



Air Protein® is a pioneer in making a pioneer in air-based nutritional, carbon negative protein that requires no agriculture or farmland. We have proven that nutritious protein-rich food can be made without arable land or harming the planet. In 2019 we grew the world's first meat made from elements of the air. In addition to growing protein or meat, it has the potential to output a broad range of foods and ingredients across a wide breadth of categories, creating a new future...an intrinsically sustainable future...the future of food.

### **Growing Food Through Landless Agriculture™**

Solving the world's biggest farming challenges, the Air Protein landless farming process reduces time to market, requires no arable land, is highly scalable, and is cost effective. By contrast, typical food processes depend on highly unpredictable factors including, weather, geography, politics, and limited natural resources. Our Air Farms™ are a self-contained system requiring only air, water, and energy, creating virtually no disruptions and predictable costs.

At Air Protein, we've unlocked nature's ultimate protein, grown with air, water, and energy – defining the future of wholesome food production.

### **Air Protein**

Air Protein raised the bar in the alternative meat category by demonstrating that nutritious, sustainable meat can be made without plants or animals, eliminating the use of farmland and the destruction of rainforests. Product R&D and food innovation are moving forward at our San Leandro, CA Air Farm. We are also leveraging strong partnerships, including the recently announced strategic alliance with ADM, and through our innovative work with DARPA.

### **What is the Air Protein innovation platform?**

Air Protein leverages Air Fermentation™, a fermentation process similar to that used to make beer or yogurt, but without the use of plant-based ingredients. Leveraging air, water and renewable energy to activate a starter culture, the production platform outputs protein that can be used to create a range of products while consuming carbon in the process, thus resulting in net carbon reduction to the atmosphere. Only Air Protein technology provides such a broad range of capabilities, creating a new future...an intrinsically sustainable future...the future of food.

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### **Why does the world need Air Protein?**

Air Protein landless protein farming through Air Fermentation solves food production challenges. It reduces time to market, requires no arable land which decouples food from traditional supply chain risks, is highly scalable, and is cost-effective. Current food production methods are challenged by unpredictable factors caused by weather, geography, politics, global agriculture supply chain costs, limited natural resources and manufacturing disruptions. With estimates that the global population will be about 10 billion people by the year 2050, we are fast approaching the tipping point where feeding the global population will be unsustainable. The world needs innovative solutions to making food, and Air Protein provides a solution: food made from elements of the air.

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### **Why is Air Protein different from other food solutions?**

**Air Protein** grows through our unique landless agriculture Air Fermentation process that does not require the use of any arable land. An Air Protein Farm yields high volumes of protein in a matter of hours, resulting in nutritious, cost-effective protein products. Air Farms can be built virtually anywhere, are not reliant on climate or weather and run 24/7. Solving the world's biggest farming challenges, Air Protein's Air Fermentation landless protein farming reduces time to market, requires no arable land which decouples food from traditional supply chain risks, is highly scalable, and is cost effective. Our inputs are elements of the air, water and energy that activate a culture to produce nutrient dense protein. Air Fermentation is the only process being commercialized to make protein without using any arable land.

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### **What is Supply Chain Free Protein Manufacturing?**

Our protein is made in an Air Farm, a self-contained Air Fermentation system requiring only air, water, and energy to activate a starter culture and grow our protein. Our process decouples protein production from the supply chain, creating virtually no production disruptions, and providing predictable costs. It is decoupled from weather and geopolitical supply chain risks associated with traditional agriculture. It is also decoupled from the resulting price volatility.

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### **How is Air Protein Nutritious?**

**Air Protein** is rich in vitamins, minerals, and nutrients, with all 20 amino acids, including all 9 essential amino acids and 2x the amino acids of soybeans. It contains more protein per kg than most other proteins and is free from GMOs, pesticides, herbicides, hormones, and antibiotics.

