General Scouting Tips and Safety
Crop Protection Network Virtual Regional Crop Scout School

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Goal of Scouting

• Pest identification and/or diagnosis of the cause of crop injury
• Accurately estimate crop plant health, stand, growth stage and populations of any pests present
  • Quantifying pest in order to compare to economic thresholds
Why is scouting important?

Make decisions this year
- Replant decisions
- Is treatment needed? When and what?

Make decisions next year
- Deciding crop rotations
- Choosing variety, seed treatment, traits, etc.

Manage expectations and make marketing decision
- Ex: Fusarium head blight in wheat: Is there a chance of mycotoxin contamination?
Resources – Gather beforehand
Know what to look for

Assemble references
- Books
- Publications
- Internet – Crop Protection Network
- Print media
- Word of mouth

Know what to look for
- Local ag news
- Twitter
- Coffee clutch
- Timeline
Resources: Timelines

- Some pests can only infect at a certain time
- Some are more likely at certain times
- Some need particular environmental conditions

Timeline created by Dr. Alison Robertson
Collect Information

• Contact grower
  • Let them know when you are coming, ask if any special instruction
  • Things to look for, where to enter field, etc.
  • Find out how they want what you see/results shared with them
• Map from plat book
• FSA map (download online)
• Soil map (soil survey online)
• Google Maps satellite imagery

http://websoilsurvey.nrcs.usda.gov/app/
Collect Information

- Previous crops, adjacent crop, and non-crop areas
- Chemicals used on or near the crop
  - Herbicides, fertilizers, fungicides and insecticides
  - Indicate when applied, how applied, rate of application, weather conditions during and following application
- Planting date, depth, and seedbed conditions
- Hybrid/variety information (note known disease resistance, traits, etc.)
- Current soil test information, soil moisture and compaction
- Recent weather events (rain gauge, online sources, regional weather stations, ask locals)
Supplies

- Field maps
- Field guides
- Paper and pen to take notes
- Safety glasses
- Hand lens
- Pocket knife/scissors
- Clipboard
- Clicker counter
- Sampling bags/ envelopes
- Shovel or hand trowel
- Old newspapers/ paper towels / paper bags
- Sharpies
- Cooler
- Digital camera
- First aid kit
- Water
# Safety

## Pesticide applications
- Be aware of past or upcoming applications, and REI (restricted entry interval)
- Communicate w/ farmer

## Severe weather
- lightning, tornadoes, flash flooding
- Check weather prior to leaving and have a plan

## Appropriate clothing
- Sunscreen, insect repellent
- Footwear (boots?)
- Pants and long sleeves in some situations
- In morning – beware of dew

## Driving in rural areas
- Parking
- Uncontrolled intersections
- Steep shoulders
Head to the field!

• **Zoom in and zoom out**

• Want to have a systematic understanding of what is going on and quantify the problem
  • What pests or problems are present?
  • How often does the problem occur? Where in the field?
  • How much damage is the problem causing – both now and in the future?
Zoom out

• Where in the field, how widespread?
• Random or aggregated? Aggregated in a specific pattern?
• Is the problem more prevalent along a fence or field edge, the entrance of a field, or along a waterway?
• Is the problem in the affected area more severe in certain soil types, low areas, or on exposed slopes?
• Does the pattern correspond to tillage, planting, spraying, harvesting, or other field activities?
Paths to walk in field

• Avoid the outside 100 feet of field
• Follow a pattern through the field
• Make “random” stops every 5 acres or so
  • Close your eyes and move 10 steps
  • Throw something, such as a trowel
• Examine plants at your stopping points
• If your big picture scan revealed variation, be sure to stop in each of them at least once
Example patterns to walk
Aim to assess a minimum of 50-100 plants
What’s the problem?
Biotic and abiotic stressors

Use your resources
Considerations:
• Signs and symptoms
• Time period
• Environment
• Reports in the area

Disease
Insect Pests
Drought Stress
Soil Fertility
Weed Pressure
Zoom in: Observe individual plants
Check individual plants, entire plant
Utilize your local diagnostic clinic

When in doubt, always best to confirm with the diagnostic clinic

- Send multiple plants, from good and bad spots of field (labelled)
- Send entire plant when possible, dig (not pull), wrap roots so soil does not come in contact with foliage
- Insects can be stored in rubbing alcohol or white vinegar
- Check lab website for specific instructions, forms, etc.
- Prevent wilting in field, in cooler or dark place in car
- Send plants in paper bags or wrapped in newspaper
Record information

- By hand or digital options (smartphones, iPads)
- Good to have both on hand, phone can die, weather, etc.
- Use known scales/systems

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Happy Scouting!

Resources and Acknowledgements

• Contributions from Warren Pierson, Adam Sisson, Darren Mueller and the https://www.ipm.iastate.edu/curriculum

• For further information:
  • Crop Protection Network (cropprotectionnetwork.org)
  • Your state or county extension website and personnel