

# AgriLIFE RESEARCH

Texas A&M System

FY 2010-2011 Exceptional Item:

## Safe and Healthy Food for Texas



**Requested Amount: \$8 million (biennial amount)**

### Program Description

The goals of this program are to improve the safety and value of Texas's agricultural products and to increase the availability of healthful foods to reduce disease incidence, lower the cost of medical care, and enhance the quality of life for Texans.

#### Food safety research will

- focus on key pathogens, such as *E. coli* O157:H7, *Salmonella*, and *Campylobacter*, and quantify the impact of foodborne illness in the state;
- develop and test the efficacy of pre- and postharvest intervention strategies (e.g., in-field handling and postharvest pasteurization) to minimize foodborne hazards; and
- use breeding and other techniques to minimize mycotoxins such as fumonisin and aflatoxin, which are sometimes found in Texas crops and adversely affect food quality and human health.

#### Healthy foods research will

- use traditional and molecular breeding techniques to optimize naturally occurring phytochemicals and bioactive compounds in Texas-grown fruits, vegetables, nuts, and other foods that have the potential to reduce the risk of cardiovascular disease, stroke, obesity, and other acute or chronic diseases.

### Benefit to the State / Results

- Texas is one of the leading producers of animal and plant food products, with beef, poultry, grain, fruit, and vegetable production contributing greatly to the state's economy. Texas food producers need scientific support to enhance the value of these products and to ensure the safest food supply possible — and consumers of these products deserve no less.
- Cardiovascular disease is the leading cause of death in Texas. In 2003 it resulted in \$7 billion in hospital charges, and a significant number of healthy years of life lost — an indicator of the total burden of disease. Research has shown that people can lower their risk of cardiovascular disease by 4 to 7 percent simply by eating one additional serving of fruit and vegetables each day.

*Improving Life Through Science and Technology.*

- This program's research efforts will enhance the safety and nutritional value of Texas's food supply and expand the state's agricultural economy.

### Background Information

- This request consists of two related efforts: (1) enhancing the safety of Texas foods (e.g., beef, poultry, grains, fruits, and vegetables) by increasing our understanding of the mechanisms of contamination and by developing strategies to reduce and/or eliminate contamination, and (2) developing heart-healthy foods to reduce disease risk among Texans.
- Both efforts contribute to physical wellness and health by improving the foods we consume.
- Both are agricultural and public health issues. The consumer demand for safe and healthy food continues to increase, and Texas suppliers must be fully prepared to meet these demands. Recent events, such as the 2008 *Salmonella* outbreak and the 2007 and 2008 *E. coli* outbreaks, highlight the importance of this issue.
- The occurrence of mycotoxins, some of which are carcinogenic in food, is viewed as a potential threat to the food supply by the FDA, the American public, and world markets for U.S.-exported commodities. In addition, livestock and wildlife are affected by mycotoxins in feed. In some cases, the marketability of more than half of the Texas grain and cottonseed produced is negatively affected. Research would focus on identifying genes to incorporate into various susceptible major crop species and on development of management strategies to minimize potential contamination, both in the field and postharvest.
- AgriLife Research will use traditional and molecular breeding techniques to optimize heart-healthy compounds found in selected crops (e.g., grapes, onions, carrots, peppers, spinach, leafy vegetables, citrus, stone fruit, pecans) and food products (e.g., citrus beverages, wine) and to understand the causal mechanism between food consumption and health. AgriLife Research will also collaborate with scientists, clinicians, and physicians from selected Texas health science centers.
- The costs of obesity to the state are in the billions of dollars. Increased nutritional properties of fruits, vegetables, nuts, and other healthy foods can greatly lower these costs.
- There is significant potential for leveraging requested state funds with federal funds, given the new mandatory funding and increased emphasis placed on specialty crops in the 2008 USDA Farm Bill.

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