltech. "Agriculture stood strong in the face of adversity, and the global food supply chain continues to provide one of the most basic needs for human survival. The data and insights we have gathered reflect challenges, successes and extraordinary opportunities as we chart a course for the future."

Going beyond the numbers for a holistic look at the state of the industry, the survey also incorporates qualitative questions to uncover trends such as COVID-19, sustainability and antibiotic reduction.

Feedback from the survey highlighted challenges, including government regulations and consumer demand of more sustainable practices to lower the use of nitrogen and reduce or eliminate antibiotics in both broiler operations and dairies. In parts of Europe and Latin America, there is a greater movement toward antibiotic-free (ABF) feed production. In countries such as Italy, the regulation of ABF is conducted through the government, while in the U.K. and Brazil, producers are adopting more sustainable practices to comply with consumer demands. Brazil saw increased investments in antibiotic-free broiler meats, while Slovenia saw increased efforts to establish sustainable practices as demand grew for organic milk production.

The results of the survey, including species-specific feed production numbers, interactive graphs and maps, are available here.

U.N. Food Systems Summit Involvement

UNGC Principle 9

Alltech was honored to be selected to host two events in the lead up to the historic U.N. Food Systems Summit. The first of these was the Alltech Food Systems Dialogue, which brought together global private sector stakeholders to discuss the role of innovation in revolutionizing our world's food systems, navigating ambiguity, building trust and responding to the unprecedented challenges we face. In today's world, new ways of thinking, reacting and communicating are urgently needed to deliver on the potential benefits of innovation. Behaviors such as openness, collaboration, entrepreneurial mindset and community engagement are more necessary than ever before.

The second event was an affiliated session during the U.N. Food Systems Pre-Summit led by Dr. Vaughn Holder, ruminant research director at Alltech. An expert panel discussed global resource use efficiency for protein production systems and the need to ensure food security for a rising population while protecting the Earth's natural resources.

Alltech ONE Ideas Conference

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The Alltech ONE Ideas Conference, now in its 37th year, continues to be an invaluable industry resource, with unmatched content and innovative ideas, inspiration and motivation from world-class speakers. In 2021, Alltech's flagship event had registrants from 101 countries and included on-demand tracks, streaming keynote presentations, live workshops and an interactive networking experience that allowed attendees to connect around the world for an exploration of the power of science, sustainability and storytelling.

More than 70 on-demand presentations explored challenges and opportunities in the aquaculture, beef, business, crop science, dairy, equine, health and wellness, pet, pig and poultry sectors. Registration for the Alltech ONE Ideas Conference remains open, offering attendees 24/7 access to all on-demand content, including keynote presentations and tracks, until April 2022.

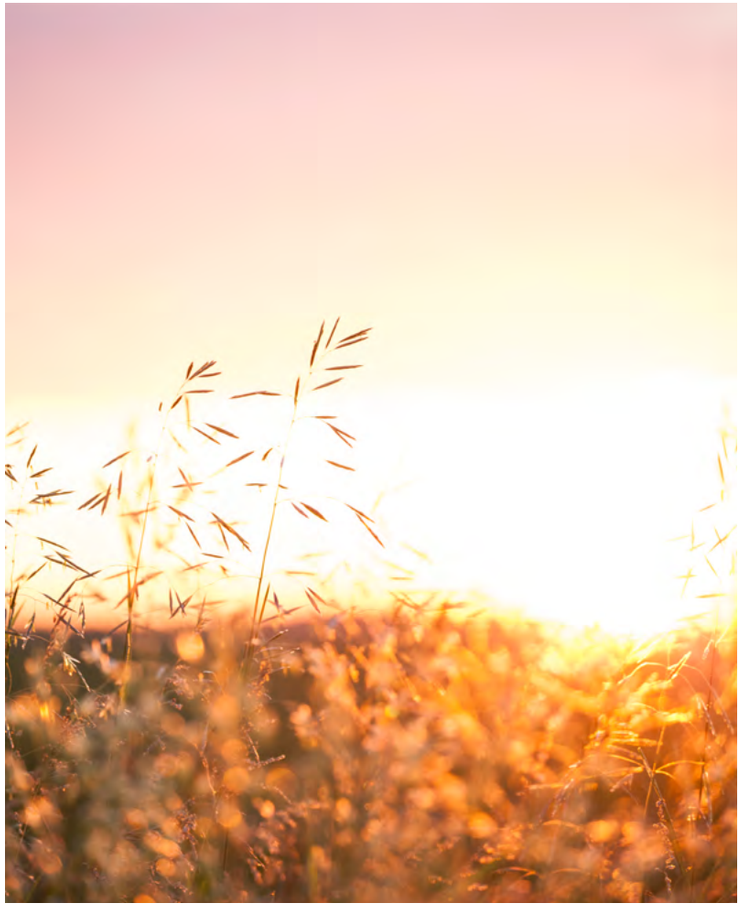
Economics and Health: A Natural Connection

