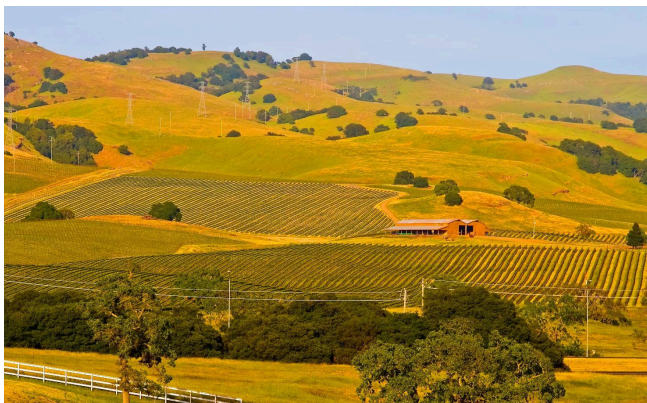


California: Sustainable protein innovation

California is the epicenter of the U.S. alternative protein industry, boasting nearly a third of all consumer brands, manufacturers, and ingredient suppliers in the sector. With its agricultural expertise, world-class research institutions, and strong innovation culture, California is poised to be *the* American leader for sustainable protein production.

Support farmers

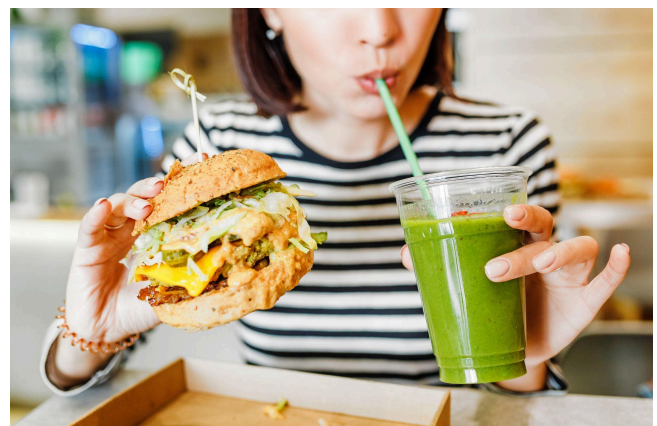
Plant-based and cultivated meat, dairy, and eggs turn crops and their sidestreams (including starch and meal) into high-value ingredients, transforming otherwise costly waste into commercially viable food products. With key alternative protein ingredients grown in the state (over $\frac{1}{3}$ of the country's vegetables and $\frac{3}{4}$ of its nuts), California crop farmers are positioned to contribute vital inputs to this growing industry.



California farmers who incorporate plant proteins and feedstocks into their existing operations will enjoy new sources of income while helping to ensure a more sustainable, resilient, and water-secure future. Plant-based meat and cultivated meat can reduce water use by up to **99 percent and 66 percent**, respectively. With ongoing drought conditions in California, alternative proteins offer a viable solution to water scarcity.

Bolster industry

California has the largest concentration of alternative protein brands, manufacturers, and ingredient suppliers in the country, with over 150 companies headquartered in the state.



California is home to many leading plant-based protein companies, including:

Beyond Meat (El Segundo), whose *Beyond Steak* was named one of TIME's best inventions of 2022 and is certified by the American Heart Association; **Impossible Foods** (Redwood City), behind Burger King's *Impossible Whopper*; **Abbot's Butcher** (Costa Mesa), which makes clean-label meats from pea protein; B Corp-certified **Amy's Kitchen** (Petaluma); Shark Tank-launched plant-based bacon company **Umaro Foods** (Albany); plant-based chicken company **Daring Foods** (Culver City); **Current Foods** (San Francisco), plant-based smoked salmon company; **Hodo Inc.** (Oakland); Korean plant-based BBQ company **Unlimeat** (San Jose); taco and

enchilada company **Starlight Cuisine** (Seal Beach); mushroom-based jerky company **Moku Foods** (Santa Monica); plant-based egg company **Eat JUST Inc.** (Alameda); and plant-based deli producer **Mrs. Goldfarb's Unreal Deli** (Woodland Hills).

