# Disease or herbicide damage ?

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# Proper identification is the key

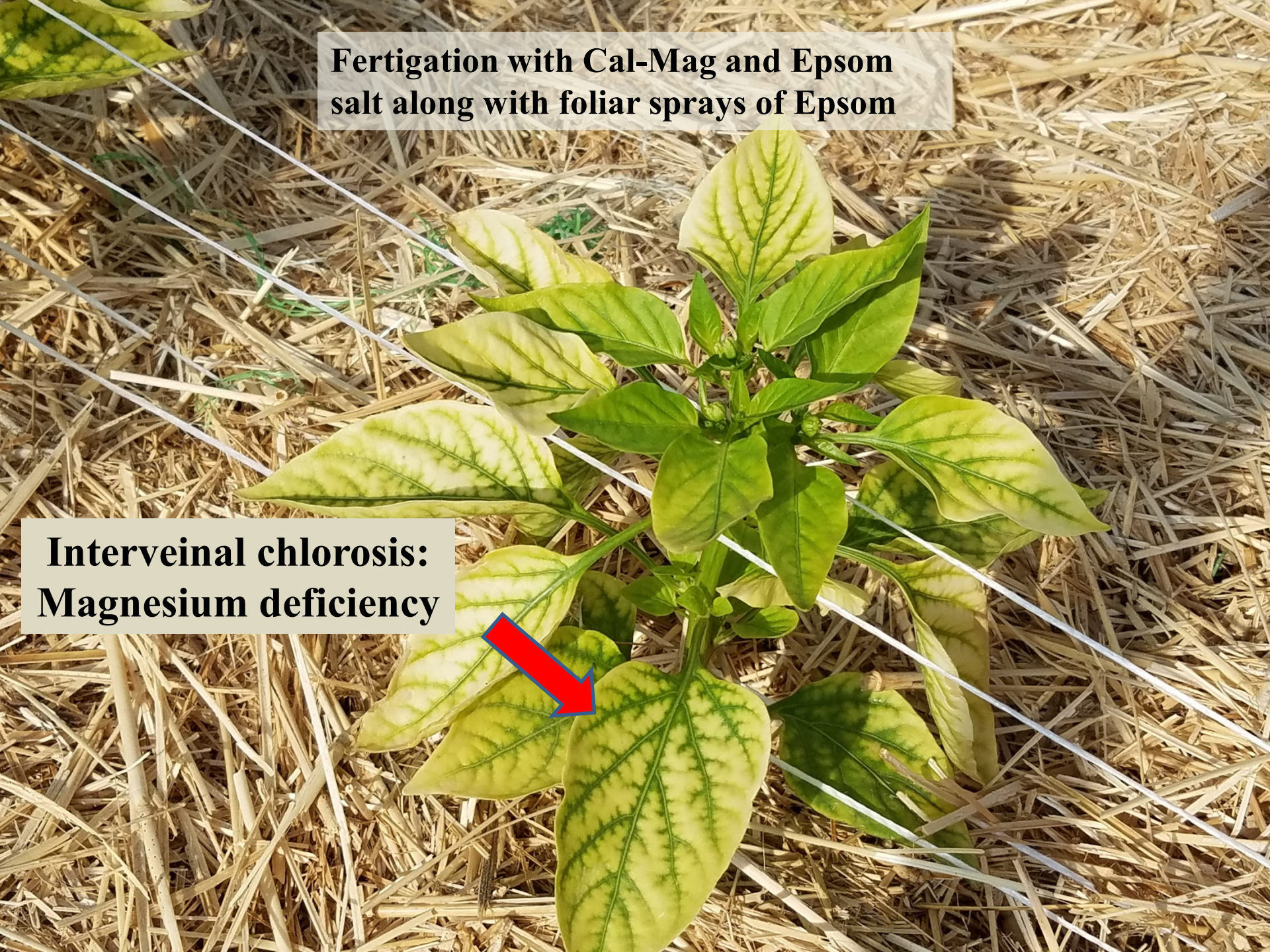
- Make the best use of your smartphone
- Keep a tab on daily activities carried in and around your crop
- Are the symptoms localized in the field?
- Is there a pattern?

