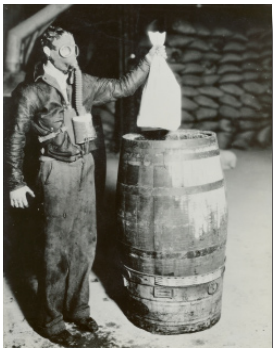


Introduction to GMPRC

The Agricultural Research Service's **Grain Marketing and Production Research Center (GMPRC)** is the United States Department of Agriculture's main facility for conducting research on measuring, protecting and controlling the quality of cereal grains throughout the grain industry.



The first USDA-funded scientist came to Manhattan in 1919. Additional federally-funded scientist came on board in the 1920s and 30s. GMPRC slowly expanded and in 1971 the first research facility was constructed.

GMPRC in Manhattan, Kansas, is located in the heart of the Great Plains, which includes 13 states and produces more than 2/3 of all U.S. wheat, corn and soybeans.

There are approximately 100 employees and more than 35 scientists and engineers working at GMPRC. Each research unit has a unique mission, interacts with key stakeholders, and contributes to one or more National Programs.

Operating from a 60,000 square-foot facility and the nation's only 50,000 bushel capacity research grain elevator, the Center is composed of five research units:

- Biological
- Engineering
- Grain Quality and Structure
- Plant Science and Entomology
- Wind Erosion



Grain Marketing and Production Research Center

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GMPRC Manhattan, Kansas

GMPRC's Mission: "Conduct innovative research and develop new technologies to improve natural resource conservation and the production, harvesting, storage, marketing and utilization of grain to ensure a safe, abundant, high-quality grain supply."



United States
Department of Agriculture



Agricultural Research
Service

Biological Research Unit

The Biological Research Unit conducts research on stored-product insects to develop

pest management technologies throughout the

marketing chain.

Multidisciplinary teams conduct

research on:

• efficient use of insecticides and

physical control technologies, such as aeration

or heat treatments;

• ecology, population dynamics and behavior of pest and beneficial insects to optimize

integrated pest management systems;

• developing novel insect control techniques

based on genomics and proteomics.



Engineering Research Unit

The Engineering Research Unit (ERU)

develops technology to measure grain

quality and improved handling and storage

techniques. To meet industry needs, ERU

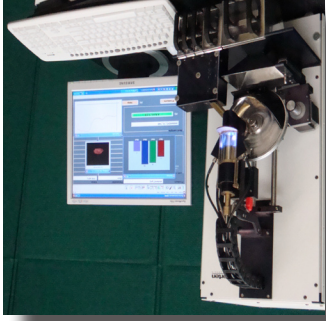
has projects that: • develop technology to select kernels with

specific quality traits for breeding lines;

• develop image based sorting device;

• develop improved storage and handling techniques;

• provide engineering support, such as developing techniques to rapidly measure characteristics of insects, including vectors of infectious diseases.



Grain Quality & Structure Research Unit

The Grain Quality & Structure Research Unit, which includes the Hard Winter Wheat

Quality Laboratory, ensures the safety and superior quality of the U.S. grain supply for

the consumer by:

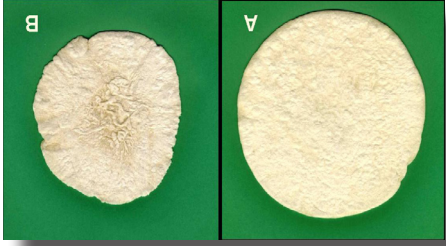
• conducting basic and applied research to identify the physical characteristics and structural/biochemical components governing

grain quality;

• developing rapid, precise and accurate predictive technologies for cereal

grain quality assessment; evaluating the end-use

quality of cereal grain breeding lines.



Plant Science & Entomology Research Unit

The Plant Science and Entomology

Research Unit (PSERU) provides new genetic solutions for wheat production

problems. PSERU objectives are: • develop adapted hard red or white wheat

breeding lines with improved resistance to biotic and abiotic constraints;

• increase our understanding of the molecular basis of parasite virulence, host

resistance and stress in wheat;

• develop and apply traditional and marker-assisted

selection technology to breed more efficiently for these traits.



Wind Erosion Research Unit

The Wind Erosion

Research Unit provides science-based wind

erosion technology for environmentally,

economically and socially sustainable agriculture. Principle

objectives include: • improve the Wind

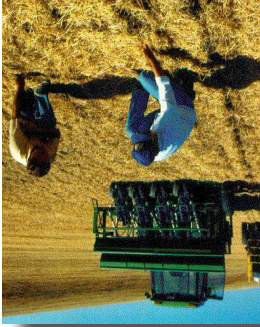
Erosion Prediction System (WEPS) for

cropland and extend it to range, forest and disturbed lands;

• increase understanding of particulate emissions from wind erosion processes;

• develop economically and environmentally viable practices, guidelines

and systems that customers can apply to control wind erosion.



Collaboration with Kansas State University

Kansas State University (K-State) has a

world-renowned reputation in many fields; however, they have an exceptionally strong

program in agriculture. GMPRC scientists enjoy a close-working relationship with

scientists at K-State, and the Plant Science and Entomology Research Unit is housed on

the K-State campus. In addition, a majority of the scientists

at GMPRC are adjunct faculty members at K-State, where they

participate in joint cooperative research activities.

There are also approximately 65 K-State

students who work at GMPRC each year.

