NPMTI NATIONAL PREDICTIVE MODELING TOOL INITIATIVE

NPMTI IS A MULTI-YEAR PROGRAM

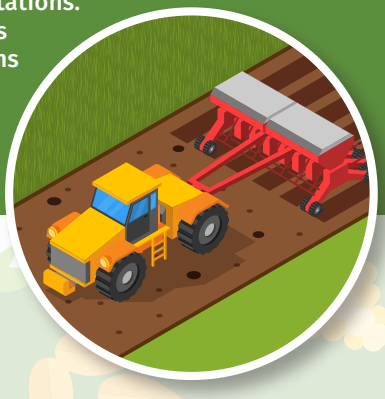
to develop research-based tools to help growers forecast crop diseases and mycotoxins. Started in June 2020, it operates under USDA-ARS.

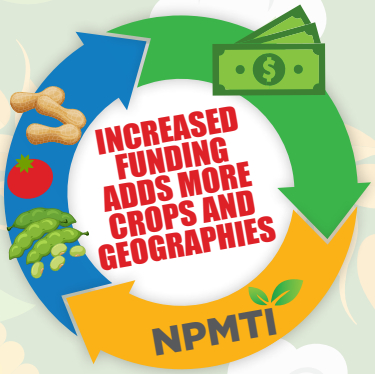
NPMTI brings together pathologists and researchers from 26 states to address diseases that threaten U.S. wheat, corn, and cotton crops. This team coordinates and shares research methods and results at unprecedented levels.

HISTORICALLY, POST-HARVEST CROP RESIDUES

were buried to decompose. With conservation tillage, these residues remain on the surface providing climate change resilience and soil health benefits. However, this also can increase pathogens for future infestations.

Farmers need tools to predict when pathogens will threaten. Wind- or insect-dispersed pathogens require community efforts to control costs and minimize yield/quality loss. NPMTI is adapting recent advancements in human pathogen detection and modeling to agricultural systems.





Corn RESEARCH AREA

Collect data in 8 states for 4 diseases that result in annual losses of $24/acre

SHARED APPROACH:

- Standardize field trials
- Quantify soil and residue-borne pathogens
- Quantify wind-dispersed pathogens
- Assess disease development
- Validate prediction models

Los Alamos NATIONAL LABORATORY

- Create NPMTI databases
- Refine analytics and models to allow for forecasting
- Develop field-based assay for detection of mycotoxins

NAGC NATIONAL AGRICULTURAL GENOTYPING CENTER

- Test for pathogen levels in field samples
- R&D for new pathogen tests
- Standardize protocols for all labs

Cotton RESEARCH AREA

Collect data in 11 states for 5 diseases that result in annual losses of $262.3 million

Wheat RESEARCH AREA

Collect data in 6 states for 2 disease complexes that result in annual losses of $528 million

NFO NETWORKING & FACILITATION OFFICE

- Provide administrative support to all groups
- Maintain committees and communications
- Primary interface with USDA-ARS

NPMTI BENEFITS TO INDUSTRY AND THE ENVIRONMENT

Armed with this information, growers and their consultants can make better informed management decisions

- Ensure Crop Sustainability and Crop Quality Under Changing Climate Conditions
- Improve Soil Health
- Monitor Pathogens and Microbial Diversity in Environment
- Improve Disease Management, Reducing Yield Losses
- Increase Precision of In-Season Disease Management Tactics
- Increase Precision of Pesticide Use

For more information visit www.AgPMT.org