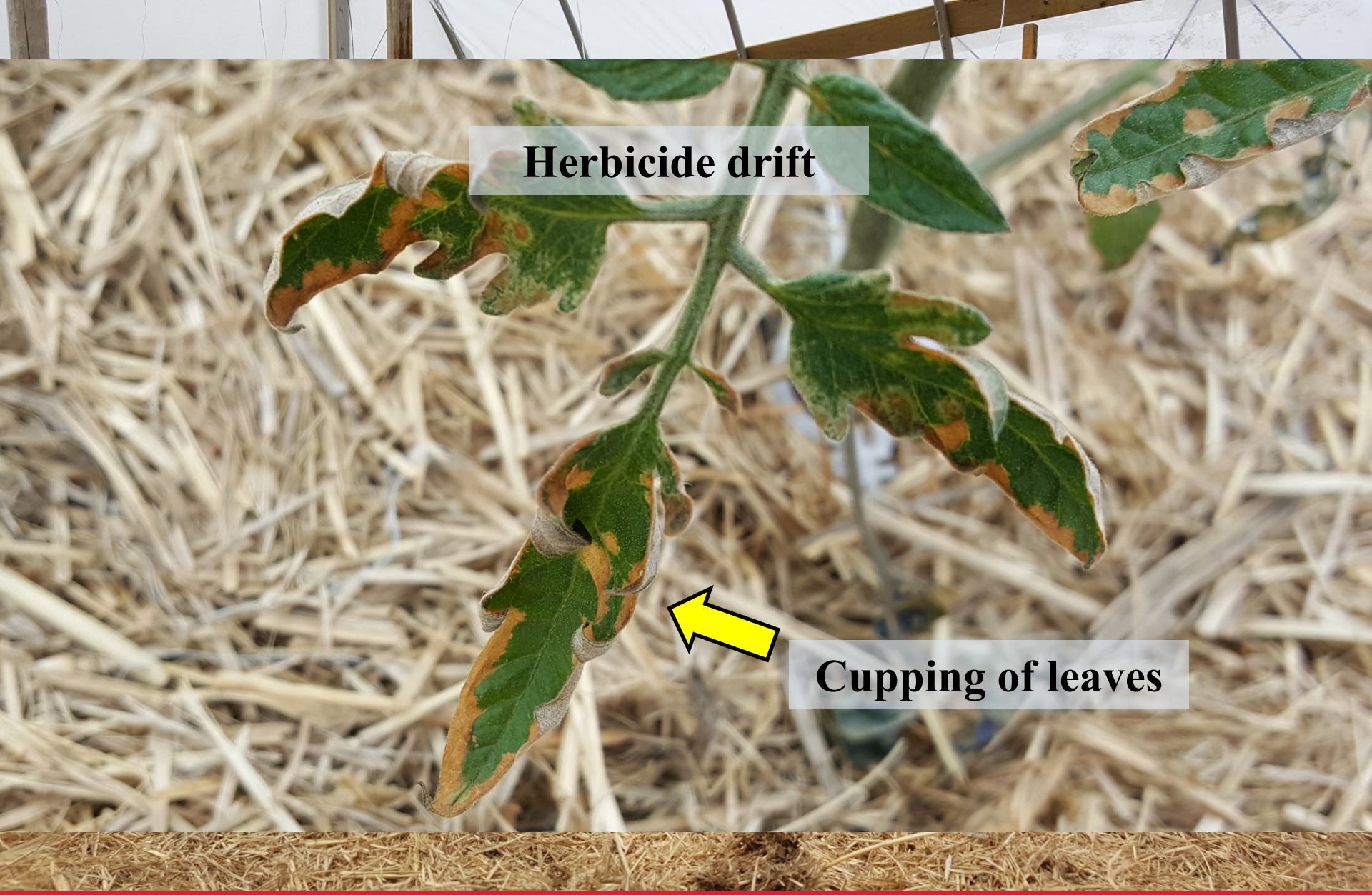
# Herbicide damage could look like disease but..

Clues to chemical injury include uniformly distributed symptoms that appear suddenly in the entire field or within areas in the field and absence of plant pathogen signs (e.g. fungal mycelium, fruiting structures, or spores; or bacterial ooze)


Chemicals Disease Drought **Mg** **N** **K** **P** Healthy

http://www.omafra.gov.on.ca/english/crops/field/news/croppest/2007/12cpo07a3f1.jpg


Fertigation with Cal-Mag and Epsom salt along with foliar sprays of Epsom
Interveinal chlorosis: Magnesium deficiency


Herbicide drift
Cupping of leaves

# Paraquat damage

# 2,4-D damage on tomatoes


Response could be cultivar specific
Scarlet Red
Jet Star


This is not herbicide drift. This is physiological leaf rolling

# Physiological leaf roll

Indeterminate cultivars of tomato are reported to be more sensitive to this disorder than determinate cultivars.

