Food, Agriculture, and Veterinary Defense

Science and Technology

DEFENDING THE U.S. FOOD AND AGRICULTURE SYSTEM

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Food, Agriculture, and Veterinary Defense (FAV-D) project coordinates research and development (R&D) initiatives based on DHS components requirements. Chiefly, to prevent, protect, mitigate, respond to, and recover from the intentional or natural introduction of high-consequence threat agents affecting food and agriculture. S&T FAV-D aims to provide forward-looking R&D to address gaps across the entire food defense continuum. The project enhances the nation's defense against threats to livestock, wildlife, and plants, and against intentional adulteration in the food chain.

S&T FAV-D supports DHS agencies and components, such as the Countering Weapons of Mass Destruction Office, Customs and Border Protection, Cybersecurity and Infrastructure Security Agency, Federal Emergency Management Agency, and Office of Intelligence and Analysis. The FAV-D project leverages interagency translational research conducted by DHS, the U.S. Department of Agriculture (USDA), and S&T University Programs Centers for Excellence (COE), as well as industry and non-for-profit partners.

Transition is under way for state-of-the-art countermeasures, including vaccines and diagnostics for the highest-priority transboundary animal diseases: African Swine Fever (ASF), Food and Mouth Disease (FMD), and Rift Valley Fever (RVF).

PARTNERING FOR IMPACT

The food and agriculture sector contributes more than $1.1 trillion to the U.S. economy per year and its critical infrastructure is in need of protection by the U.S. government. Transboundary animal and plant diseases present continuous threats to our agricultural sector and carry potentially cascading impacts for humans and the environment.

FAV-D partners directly with the Plum Island Animal Disease Center (PIADC) and DHS University COE to develop and test vaccines and diagnostics to be transitioned for regulatory licensure and acquisition by the National Animal Vaccine and Veterinary Countermeasures Bank (NAVVCB) and National Animal Health Laboratory Network (NAHLN). Effective depopulation, decontamination, and disposal methods will be transitioned to farms and industries as control countermeasures.

ACCOMPLISHMENTS TO DATE

- Demonstrated effectiveness and applicability of commonly used disinfectants for FMD and ASF.
- Demonstrated efficacy of vaccine candidates for ASF and FMD in pigs.

UPCOMING MILESTONES

- FMD subunit vaccine efficacy study in cattle or pigs in support of a regulatory package toward product licensure.
- Transition transboundary animal disease countermeasures to NAVVCB.
- Regulatory development packages toward approvals for: a rapid, pen-side diagnostic test and an emergency use vaccine for ASF, and a prototype next-generation subunit vaccine for livestock.

PARTNERS AND PERFORMERS

- PIADC, NY, and USDA, DC
- Kansas State University Center of Excellence for Emerging Zoonotic Animal Diseases, Manhattan, KS
- University of Florida, Gainesville, FL
- Gate Scientific Inc., Milpitas, CA
- Silver Lake Research Corporation, Irwindale, CA
- NAVVCB, DC, and NAHLN, DC