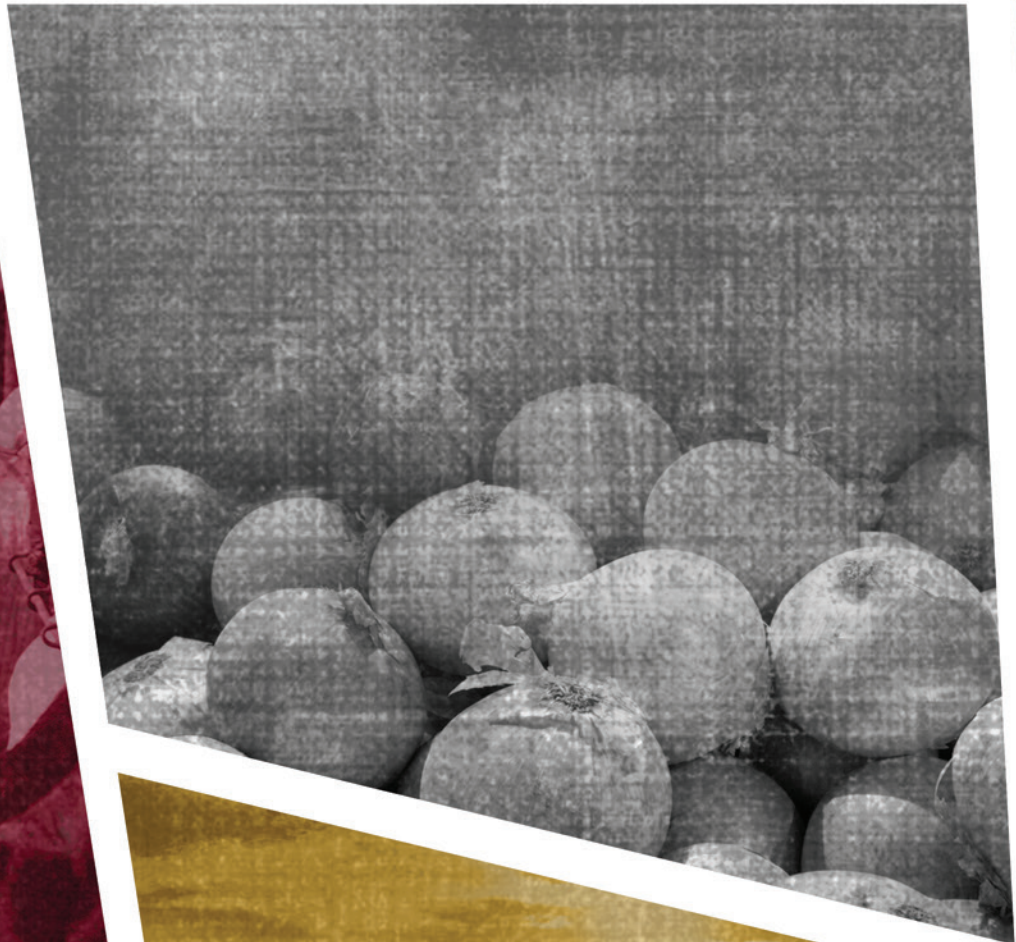




TEXAS A&M AGRILIFE RESEARCH

2015 SELECTED ACCOMPLISHMENTS



TEXAS A&M
AGRILIFE
RESEARCH



Combating Drug Resistance

The Sacchetti Lab is extending research in drug resistance by using novel rifamycins (a group of antibiotics that are particularly effective in treating tuberculosis and leprosy) to restore the effectiveness of existing therapeutic drug regimens for Non-Hodgkin's lymphoma, ovarian cancer in humans, and drug-resistant canine cancer. This method will also restore the efficacy of two of the drugs most commonly used to treat parasites in sheep and goats.



Reversing Quail Decline

AgriLife Research published the first genome assembly for the northern bobwhite quail (*Colinus virginianus*). This seminal work should prove to be invaluable to researchers working to identify the cause of the decline in native Texas quail populations and to reverse this decline.



Testing Wildlife Genes

Genetic testing by scientists at the Uvalde Center, in partnership with the College of Veterinary Medicine and Biomedical Sciences, revealed that deer cannot transmit tick fever to cattle. This finding protects the \$1.7 billion hunting industry in Texas by eliminating the requirements to impose quarantine restrictions on Texas cattle and to fund a costly tick-control program in wildlife.



Saving Water through Hydroponics

AgriLife Research developed hydroponic cropping systems that increased lettuce yields by more than 40% while achieving water savings of more than 90% when compared to lettuce grown under conventional irrigation systems.



Increasing Feed Efficiency

AgriLife Research made a preliminary identification of a gene variant that could result in a 20%–30% difference in feed efficiency in growing and finishing cattle. Capitalizing on this discovery could be worth \$112 per head, or more than \$2 billion annually, for U.S. cattle feeders.

Improving Air Quality in Feedlots

Our air quality research team showed that ground-level particulate matter (dust) concentration could be reduced by 54%–84% by achieving optimal animal density in large cattle feedyards. This team has saved concentrated animal feeding operations more than \$20 million annually in potential fines and remediation.



Controlling Invasive Insects

AgriLife Research and Extension worked with the Texas Department of Agriculture to obtain a Section 18 exemption from the Environmental Protection Agency for an unlabeled but effective insecticide to respond to an invasion of sugarcane aphids. Producer groups estimated savings of at least \$160 million in 2014 alone.



Designing Disease-Resistant Citrus

Our scientists introduced a natural plant defensin (a protein that helps the plant fend off viruses, bacteria, and fungi) from spinach into citrus varieties to control citrus greening, an insect-transmitted disease that threatens to wipe out the nearly \$13 billion citrus industry.



Developing Drought-Resistant Wheat

TAM 111, TAM 112, and TAM 113 wheat are among the most drought-resistant varieties ever developed for the High Plains. Growers realized an almost \$5 million increase in yields when planting wheat varieties developed by Texas A&M AgriLife Research.



Reducing Cotton Irrigation

Researchers found that cutting early cotton irrigations reduced total water use by 20% while reducing lint yield by only 5%. A 25% adoption rate of this irrigation method could reduce annual water requirements by more than 1 million acre-inches, or 27 trillion gallons. This potential water savings could meet the municipal water needs of Lubbock for 20 months.



