GMPRC Update

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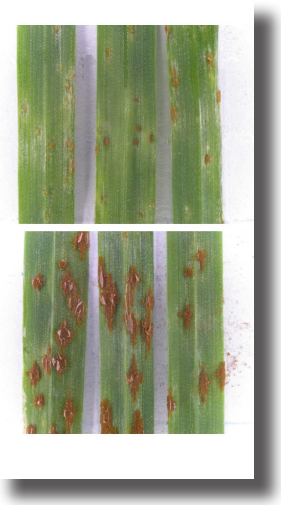
Winter 2008

Our mission at GMPRC is to 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.
Comments or suggestions? Tom Shanower, Center Director, tom.shanower@ars.usda.gov

On the research side....

An everyday goal that John Fellers, Research Molecular Biologist in PSERU, has is to find something new to explore and question. Fellers said when he runs out of questions then he will know he needs to find something new to explore.

He is currently conducting research on wheat genomics and leaf rust. He is trying to find which genes will make the wheat resistant to disease. With leaf rust, he is trying to find what genes cause disease. Fellers said that his research isn't directly seen in industry but his research is more about the basics. His research has proven that it is possible to sequence the wheat genome and it is possible to clone wheat genes. This makes it possible for other researchers to conduct research on different areas of wheat genomics and find more about cloning wheat genes.



Fellers has been working with wheat genomics for 10 years. He explained that it is an ongoing process because he finds new questions to answer every day. His research on leaf rust is a new project. Fellers received a grant to sequence the DNA of leaf rust. He said he was very proud that he received this grant and is excited to do the research.
Fellers didn't think he was always going to be a Research Biologist. When he attended Oklahoma State as a freshman, he had dreams of going home and taking over the family farm. This all changed when he started his on campus job working with wheat tissue culture. Since then he has turned into a successful Research Biologist. One of his research accomplishments he is most proud of is helping clone the first disease resistance gene in wheat.

Award and Grant Winners...

Jeff Anderes
2008 NPA Award of Excellence
Information Technology (IT)

"For outstanding achievement and dedication in delivering innovative IT services to the Grain Marketing and Production Research Center."

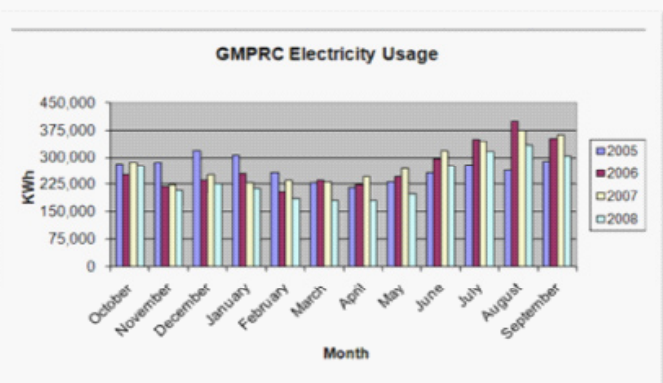
Joanne Gresens
2008 NPA Award of Excellence
Safety, Health and Environment

"For exemplary service in maintaining a safe working environment at the Grain Marketing and Production Research Center."

Community Interest…

All areas of GMPRC are trying to conserve energy.

- The Energy Conservation team has put together an estimate of individual energy requirements for different equipment used at GMPRC to help identify where we can "get the biggest bang for our buck."
- Units have been asked to consolidate sample storage to help save on the operating costs of chambers, freezers and refrigerators.
- Room temperatures have been turned down outside our normal working hours 8-4 hours.
- The lighting in the hallways will be reduced to only the minimum amount needed.

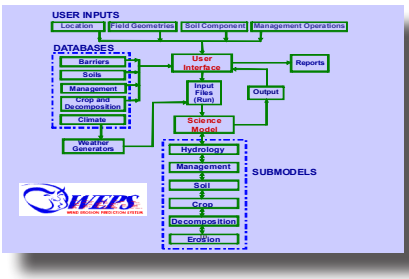


Spotlight…

After 41 years of service with the ARS, Larry Hagen has decided to retire. He has worked in the Wind Erosion Unit and has significant accomplishments in helping provide science-based wind erosion technology for soil science and conservation, and economical and social sustainable agriculture

GMPRC: What research accomplishment are you most proud of?

Larry Hagen: We have been able to move the science of wind erosion prediction and the design of wind control systems forward from an empirical system to a system that is physically-based and embodied in a user-friendly, computer model called the Wind Erosion Prediction System (WEPS). To accomplish this, we successfully identified the major physical processes that occur during wind erosion, formulated mathematical models to describe these processes, and then used wind tunnel and field experiments to develop model parameters. The WEPS model is currently undergoing testing by NRCS for nationwide implementation in the U.S. Because it is based on physics, WEPS is widely applicable and has already been used by several environmental consulting firms as well as other countries including Canada and China.



GMPRC: How has your research affected the study of wind erosion?

Larry Hagen: In developing WEPS, we identified the various individual physical erosion processes, such as the breakdown of immobile soil clods or crusts by impacts from eroding soil.

We now often design our wind tunnel and other experiments to study the individual erosion processes even though many erosion processes often occur simultaneously in the field.

We now design erosion field studies to separate the suspended soil from that moving along the surface that can be trapped at field boundaries to improve our estimates of off-site damage by wind erosion. In addition, parameters that effect weathering of crop residues and stability of immobile aggregates are now measured in field studies.

Other new investigations include improving the stability and durability of tillage ridges, and reducing residue decomposition rates.

GMPRC: Any great plans after retirement?

Larry Hagen: I have enjoyed my service with ARS and hope to complete some current manuscripts and then gradually increase my time with service organizations, hobbies, and traveling.

Thank you for your years of service, Larry!