



**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

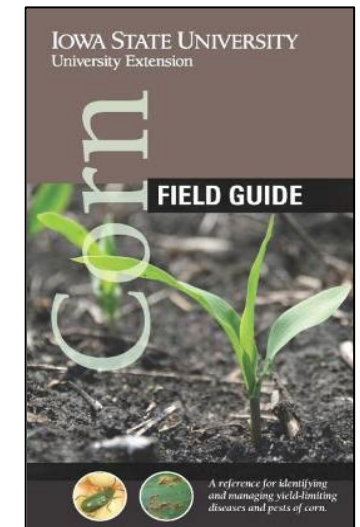
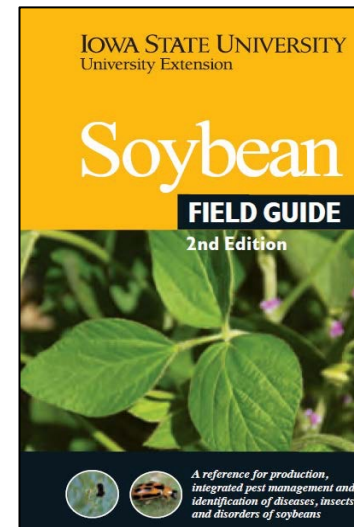
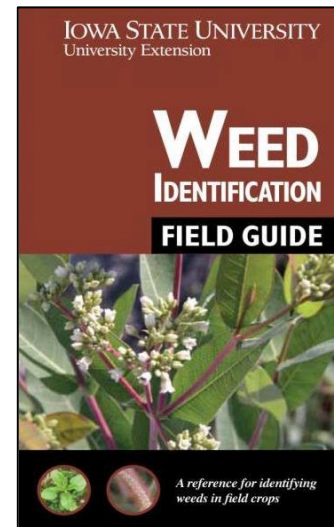
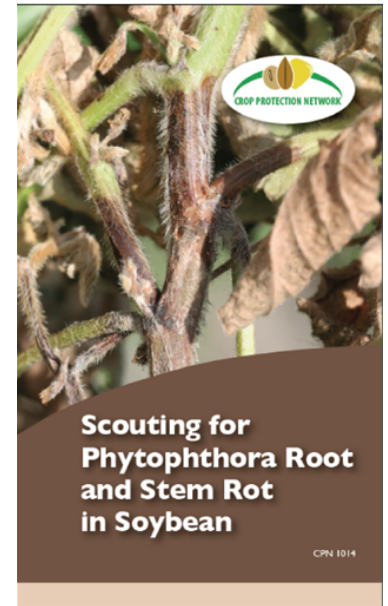
## Know what to look for

