

Texas Foundation Seed Service – A production and commercialization unit for Texas AgriLife Research

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Abstract

The Texas Foundation Seed Service (TFSS) is a non-profit, stand-alone unit of Texas AgriLife Research that services most of the plant material improvement efforts of AgriLife plant breeders. Traditional duties include production and marketing of genetically pure foundation class seed of new cultivars for distribution to licensees of the products. TFSS is a liaison between plant improvement programs and the private sector seed companies that both sponsor research and license products. As a part of our duties, we handle business aspects of research commercialization in an effort to allow scientists to concentrate on their respective research projects.

The Texas Foundation Seed Service (TFSS) located in Vernon, Texas, is a non-profit, stand-alone unit of Texas AgriLife Research that services most of the plant material improvement efforts of AgriLife statewide. The service exceptions include citrus and sugarcane (Weslaco Center), rice (Beaumont Center), and vegetables (Vegetable and Fruit Improvement Center in College Station). Operations of TFSS are intended to be self-supporting by generating revenue through sales and services similar to a commercial business.

The original mission of TFSS was to produce and market genetically pure seed of new cultivars developed by the scientists of AgriLife. Although the name implies that TFSS works only with seed, it is involved with production and distribution of vegetatively propagated plant materials too. TFSS works as a liaison between the various plant breeding programs of AgriLife Research and those companies that have interest in licensing and marketing these plant material improvements.

As a part of our work with plant material improvement programs, we either contract production of seed, or work with licensees regarding seed production on most of the following crops:

Forages – Annual ryegrass, clovers, medics, bundleflowers, native and introduced warm-season grasses, cowpeas, beans, and summer dormant cool-season grasses.

Forages include both native (157 million acres) and introduced (111 million acres) pastures in Texas that provides about 70% of the nutrients consumed by livestock. Forage crops are the foundation on which the Texas livestock industry is built. Currently, cash receipts are more than

\$7 billion for cattle, \$3 billion for wildlife, and more than \$700 million in hay to Texas ranchers. Forages also enhance water quality, serve as sinks for the disposal of agricultural and municipal wastes, are renewable sources of energy, provide food and habitat for wildlife, and are used to revegetate disturbed lands and public right-of-ways. TFSS is the sales and marketing vehicle for the three USDA Plant Materials Centers (PMC) located in Texas and has a seat on the USDA PMC Advisory Committee (Texas).

Turfgrasses – Seeded and vegetatively propagated types include – Turf type annual and intermediate ryegrass, Texas x Kentucky bluegrass hybrids, creeping bentgrass, zoysiagrass, buffalograss, and St. Augustine grass.

The turfgrass industry contributes an estimated \$7 billion annually to the economy of Texas. With over 50,000 acres of dedicated turfgrass production and over 3.5 million acres of turfgrass in lawns, sports fields, golf courses, parks, and other turf commercial and industrial sites, turfgrass ranks as one of the highest valued agricultural crops in the state. The scope of the turfgrass industry provides substantial and continuing employment opportunities for the citizens of Texas.

Peanuts (*Arachis hypogaea*)– runner types and Spanish types

Texas production (2008) was 257,000 acres with a farm gate value of \$185.8 million. (NASS website)

Small Grains – Wheat (*Triticum aestivum*), oat (*Avena sativa*), and barley (*Hordeum vulgare*) – all used for grain only, dual-purpose, and forage only

Planted acres in Texas (2008) were about 6.4 million acres with about 3.4 million of these acres used for forage and hay for livestock. Harvested acreage yielded a farm gate price for producers of \$756.8 million. (NASS Website)

Sorghum (*Sorghum vulgare*) – parental lines for use in grain hybrids, forage hybrids, and biofuel hybrids (sweet sorghums and high biomass cellulosic hybrids)

Texas is the largest producer of hybrid sorghum seed in the world. Hybrid seed produced in Texas is shipped throughout the sorghum production areas of the world. Planted acreage of all types of sorghums in Texas was about 3.6 million acres with grain sorghum harvest generating producer values of \$ 648 million and yielding in excess of 1.9 million tons of silage. (NASS website)

Corn (*zea mays*)– inbred lines

Corn production in Texas (2008) for grain was planted on 2.3 million acres yielding a producer value of \$1.2 billion. In addition to grain production, silage production was planted on 180,000 acres producing 3.7 million tons of livestock feed. (NASS website)

Cotton (*Gossypium hirsutum*) – germplasm enhancement and cultivar development

Texas is the largest cotton producing state in the U.S. Planted acreage in 2008 was 5 million acres. Harvested acreage was 3.25 million acres yielding 4.45 million bales with a farm gate value of \$1.14 billion. Cottonseed values, for oil and livestock feed, from this crop increased value an additional \$363.6 million. (NASS website)

In addition to the previously mentioned plant improvement programs, TFSS is also involved with specialty type commercial crops types listed below. These crops include both greenhouse and field production and are another source of economic impact for the producers of Texas.

