



USDA research is working for Massachusetts



Supporting innovation

In FY 2015, Massachusetts received **\$3.3 million in new grants** from the Agriculture and Food Research Initiative (AFRI).

Researchers at the **University of Massachusetts** have an AFRI grant to develop a new bio-sensor system that could easily and effectively detect *E. coli* contamination in agricultural irrigation water.

AFRI funding is being used to study how different land management practices of agricultural ecosystems impact carbon and nitrogen gas emissions in order to evaluate greenhouse gas mitigation strategies.

Supporting small business

From 2006-2015, Massachusetts small businesses received almost **\$9 million in grants** through the Small Business Innovation Research program within USDA

Bodkin Design and Engineering, LLC in Newton, is using an SBIR grant to a novel hyper-spectral imager that can measure water and nutrient stresses of crops in order to better manage water and fertilizer application.

Economic Impact



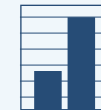
In 2014, agriculture and related industries added **\$985 billion** to the U.S. gross domestic product (GDP).



Agriculture exports hit a record high of **\$150 billion**, or 9% of total U.S. exports, in 2014.



In 2014, 17.3 million full- and part-time jobs were related to agriculture – **about 9.3% of total U.S. employment**.



U.S. public investments in agriculture research and development produce **benefit-cost ratios of 20:1 and higher**

Massachusetts Agriculture

7,800 farms

\$412 million in commodities

\$176 million in agricultural exports

21,824 jobs



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