### Assemble references

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

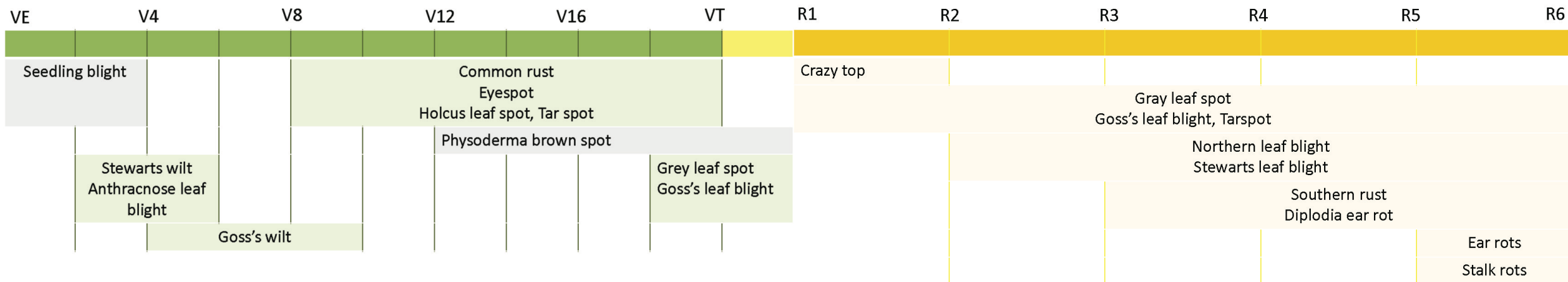
### Know what to look for

- Local ag news
- Twitter
- Coffee clutch
- Timeline



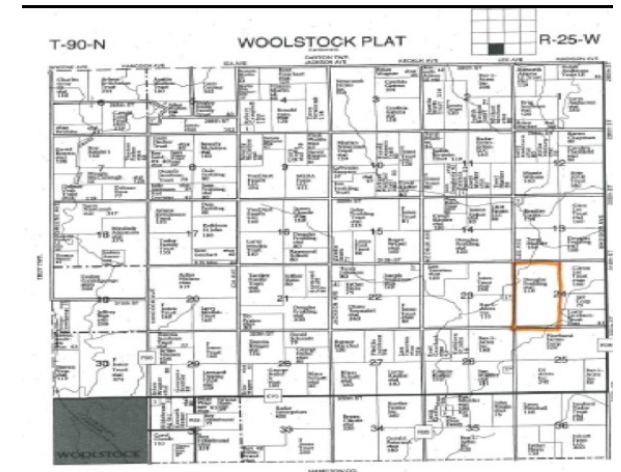
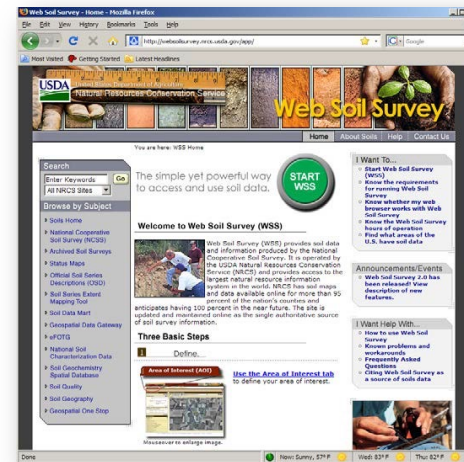
# Resources: Timelines

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



# 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

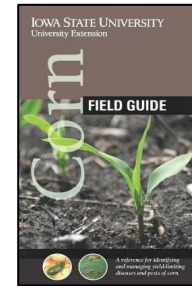
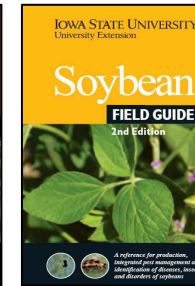
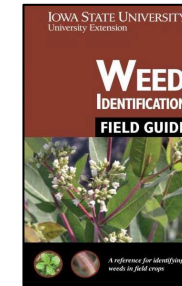


# Collect Information

- 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?