UNGC Principle 7 8 9

"Economics and Health: A Natural Connection" featured an in-depth keynote discussion between Dr. Mark Lyons, president and CEO of Alltech, and David McWilliams, Irish economist, author and university lecturer, during the Alltech ONE Ideas Conference. Over the course of their conversation, the two speakers discussed a range of different countries that significantly influence global agriculture and assessed how their current and potential agricultural practices could affect the world as we know it.

The discussion featured a new animation project between Alltech and McWilliams. In a series of short videos, the two teamed up to focus on the economies of different nations in a quest to better understand them and learn how our histories and ideas are interrelated, including the importance of sustainability in agri-food.

Watch the clips and learn more here.



Disclaimer

This report includes statements about expected steps and actions for our sustainability program. Statements in this report are based on our expectations for the future. When we have used words like "plan," "expect," "estimate," "believe," "anticipate," "target" or "goals," this represents our current view as of October 2021 and could change due to a variety of reasons. Statements included in this report are meant to inform others about our current understanding of material sustainability issues. Results or outcomes may differ from what we expect and have communicated in this report. We plan to address our actual outcomes in detail in our 2022 Sustainability Report.

Next Steps

SDG Action Team

Sustainability is an inherent part of Alltech's DNA and has been a key focus since the company was founded in 1980. In 2019, Alltech took a significant step toward its sustainability goals and its vision for a Planet of Plenty™ when we identified nine of the United Nations' 17 Sustainable Development Goals (SDGs) most closely aligned with our business. The SDGs are an urgent call to action for all countries. Although the SDGs are designed as goals for countries, corporations can contribute to progress on the SDGs by taking positive steps within their industry and the communities where they do business. To amplify and focus our efforts to advance the goals and ensure a Planet of Plenty for all, Alltech will develop a diverse, cross-functional, global employee action team for the SDGs.

Digital Learning Platform

"Stay Curious" is one of Alltech's core values, and this has sparked lifelong learning through educational engagement since the company's founding. This is fostered through a variety of in-person and virtual activities to support team member training, learning and development. Some of the learning activities are required, while others are voluntary and initiated at the local level. As a global company, equitable resource access is important. Over time, it has become clear technology plays a significant role in facilitating the learner's experience. Alltech will secure a digital learning platform to support the training, learning and development needs of every team member. The platform will initially launch with compliance, health and safety, environmental, sustainability and human rights content, and it will evolve to be inclusive of diverse topics to support professional and interpersonal growth.

Sustainability Data Management and Reporting System

We have chosen a wide range of key performance indicators (KPIs) to measure our progress toward environmental, social and economic sustainability. Like most companies, many of our KPIs are related to our operational footprint. However, we will also need to measure the contributions of our products toward our customer's sustainability efforts. Collecting dozens of data points from diverse Alltech business units across the world requires a robust, cloud-based data management platform. We have been working to implement such a system and will use it to report baseline data for our KPIs next year.

Let's Not Waste It – The Conference

Food waste is a critical issue around the globe, and it must be addressed to ensure a Planet of Plenty™ for all. Let's Not Waste It – The Conference, hosted by Alltech, is a two-day conference that will take place in Dublin, Ireland, in September 2022. The conference will explore how smart agriculture, technology, economics, nutrition and education can help reduce food loss and waste, from farm to fork at a local level. Alltech is seeking Food Waste Champions to join us on this journey as we continue Working Together for a Planet of Plenty™ and advancing the United Nations Sustainable Development Goals 2030 targets. Featured speakers include Tristram Stuart, food waste author and activist, and David McWilliams, professor at Trinity College Dublin. Mediahuis Ireland is our official media partner for Ireland.

Sustainable Sourcing

We cannot achieve our Planet of Plenty™ vision without ensuring that our suppliers follow best practices to minimize their social, economic and environmental impact. Therefore, we are developing a global supplier code of conduct that will be applied across the Alltech family of companies. We will also develop targets for sustainable procurement of certain ingredients to combat deforestation and overfishing and support fragile ecosystems throughout the world.