

Swell AI Transcript: EIT_COPMini_MosaMeat_2.mp3

Matt Eastland:

Welcome back to the Food Fight podcast. I'm Matt Eastland. COP 28, the 2023 United Nations Climate Change Conference kicks off on November the 30th. In preparation, here on the podcast, we're releasing a series of mini episodes celebrating the work of some of the most innovative food focused companies and organisations featured at the conference.

Robert E. Jones:

Hi, everyone. My name is Robert E. Jones, and I serve as Vice President of Global Public Affairs for Mosa Meat, a company that makes cultivated meat, and have the honor to serve as President of Cellular Agriculture Europe, an industry association of cultivated meat and seafood companies. On the lead up to COP, I was excited to have a conversation with you about the role that we think that cultivated meat and seafood can play in the overall diversification of our protein system in order to make more resilient food chains and help meet our critical biodiversity and climate goals. Everyone listening to this recording will agree that we are experiencing a climate crisis right now. And we know from the science that the food system accounts for more than a third of the greenhouse gases causing climate change. And particularly of that, livestock alone accounts for 15% or more of climate change causing gases. So we are at planetary boundaries right now in terms of land use and water methane, CO₂. So the way that we make meat currently is problematic. But what is really the challenge long term is that we're going to have 10 billion people on the planet by 2050. and meat consumption is expected to rise between 50 and 70% in the same period of time. That's mostly driven by a rising middle class in countries like India and China. If we were to try to make that much meat by 2050, we would need about 2.5 planet Earth's worth of resources. So, it's clear that we've hit the wall, and that's why we have to innovate and think, what other proteins can we layer into this animal protein system? that take the pressure off of earth but still give people what they want. And it's true that we are addicted to meat. It's a meat-eating world. The idea for making meat in a new way really is not new. In fact, Winston Churchill wrote about it in 1931 in an essay called 50 Years Hence. There's always been this idea that we could eventually harness science to grow meat without the need to slaughter an animal. But it wasn't really until the last 10 to 15 years that it's come to a reality. In my company, Mosameat, the founders of our company pioneered this technology and debuted it to the world in 2013. And now there are 150 plus companies around the world that are making some form of animal protein starting with the cells themselves, the building blocks of the animal, rather than raising and slaughtering an entire animal. So we start with a live animal taking a small sample of cells from that animal. For beef, we take a sample of tissue from the rear end of the cow about the size of the tip of your fingertip or a black peppercorn. Inside of that sample of tissue, and by the way, the animal is not harmed in that process. It's a very small incision. It heals in a couple of weeks. That sample of tissue contains hundreds of thousands of adult stem

cells. And we are able to then analyze the most active, healthy ones and immediately put them into a liquid nutrient-rich broth that has amino acids and sugars and vitamins in the same way that the cow would have turned the grass into nutrients, we just skip that part and introduce the nutrients directly. And imagine it in a stainless steel tank, almost like in a beer brewery. And the tank is held at the temperature of the animal, so 38.6 degrees Celsius for a cow. And the combination of the cozy, warm environment and the really lavish nutrients being exposed, the cells do what they do in nature. They multiply by orders of magnitude. And in a very short amount of time, a couple of weeks, you have trillions of cells from the original sample. And then we move them into the next liquid nutrient broth that has a little bit different signals in it to tell those cells what they want to be when they grow up. And we basically instruct them to either be muscle strands or fat tissue. And we grow that muscle and fat separately in different stainless steel tanks. And then we recombine it at the end to make the same burger or meatball that you're familiar with. The entire process is usually going to take between six to eight weeks. And that sample that we started with, again, that's about the size of a black peppercorn, we can grow about 80,000 hamburgers from. If we were to have raised that cow for 18 to 24 months with hundreds of thousands of gallons of water and feed, you would get less than 1,000 hamburgers from that animal. So we have the ability to you know, in a sterile process that is much lower risk from a food safety perspective in many ways, to make a lot more meat and a lot more efficiently. And speaking of efficiency, we know from peer review research that if we use renewable energy to grow the meat, that we can make our beef with 93% fewer greenhouse gases, 90% 5% less land and 78% less water than traditional cattle production. I have the great honor of not only representing Mozambique, but having been elected by my peers in the industry to serve as president of Cellular Agriculture Europe, which is an industry association based in Brussels, that represents 12 companies that are using the technologies to make cultivated meat and seafood. I work closely with my counterparts in the United States and in Asia, and jointly we have a global alliance called the Global Alliance for Cellular Agriculture, and we are co-hosting the Food Systems Pavilion with EIT at COP28. And so it'll be the first time that there's a really robust conversation about using cellular agriculture technology to contribute to our global climate goals. And I think what we've titled our day really says it all, and that's climate resilience through protein diversification. And we use that word because we're focused on a systems approach. We don't think cultivated meat and seafood are the silver bullet for the climate crisis and reforming food and agriculture. But we do think it is a really valuable addition to a toolbox of solutions that include innovations like ours, innovations like precision fermentation to make milk, plant-based products, diversification of animal feed in order to reduce methane in cattle and ruminants, all the way through the value chain. So we want out of COP28 to be included in a robust conversation about what protein diversification can do in order to meet our climate goals. Historically, it is remarkable how much our diets have changed in the last hundred years. And I'm an American and looking at the U.S. in particular, the amount of meat consumed

by the average American has increased 70 plus percent, I think, you know, post-World War II era. And that has to do with a lot of things, including dealing with malnourishment after the Great Depression, all the way to economic development post-war. But I bring that up because the level of which we consume meat now is not a legacy percentage. We haven't always eaten meat at this level, and it's simply not sustainable. So we have to change that and look in the not too distant past at the mix of vegetables and meat and legumes and return to something that is a little bit more common sense. And for cultivated meat in particular, you know, I'm still a carnivore. I recognize that a lot of people around the world are not going to give up meat, which means we need to give them the laziest way to change their behavior. And it means making what they love about meat and seafood in a different way. And so, but we need policymakers to take this into account, build it into these public policy frameworks and, you know, push back against some vocal minority voices in the food and agriculture space that are resistant to any sort of change.

Matt Eastland:

This has been the Food Fight Podcast. As ever, if you'd like to find out more about what we do, head over to the EIT Food website at www.eitfood.eu. Also, please join the conversation via the hashtag EITFoodFight on our X channel, at EIT Food. And if you haven't already, please hit the subscribe button so you never miss an episode.