

# Integrated Pest Management Programs to Reduce Reliance on Methyl Bromide Fumigation for Rice Mills

T. McKay, L. T. Wilson, F. H. Arthur,  
J. F. Campbell, B. Adam, Y. Yang,  
T. E. Reagan, and J. Beuzelin

# History

- Research Team first formed in 2001 with Terry Howell and Dennis Gardisser at U of Arkansas, Frank Arthur with USDA-Manhattan, Ted Wilson TAMU, Michael Boyd U of Missouri
- 2001- Controlled Ambient Aeration as a Pest Management Strategy in Stored Rice

# First Project

- Survey of on-farm rice storage practices
- Research with aeration in stored rice
- Added Canchun Jia and Terry Siebenmorgan from U of Ark., Yubin Yang from TAMU
- Developed initial web-based model
- Conducted a series of workshops in 2004

# Second Project

- Team consisted of Arthur, Wilson, Yang, Siebenmorgan, added Jim Campbell from ARS-Manhattan, Tanja McKay A-State, Gene Reagan LSU, Brian Adam at Oklahoma State (OSU), Jean Meullenet at U. Ark.
- 2007-Integrated Post-Harvest Rice Management and Information Delivery: Optimizing Insect Control and Grain Quality

# Second Project

- Further expansion of web-based model
- Effects of insect lesser grain borer damage on quality of milled rice-included economics
- Seasonal history of insects in rice mills
- Assessment of control through aeration in bulk rice and aerosols in mills
- Workshops in 2011

# Third Project

- Members of second team minus Siebenmorgen and Muellenet
- 2011-Integrated pest management programs to reduce reliance on methyl bromide fumigation in rice mills
- Emphasis almost entirely on milling

# Third Project

- Largely what we are reporting on in this series of workshops in TX, LA, AR, and CA
- Red flour beetle was the target insect pest
- Examined seasonal history of red flour beetle and other insects in selected milling sites primarily in AR, continued work in LA

# Fourth Project

- Julien Beuzelin from LSU replaced Reagan
- 2014-Alternatives to Methyl Bromide for Effective IPM in Rice Mills
- More critical analysis of aerosols and contact insecticides for insect control
- Integrating economic analysis into the existing web-based model

# Fourth Project

- 2014-Alternatives to Methyl Bromide for Effective IPM in Rice Mills
- More critical analysis of aerosols and contact insecticides for insect control
- Evaluation of grain protectants
- Yes, more workshops in 2018!

# Summary

- Projects have spanned almost 15 years
- Only group in USA conducting research with stored rice and rice mills
- We have a number of cooperators that we thank for allowing access to their facilities
- Research has supported a number of graduate students at various institutions