Agricultural Research Benefits Farmers, Rural Communities, and the Nation's Food Supply

The Agriculture and Food Research Initiative (AFRI) is the nation's leading competitive grants program for research, education, and extension projects in food and agricultural sciences. Administered by the U.S. Department of Agriculture's National Institute of Food and Agriculture, AFRI plays a central role in driving discovery and innovation on behalf of American farmers and rural communities. America's leading research universities are key partners in developing solutions in support of our country's $500 billion agricultural industry. AFRI-supported research helps farmers succeed while safeguarding our food and water supply – strengthening the nation's economy, national security, and health.

How can Congress support vital AFRI agricultural research?

The Association of American Universities respectfully ask Congress to provide $500 million – and no less than $455 million – in FY27 for the AFRI competitive grants program. We also respectfully request Congress to reject the president's budget request of $419 million for AFRI in FY27. AFRI funded only 27% of applications it received in FY22-23, underscoring the need for greater investment to support more high-quality research.

Why should Congress support AFRI?

AFRI funds research on protecting the nation's food and water supply

Ranchers and farmers face constant threats from pests, disease, extreme weather, depletion of natural resources, and cyberattacks – all of which undermine human health, food security, and economic stability. AFRI-supported research explores strategies to monitor and safeguard food and water.

- The H5N1 virus is an avian bird flu that has increasingly spread to other animals, including dairy cattle. In cattle, the virus can be present in milk, creating a pathway for food contamination and animal-to-human transmission. AFRI supports University of Pittsburgh infectious disease research that seeks to understand how the virus infects dairy cattle. The researchers are also developing new diagnostic tests and treatments for influenza D virus (IDV), a lesser-known disease affecting cattle.

- Antimicrobial resistance (AMR) occurs due to the overuse of antibiotics and fungicides to treat disease in humans, plants, and animals. Pathogens that develop the ability to defeat antibiotics designed to kill them contaminate water and soil, posing a major threat to public health. AFRI supports research aimed at mitigating AMR in agriculture and food systems, including several projects at University of California, Riverside, one of which tests biochar – a type of charcoal – as a filtration medium for AMR in reclaimed water.

AFRI supports research on emerging technology to boost production and profitability.

Precision agriculture and artificial intelligence (AI) are increasingly important tools farmers use to monitor conditions, predict yields based on historical weather and soil data, and scale up production. Remote sensors allow farmers to monitor and respond to changes in weather, soil conditions, livestock and crop health, all of which can increase yields and profits.

- The Artificial Intelligence Institute for Next Generation Food Systems (AIFS), based at the University of California, Davis, applies AI to all aspects of agricultural research, development, and commercialization through science, industry engagement, and workforce development.

- AI for Future Agricultural Resilience, Management, and Sustainability (AIFARMS), based at the University of Illinois, Urbana-Champaign, uses AI to address labor issues, animal welfare, soil health, technology adoption, and other challenges.

AFRI funds research that addresses gaps in the agricultural marketplace.

AFRI-funded researchers pioneer new crop varieties and test the viability of new food sources and products that respond to market demands.

- Wheat crops are typically planted every year, yet annual planting is resource-intensive and has significant environmental impacts, including soil degradation and excess nitrogen pollution from fertilizers. University of Minnesota research on intermediate wheatgrass, a perennial forage grass, led to the development of Kernza, the first commercially viable perennial crop to produce human-edible grains.
- A research partnership between Purdue University and The Ohio State University aims to create a sustainable seafood source in the Midwest. The Blue is Green project uses aquaponics to cultivate seafood and specialty crops in a "closed, zero-waste system," where ammonia-rich fish waste is converted to nitrogen to fertilize crops.
- Farmers use cover crops not for harvest, but to prevent soil erosion and improve soil health. Yet supplies of cover crop seeds are limited. Researchers at University of Missouri's Center for Regenerative Agriculture are testing new cover crop varieties with academic and industry partners across the country.

AFRI trains the next generation of agricultural innovators and scientists.

AFRI grants support not only graduate students, trainees, and postdoctoral researchers, but also educators and professionals that translate research into practice through cooperative extension services.

- AFRI's Education and Workforce Development initiative supports thousands of students, 4-H youth, K-12 educators, early-career researchers, and extension professionals to address projected shortfalls of qualified graduates in agriculture, food, forestry, and energy sectors across the economy.

- AFRI's pre- and postdoctoral fellowship programs train the next generation of scientific talent in the agricultural sciences, giving early-career scientists a jump start in mapping out their careers.