Ornamentals – Crape myrtle, roses, *Brugmansia*, hardy hibiscus, and other flowering trees and shrubs

Texas is considered to be the third largest output state in nursery and greenhouse production based on wholesale sales values. The nursery and greenhouse production industry in Texas employs 22,700 people and encompasses 21 million square feet of covered greenhouse and shade production area plus an additional 22,162 acres of outdoor production. Wholesale value of nursery and greenhouse sales for Texas in 2007 was \$2.064 billion. Of total sales, 72% was sold in Texas and 26% was sold in other regions of the U.S. Export sales represented 2% of sales. (The Economic Impact of the Green Industry in Texas)

Texas AgriLife Research may be somewhat unique among public research organizations in the fact that the Legislature of the State of Texas has mandated that we protect intellectual property and license the use of inventions to companies that have the ability to broadly distribute products to the producers of Texas and beyond. One purpose for these mandates was that the legislature was anticipating a reduction in traditional funding of public research programs. As a result of our efforts to meet these challenges, we have been successful in broadly licensing products and currently have sales of plant materials developed by AgriLife in about 35 states in the U.S. and approximately 20 countries throughout the world.

Since 2002, the role of TFSS has been greatly expanded to meet these challenges. In addition to the more traditional functions of ‘foundation seed’ organizations, we work closely, not only with the various plant improvement programs, but also with various internal business units and external corporate entities that have interest in various research projects. These efforts were developed to allow scientists to work on their specific research projects without the worry of business issues that are related to commercialization of their research outcomes.

TFSS works with the AgriLife Contracts and Grants office to develop sponsored research agreements, Non-Disclosure Agreements (NDAs), Material Transfer Agreements (MTAs), and production contracts. With the AgriLife Corporate Relations Office, TFSS works with corporate entities to develop public/private partnerships that lead to sponsored research agreements and ultimate licensing of research outcomes. This method is more of a pull-through economic

principle and encourages both AgriLife scientists and corporate research leaders to collaborate to provide research solutions for specific problems.

TFSS interaction with the Texas A&M University Systems (TAMUS) Office of Technology Commercialization (OTC) is on a very frequent basis. TFSS markets many of the plant material improvements to prospective licensees, assists OTC with licensing terms and drafting both non-commercial (evaluation) license agreements and commercial license agreements, manages executed license agreements and monitors agreements for compliance and infringement issues, and collects royalties for OTC on licensed plant materials. OTC then distributes the licensing revenues to the various stakeholders under guidelines set out under TAMUS Intellectual Property (IP) policy.

TFSS also provides royalty collection/license management services for several other land grant institutions that market plant materials into the Texas and SW US markets. Another service provided by TFSS is production and/or seed conditioning services to public and private breeding programs. With some of the revenues generated by TFSS, we are able to provide some longer term investment (funding) in AgriLife plant breeding programs. In most cases, this funding is for assistance in the production of small purification or breeder seed blocks in programs that have commercial potential but lack adequate and timely funding for these small and very expensive production blocks.

TFSS, as a representative for AgriLife, is very active in state, regional, and national seed and agricultural organizations. We also work very closely with the seed certification agencies located in every state where AgriLife licensed products are produced for commercial sales. TFSS acts as a resource for many of our commodity board stakeholders as well as AgriLife internal committees such as the Intellectual Property Management and Commercialization Team, Small Grains Advisory Committee, and Plant Review Committee.

Change is a given for agribusiness and the only constant is that we will continue to see change in the way agribusiness is conducted and in the speed of technological improvements moving to the marketplace. TFSS is fortunate to be a part of the AgriLife team that has led some of the changes and in many cases AgriLife is looked to as an operating model for other universities and public institutions as they move from more traditional funding mechanisms to the development of public/private partnerships and public institution licensing of most or all plant material improvements.

NASS website – National Agricultural Statistics Service

http://www.nass.usda.gov/Statistics_by_State/Texas/index.asp

Information current as of January 26, 2010

The Economic Impact of the Green Industry in Texas

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