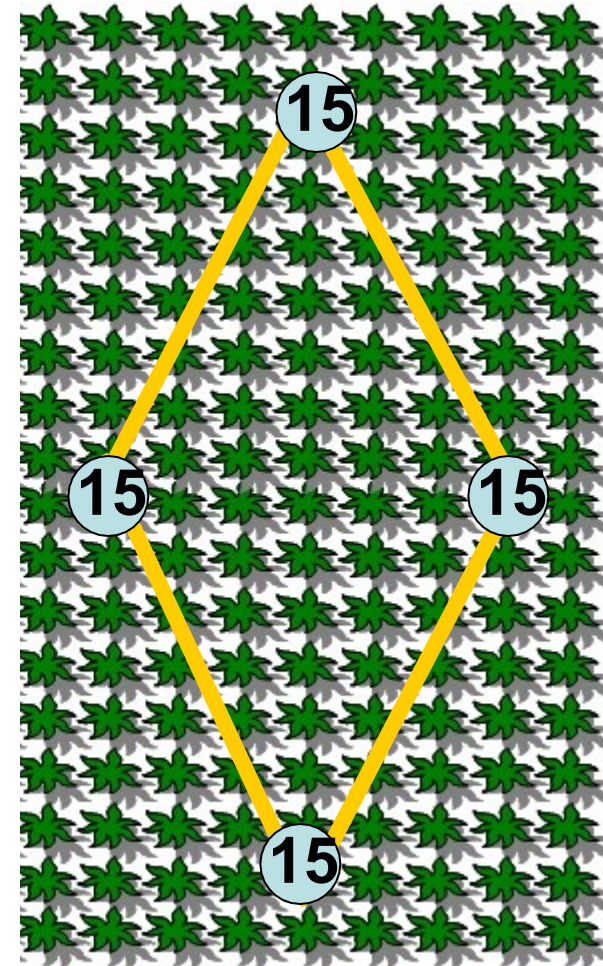
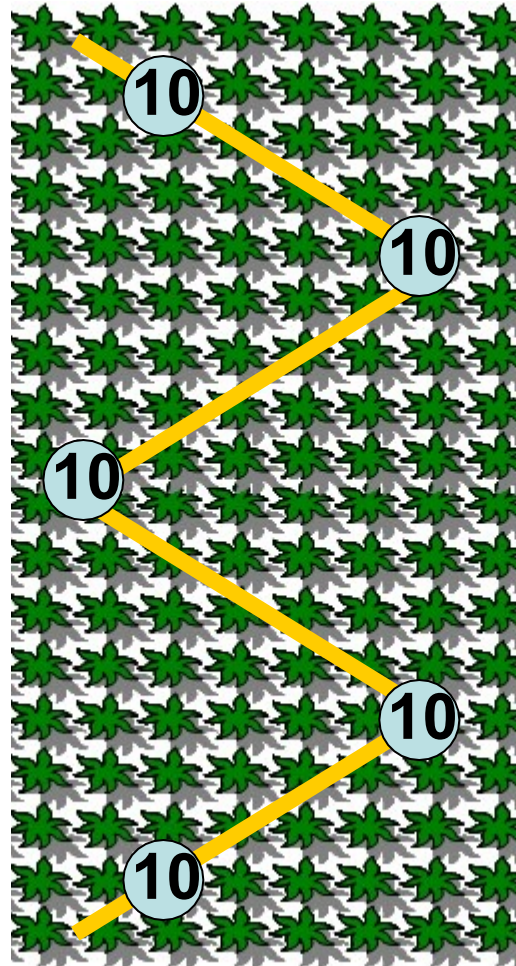
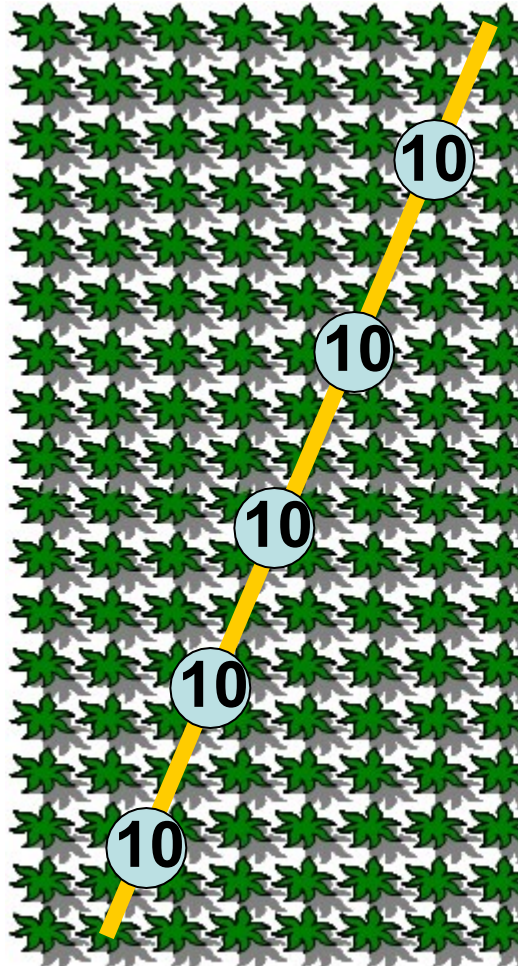
# Paths to walk in field