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### **How is Air Protein Cost-Effective and Highly Scalable?**

Because it uses no farmland, has minimal inputs, and scales volumetrically, Air Protein is highly scalable, with significantly higher yields than most other proteins. Our economic models project that our landless protein farming process is more cost effective than other forms of protein farming. **Air Protein** has cracked the code on landless agriculture and supply-chain free protein manufacturing, creating nutritious protein through our cost-effective Air Fermentation food production process.

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### **What is the plan for a commercial-scale plant?**

We recently announced the commissioning of our San Leandro site, which will facilitate our initial scale protein production. Our recent announcement with ADM provides for the mutually exclusive rights for ADM and Air Protein to collaborate to build and operate the world's first Air Protein commercial scale plant. At this stage, our teams are working on a longer-term operations plan.

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### **Does Air Protein have self-GRAS status for its ingredients?**

We have successfully completed the Independent GRAS Conclusion for our novel protein and have initiated the “no questions” process with the FDA.

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### **Can you clarify what the key inputs are in your process. What is the source of the CO<sub>2</sub>?**

Our process leverages elements of the air, water, and energy to grow our protein. Elements of the air include carbon dioxide, oxygen, and nitrogen (we use fixed nitrogen). Our early deployment will use commercially available O<sub>2</sub> and CO<sub>2</sub> in the food industry (e.g., for sparkling water). As direct air capture technology becomes commercially available, we will use it as well.

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### **When will air-based food be available for consumers?**

As you can imagine, turning air into food at a large scale takes time, and we're spending the time, energy, and resources perfecting the science for the production of food. Our current area of focus is scaling up the production of our air-based protein and demonstrating the versatility and functionality of our protein products for categories across the grocery store. We are starting with meat because current meat production has the most impact on the environment. We'll be making announcements as we refine our commercial timeline.

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## **How were you inspired by NASA to create protein from elements of the air?**

During the 1970s space program, NASA scientists sought a way to feed astronauts on long-distance journeys since space vehicles were not able to store large quantities of food over several months. The scientists explored recycling CO<sub>2</sub> from the air that the astronauts exhaled as a possible solution. As the space program waned, this process was shelved and forgotten only to be rediscovered by our founders. It was then perfected by their team using purified elements of the air.

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## **How does the Air Protein platform output carbon-negative ingredients?**

Our Air Fermentation process leverages CO<sub>2</sub> as an input and outputs food ingredients with no resulting greenhouse gas emissions. The process effectively consumes carbon, thus creating a carbon negative process.

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## **How Do You Make Protein from Air?**

We use a more efficient, more sustainable and scalable process we call landless protein farming. We start with elements of pure air, including carbon dioxide, oxygen and fixed nitrogen, renewable power, and water. Then just like yogurt, wine or cheese, elements of the air are added to cultures to cause them to nourish and grow.

The cultures are whisked together with the pure air elements, renewable power and water to nourish and begin the growth process of the protein. We harvest and purify air protein in a matter of days and then move it to the next stage of drying to remove the water. The outcome is a rich protein flour with a protein profile similar to animal protein and richer in nutrients and amino acids than soy protein.

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## **How can Air Foods help renew our planet's resources?**

Agriculture makes up about 24% of global greenhouse gas emissions – that's 8 billion metric tons of CO<sub>2</sub> equivalent in our atmosphere. And these emissions are projected to grow by 2050 with increased demand for meat and dairy. By producing the world's only carbon-negative protein, effectively removing carbon from the atmosphere, we can reduce the amount of greenhouse gasses entering the atmosphere as consumers switch to products incorporating Air Protein, thereby helping renew the planet.

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## What is Kiverdi?

Kiverdi, Inc. is a biotechnology company working with corporations to make the circular economy a reality by creating game changing products and systems using the science of CO<sub>2</sub> transformation. **Air Protein**, the company, is a subsidiary of Kiverdi, Inc. Kiverdi was launched in 2011 by Dr. Dyson and Dr. Reed. In 2019, the team at Kiverdi made the world's first food from elements of the air, Air Meat, and **Air Protein** was born.