Texas Wheat PRODUCERS BOARD

# 2027-28 Research Strategic Direction

## PURPOSE

The Texas Wheat Producers Board has developed a series of farmer-driven research priorities for the 2027-28 funding cycle. This document outlines the research areas, geographic considerations and strategic priorities identified through discussion with wheat farmers and industry stakeholders. These priorities are intended to guide project development and funding decisions while allowing researchers flexibility to propose innovative approaches to addressing the key challenges facing Texas wheat producers. Projects that address multiple priorities, have applicability across production regions or demonstrate potential for meaningful economic impact to Texas wheat farmers are most desired.

## FARMER-DRIVEN RESEARCH PRIORITIES

- **Farm Input Efficiency and Nutrient Management**
  - ***Strategic Direction:*** Evaluate the efficiency, effectiveness and economic return of farm inputs, including nutrient management, to provide farmers with updated information relevant to current varieties, agriculture practices and equipment.
  - ***Areas of Interest***: evaluation and cost analysis of seeding rates by current varieties and intended use (grain, forage, dual-purpose, silage); updated NPK application methods, timing and plant responses for current varieties; soil testing and nutrient placement practices for cost savings; regional cost-analysis of early-season and flag leaf fungicide application efficacy on current varieties.
- **End-Use Quality**
  - ***Strategic Direction:*** Improvement with significant emphasis on maintaining adequate milling-quality standards across test weight, falling number, pre-harvest sprouting and other characteristics that influence marketability and potential price deductions.
  - ***Areas of Interest***: improved test weights and pre-harvest sprouting resistance in variety development; annual ratings of key quality factors across regions and current varieties; agronomic strategies and recommendations for maintaining quality at harvest.
- **Silage Production**
  - ***Strategic Direction:*** Identify profitable and water-efficient small-grain silage production systems with desirable feed characteristics for both dairies and feedlots. Proposals developed in consultation with these end-users are strongly encouraged.
  - ***Areas of Interest:*** an increase of silage trials in the Panhandle and South Plains; alignment of research metrics with the quality measures used by the dairy and feedlot industries; comparing water-use efficiency, yield, quality and profitability between triticale, wheat and other small grain silage crops; comparison of bearded and beardless wheat; evaluation of forage biomass characteristics, etc.
- **Drought and Heat Tolerance**
  - ***Strategic Direction:*** Improve varieties and management practices that help Texas wheat farmers mitigate the impacts of drought and proactively manage production during periods of limited moisture.
  - ***Areas of Interest:*** drought and heat-resistant varieties; water-use efficiency; irrigation cost analysis; dryland production system sustainability; dryland fertilizer efficiency; etc.

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- **Wheat Streak Mosaic Virus Complex**
  - ***Strategic Direction:*** Reduce the negative and potentially devastating impacts of wheat infected with viruses vectored by the Wheat Curl Mite, including Wheat Streak Mosaic Virus, Triticum Mosaic Virus and High Plains Disease.
  - ***Areas of Interest:*** evaluation and identification of novel best management and mitigation strategies; development of resistant varieties with multiple modes of protection; annual resistance ratings of current varieties and other small grain crops; development of producer education resources including planting date and host species information, etc.
- **Hessian Fly**
  - ***Strategic Direction:*** Reduce the negative and potentially devastating impacts of Hessian fly infestations through improved prevention, management and varietal resistance.
  - ***Areas of Interest***: continued development of prevention and management strategies; improved varietal resistance including against evolving biotypes; evaluation of pesticides and seed treatment effectiveness; development of producer education tools, etc.

## ADDITIONAL AREAS OF INTEREST

- Weed Management Strategies
  - Alternative pre-harvest aids and methods; development of best management strategies; herbicide-resistance and management in common weeds including ryegrass.
- Disease & Pest Management and Varietal Screening
  - Continued research on bacterial, foliar, rust and root diseases and common pests including greenbug, aphids, mites and flies; diagnostic support and management recommendations for emerging disease issues.
- Breeding Traits
  - Variety development and evaluation should consider performance across Texas regions and production systems, including graze-out, dual-purpose, silage and grain-only.
  - Drought and heat tolerance, forage biomass, novel and complex disease and pest resistance genes, optimal quality including test weight, pre-harvest sprout resistance and falling number performance, germination and emergence, herbicide tolerance, improved nutritional qualities.
- Large Plot Variety Trials
  - Expanded large-plot testing in key production areas, paired with clear communication of trial design and methodology.
- Marketing and Economics
  - Pricing and marketing strategies for wheat producers; novel approaches to increase domestic demand of Texas wheat; an analysis of where Texas wheat is sold, exported and transported domestically and the impact of farm gate prices.
- Calculator/Model for Silage Harvest Timing and Feed Quality
  - A producer-facing decision tool estimating optimal harvest timing based on moisture, maturity stage and target feed quality.
- Soil Health and Crop Rotation

- Rotations that improve yield and have desirable effects on disease and weed pressure; residue and grazing management in continuous wheat systems; soil practices that improve water capture and retention.
- Quantifying the soil health benefits of wheat production and identifying conservation practice standards in government and private programs that could provide an economic benefit to wheat producers.

## DESIRED PROJECT CHARACTERISTICS

*Proposals aligned with the TWPB research priorities should demonstrate several of the following characteristics. A clear plan for communicating results to Texas wheat farmers is expected of every proposal.*

- Address a significant challenge or opportunity for Texas wheat farmers.
- Demonstrate a clear connection and understanding of producer needs.
- Include measurable objectives and farmer-driven outcomes.
- Provide practical information that can be easily implemented on the farm.
- Address regional needs and applicability when appropriate.
- Build upon existing research, use available resources and leverage partnerships when applicable, including partnerships with milling, dairy, feedlot and other industry stakeholders.
- Include a clear plan for communicating results to farmers and stakeholders.
- Clearly demonstrate the potential impact or value of the proposed research to Texas wheat farmers.