NAICC
Efficacy Research Workshop

How to Conduct Good Efficacy Research
Pre-Trial Planning

Resources for Great at least Marginal Success

J. David Moore

Southeast Ag Research

Chula, GA
Why This Guy?

Been Conducting Efficacy trials >25 years

Efficacy trials account for ~70% of our workload

Opportunity to build your “brand”

Found almost every possible way to ruin a trial
Jacks-of-all-Trades

• Weed control / Herb Tolerance / ROT crop
• Disease, Insect/Mite, Nematode control

• Adjuvant testing
• PGR / Biostimulant / Crop Enhancement
• Fertility Response / Soil amendments
• Variety Screening
• Off-Site movement
Our Crop Mix

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<th>Crop Type</th>
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<td>Wheat</td>
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If it is worth doing, ........

• Be transparent about inexperience

• STRIVE to deliver quality data
  – Add reps, increase plot size
  – Not happy with the trial? ---- start over
  – Provide additional data when feasible
Should I Bid This Trial?

- A Place to Put it?
- Equipment?
- Pests?
- Time & Motivation?
- Personnel?
- Enough Expertise?
Cooperating Farmers

• Easier & Better Quality crop - sometimes

• Loss of control
  – Communication
  – Drift (problem in orchards)
  – Accidental harvest

Avoid Mega-Farms  Avoid You-Picks
Cooperator may Frown
Grow It Yourself

• Independence
• Greater Control & Flexibility

• More Equipment
• More Expertise & Personnel

• Long-term Control of Land
• More Cost ?
KNOW YOUR FIELDS
Refer Client to Your Competitors
EQUIPMENT

Trucks    Trailers    Tractors    Tillage
Planters  Mowers      Harvesters  Irrigation
Shellers  Sorters     Microscopes Storage
Greenhouse Cooler    Seed Cleaner
Gins       GPS/AutoSteer Soil Sampler
Seed Treater Seed Counter Balances
Environmental Monitoring Soil Moisture
Refractometer, Penetrometer, NDVI, Drones, etc
APPLICATION EQUIPMENT

– Micro sprayer
– Handheld booms of various configurations
– Tractor mounted / Self Propelled
– Planter mounted (liquid & granular)
– Airblast
– High clearance
– Irrigation injection
– Drop spreader
– Seed treater
PESTS

If you plant it, they may not come
Pest Inoculation

- Doesn’t always work
- APHIS permits
- Can be Expensive
- Time consuming
- Unexpected outcome
  - Could import resistance
  - Could create local epidemic
Create Conducive Environment

- Crop Rotation
- Variety Selection
- Planting Date (s)
- Intercropping / Trap Crops
- Fertilization / Irrigation
- Eliminate beneficials
- Create a “nursery”
Scheduling

• Ever wake up at 3 AM because you forgot to ..........?

• Juggling records  
  9 balls = 55 sec
  7 balls = 12 min 51 sec
  5 balls = 2 hr 41 min
  3 balls = 12 hr 5 min

  Don’t commit to more than you can juggle
Pests Alter Your Schedule

• They arrive at inconvenient times

• Application Timing Often Critical
  – Downy mildew
  – Earworms
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Efficacy evaluations are TIME consuming

Some projects require much person-power
HELP WANTED

Must Have Extensive Experience in at Least 5 Key Areas:

All aspects of crop production, computer/electronics, diesel mechanic, electrician, welder, carpenter, plumber, engineer, accountant.... AND

Must love monotonous data collection in the hot sun, cold rain, mud, wind, humidity, etc.

24/7 Availability preferred, Best if no life outside of work
PERSONNEL / EXPERTISE

Agronomist
Statistician
Entomologist
Plant Pathologist
Weed Scientist
Nematologist
Breeder
Soil Scientist