Plant-based dairy products are present in every category, utilizing seeds, legumes, soy, almonds, oats, cashews, and other crops as ingredients for milk, yogurt, cheese, butter, and ice cream. Companies include **Ripple Foods** (Emeryville); **Califia Farms** and **Vromage** (Los Angeles); **Blue Diamond Almond Breeze** (Sacramento); **Forager Project** (San Francisco); **Miyoko's Creamery** (Petaluma); **Parmela Creamery** (Fontana); **Kite Hill** (Hayward); **Three Trees** (San Mateo); **Vixen Kitchen** (Garberville); and many others.



Fermentation companies are also flourishing in the state, with companies like **Better Meat Company** (Sacramento), **Air Protein** and **New Culture** (San Leandro), **Perfect Day** (Berkeley), **Change Foods** (Palo Alto), **NovoNutrients** (Sunnyvale), **Shroomeats** (Avalon), **Shiru** and **Checkerspot** (Alameda), **Coolhaus** (Culver City), **Onego** (San Diego), and the **Every Co.** and **Yali Bio** (South San Francisco) developing biomass and precision fermentation processes to produce nutrient-dense proteins and ingredients.

California is also home to the first three cultivated meat companies to receive USDA and FDA approval to sell their products: **GOOD Meat** (Alameda), **Upside Foods** (San Leandro), and **Mission Barns** (San Francisco). The state boasts other cultivated meat startups, including **Optimized Foods** (Davis), **Orbillion**, **Ohayo Valley**, and **Novel Farms** (Berkeley), as well as cultivated seafood companies **BlueNalu** (San Diego), **Reel Foods**, and **Finless Foods** and **Wildtype** (San Francisco).



Drive research

The University of California System is delivering breakthrough research findings to support the success of California companies, with the **University of California, Los Angeles** (UCLA), and the **University of California, Davis** (UC Davis), paving the way.

UCLA is on the cutting edge of cellular agriculture research. Dr. Amy Rowat, biophysicist and Faculty Director of the new Rothman Family Institute for Food Studies, discovered a new way to cultivate beef muscle cells that significantly reduces costs. The Rowat Lab at UCLA received \$250,000 from GFI in 2019, \$250,000 from the California NanoSystems Institute at UCLA in 2021, and \$604,907 from U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) in 2022 to research cultivated meat scaffolding. Dr. Rowat was also the recipient of the 2022 National Science Foundation BRITE fellow award of \$995,498.

In 2024, Dr. Rowat launched the Future of Food Fellows, a graduate program designed to cultivate leaders in sustainable food systems and cellular agriculture. The program will train early-career scientists and offer networking and mentorship opportunities to aid in the development of their careers and build out the workforce.



UC Davis is another university with robust alternative protein initiatives. Dr. David Block at UC Davis leads the *Integrative Center for Alternative Meat and Protein* (iCAMP), a state-wide consortium dedicated to accelerating alternative protein commercialization. In 2020, Dr. Block received a \$3.5 million NSF grant to study the scientific and engineering foundations for cultivated meat production.

UC Davis is also furthering plant-based protein research. Associate Professor of Food Science and Technology Juliana Maria Leite de Moura Bell was

awarded USDA Agricultural Research Service Pulse Crop Health Initiative funds in 2019 to study chickpea protein and again in 2020 to study lentil and dry bean extraction.

Within the Cal State System, **San Diego State University** is also contributing to developments in the field. Dr. Jing Zhao was awarded \$595,400 from the USDA AFRI Competitive Grant in 2024 to research applications of microalgae for use in alternative proteins. That same year, Dr. John Love was awarded \$300,000 in AFRI funding to use artificial intelligence to produce milk proteins via bacterial fermentation.

Strengthen state investments

While California has been at the forefront of the alternative protein sector, other states are prioritizing the sector and ramping up support. In 2024, Illinois matched California's level of R&D investment in the sector to leverage a \$51 million federal investment and launched the Alternative Protein Innovation Task Force. Massachusetts recently invested \$10 million to support the state's alternative protein industry.

Further state investments will help California maintain its edge in this sector, bolstering corporate growth and job creation and helping to meet key climate goals. California can continue to lead in alternative proteins by supporting research at its state universities and by making grants, loans, and incentives available to alternative protein companies to hire workers and build manufacturing facilities in the state.

About GFI

The Good Food Institute is a 501(c)(3) nonprofit working internationally to make alternative proteins like plant-based and cultivated meat delicious, affordable, and accessible. GFI advances open-access research, mobilizes resources and talent, and empowers partners across the food system to create a sustainable, secure, and just protein supply. GFI is funded entirely by private philanthropic support.