- 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



## Zoom In

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

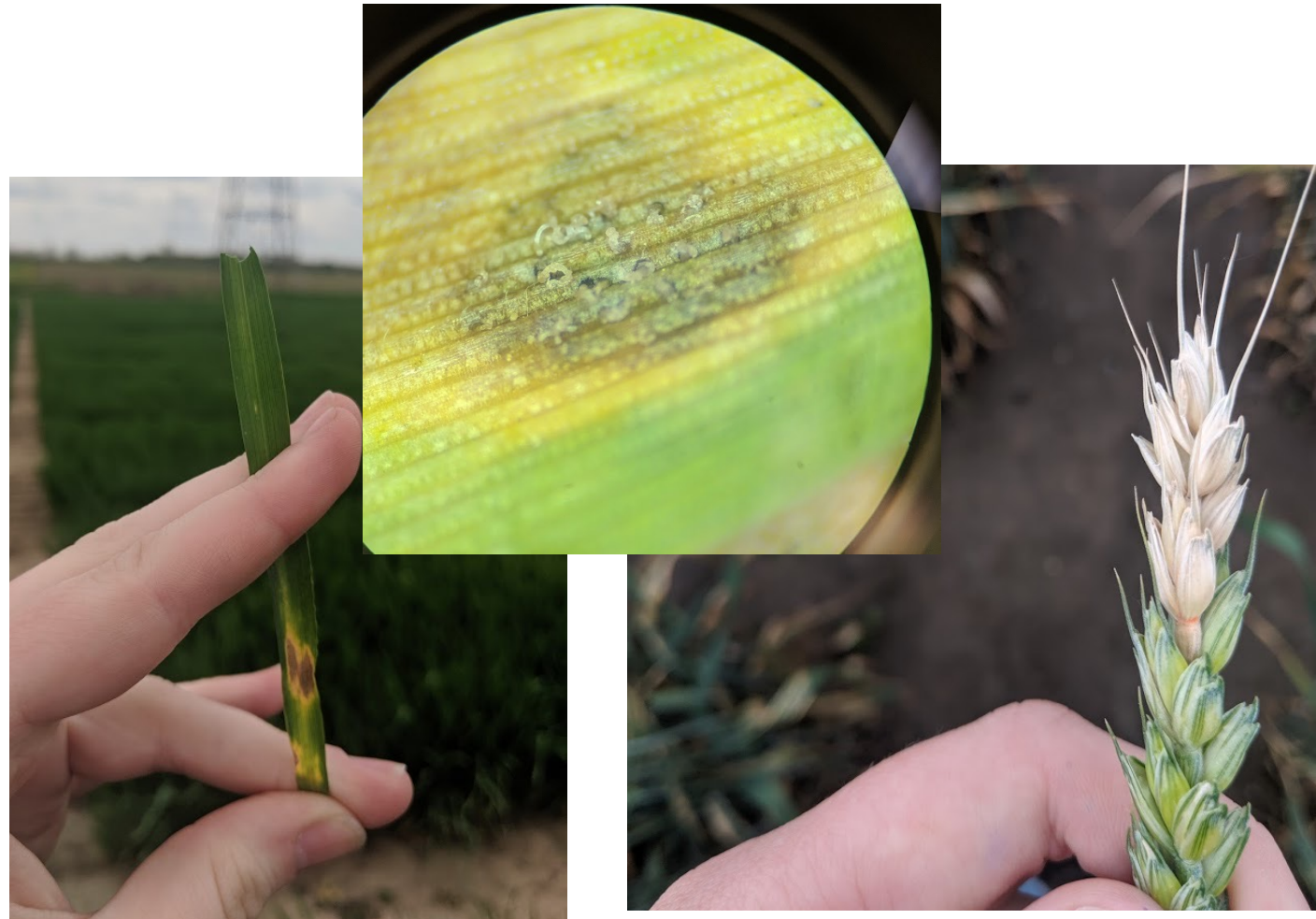
Drought Stress

Soil Fertility

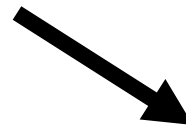
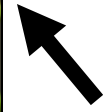
Weed Pressure



# 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**

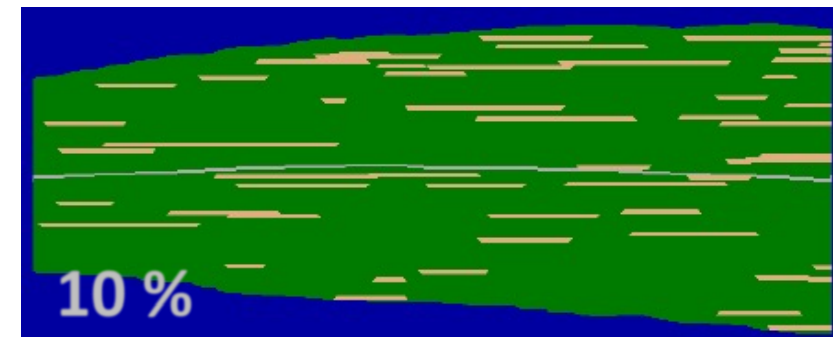
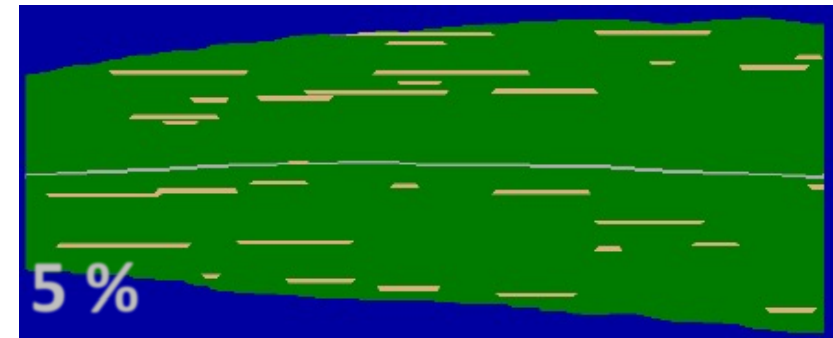
- Send multiple plants, from good and bad spots of field (labelled)
- Send entire plant when possible, dig (not pull), wrap roots so soil does not come in contact with foliage
- Insects can be stored in rubbing alcohol or white vinegar
- Check lab website for specific instructions, forms, etc.
- Prevent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

Field	Stop	1	2	3	4	5	6	7	8	9	10
1	1										
1	2										
1	3										
1	4										
1	5										
1	6										
1	7										
1	8										





# 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](http://cropprotectionnetwork.org))
  - Your state or county extension website and personnel

