

Feeding People while Preserving the Planet

Agriculture is at the heart of many important conversations in 2023. And whether the issue at hand is environmental concerns, the production of enough nutritious food for the global population or one of many other contentious topics, agricultural producers are often seen as anti-heroes – when, in reality, the agriculture industry has the greatest potential to make a positive impact on the world.

Proof of this positive impact was on display during the opening keynote addresses at Alltech ONE Dublin, the second stop on the Alltech ONE World Tour. Dr. Mark Lyons, president and CEO of Alltech, opened the conference with an assertion that the widespread image of agriculture as a villain makes it more important than ever to tell the story of how animal and food production benefits our planet.

“Bad news is out there, and it does get the eyeballs,” said Lyons. “That’s why I think it’s critical for every business to be dedicating resources to communicating. And to me, that’s the headline: ‘We need our animals. We capture more carbon with them than we would without them.’”

Lyons was joined onstage by Dr. Vaughn Holder, ruminant research director at Alltech, who illustrated how agriculture plays a vital role in both protecting the environment and ensuring the health of all people.

“We have two of the most important jobs in the world: We have to nourish our population and we have to preserve our planet for future generations,” Lyons said. “The challenge to all of us is to come up with the solutions that are going to help us.”

“This is about ideas,” he continued. “It’s about inspiration – and, I think, taking some risks, because we all know what the challenges are. And we need to think about them in a different way.”

Cattle: The Secret Weapon to Sequestering Carbon

Climate change is widespread and will only continue to intensify, placing a great strain on the world’s resources. Agricultural production is often cited as a significant factor in climate change – but in reality, as Holder outlined in his address at Alltech ONE Dublin, agriculture is one of the only industries with the ability to not only reduce its own greenhouse gas (GHG) emissions but to capture and sequester emissions released by other industries.

“We exist at the interface between the world’s biggest carbon-capture and machinery industry, and that’s agriculture,” he said.

Alltech has been studying the agriculture industry’s ability to sequester carbon through a research alliance based on the 10,000-acre Buck Island Ranch in Lake Placid, Florida. During their research at Buck Island, the Alltech team has seen first-hand that cattle can help sequester carbon through grazing – which counters the popular argument that eliminating cattle production will also reduce emissions.

“We have more than enough capacity to put this carbon away,” Holder said. “So, this is what we’re focusing on as a research group, is trying to understand this entire carbon cycle so that we can design interventions and identify levers that can allow us to use this cycle to ameliorate not only the methane side of carbon cycle but the big elephant in the room, which is CO₂.”

As Holder referenced, much of the general conversation about agricultural – and, specifically, livestock – production focuses on the issue of methane, but the data has borne out that carbon dioxide is a much more dangerous foe.

“Carbon dioxide is the problem,” Holder said. “And if we don’t figure out a way to suck carbon dioxide out of the environment, no matter what we do to methane, it’s not going to make a difference.”

“I think methane is important; don’t get me wrong,” he added. “But we have to look at it in a little bit of a different framing. Fossil fuels are one-way highway.”

To explain this concept further, Holder argued that the methane produced by cows is fundamentally different from carbon dioxide, which accumulates in the atmosphere. “It stays where it was; it goes nowhere,” he said. Methane, on the other hand, can be mitigated and cycled out much more quickly.

“Methane has some pretty cool characteristics that allows it to be somewhat of an opportunity for us, rather than a threat to the industry,” he said.

To start with, contrary to popular belief, methane isn’t just produced by cows; it’s produced by “things that ferment,” Holder explained, including the feeds eaten by cattle herds. “And whether that’s in a cow’s rumen or whether that’s in the field, you’re still going to be getting methane out of that.”

So, what would happen to these feeds and their byproducts if cattle production was eliminated? The consequences would be dire, Holder warned.

“Eighty-six percent of global livestock feed currently goes through livestock,” he said. “And that does two things for us: It allows us to actually get some of that food back to our food systems, but it also prevents that feed from fermenting out in the field and causing their own source of greenhouse gases. And if you put it into compost, which is what a lot of people would have you do, five times the amount of greenhouse gases will come off of those byproducts.”

This is the kind of fact that Holder wishes made headlines, as it is somewhat counterintuitive to what the average person might believe.

“When we are making recommendations on changing our food systems to save the environment, we’ve got to be thinking about these types of things,” he said. “The systemic effects of what we are doing are probably much more



important than the direct interventions that we are trying to make in the first place.”

Holder has seen first-hand the positive impact of agriculture on the planet – and he hopes the rest of the world can see it, too, so that ag producers can get back to their original mission.

“We have a massive role play in climate change, and I don’t think there’s another industry that has a similar position,” Holder said. “But we can’t lose sight of what our primary purpose is, and that’s feeding people, sustaining the world. That’s the most important component, in my opinion, of sustainability. We have to keep food production primary when we are thinking about changing these systems.”



Dr. Vaughn Holder

Dr. Holder is the ruminant research director at Alltech based at the company’s North American Bioscience Center in Kentucky, USA, where he heads the company’s global nutritional research related to ruminant species.

Holder holds a bachelor’s degree in animal science from the University of Pretoria, a master’s degree in ruminant nutrition and microbiology from the University of Pretoria, and a doctoral degree in ruminant nutrition from the University of Kentucky.