My recommendation would be to:
1. reduce stress on plants as much possible, 2. Don’t overfertilize and overwater, 3. Avoid severe pruning


Presumably 2,4-D drift on melons

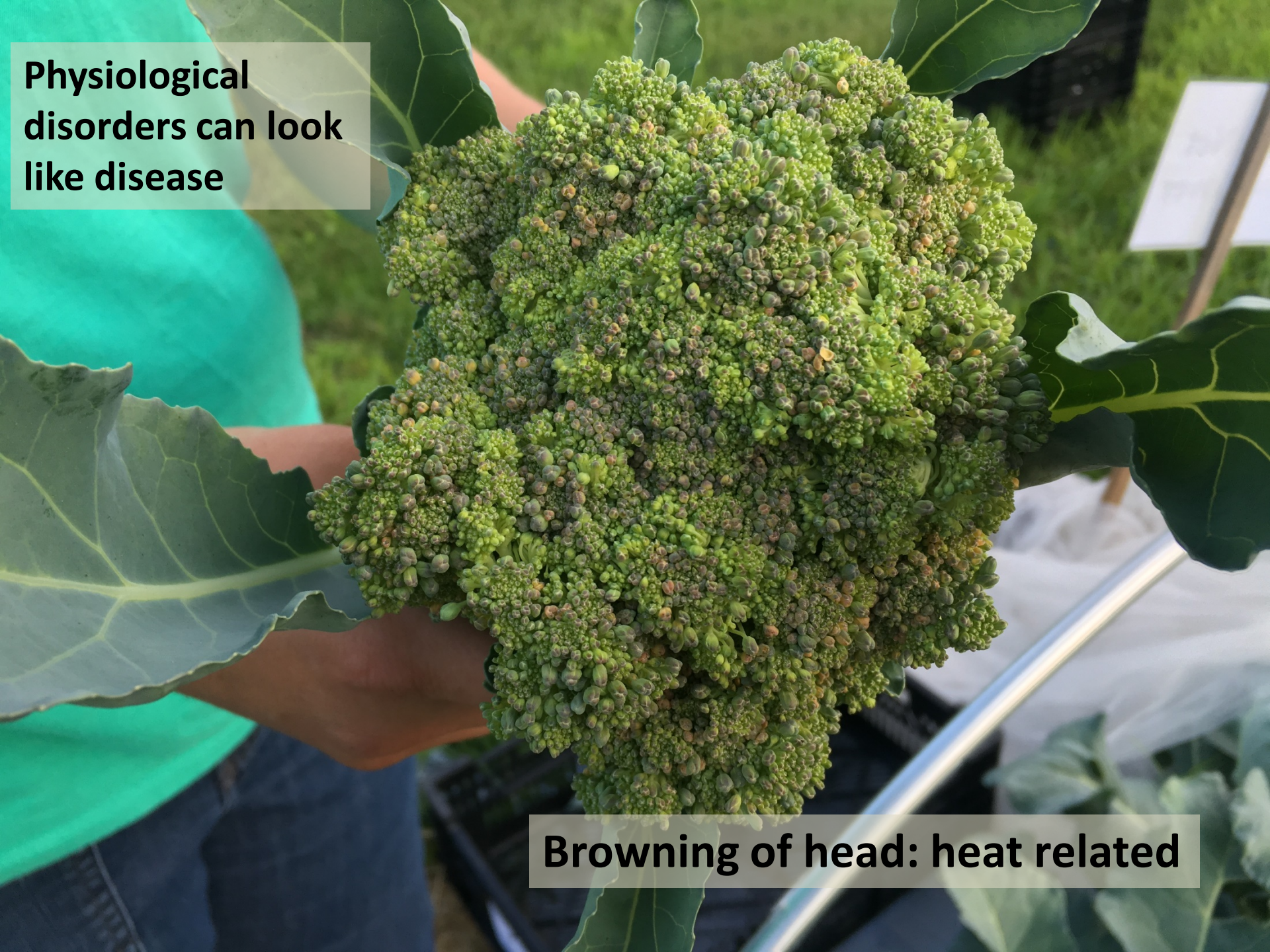

Bleaching at the base of
leaflets: Glyphosate damage


Sulfentrazone damage


Prodiamine damage


Dicamba damage

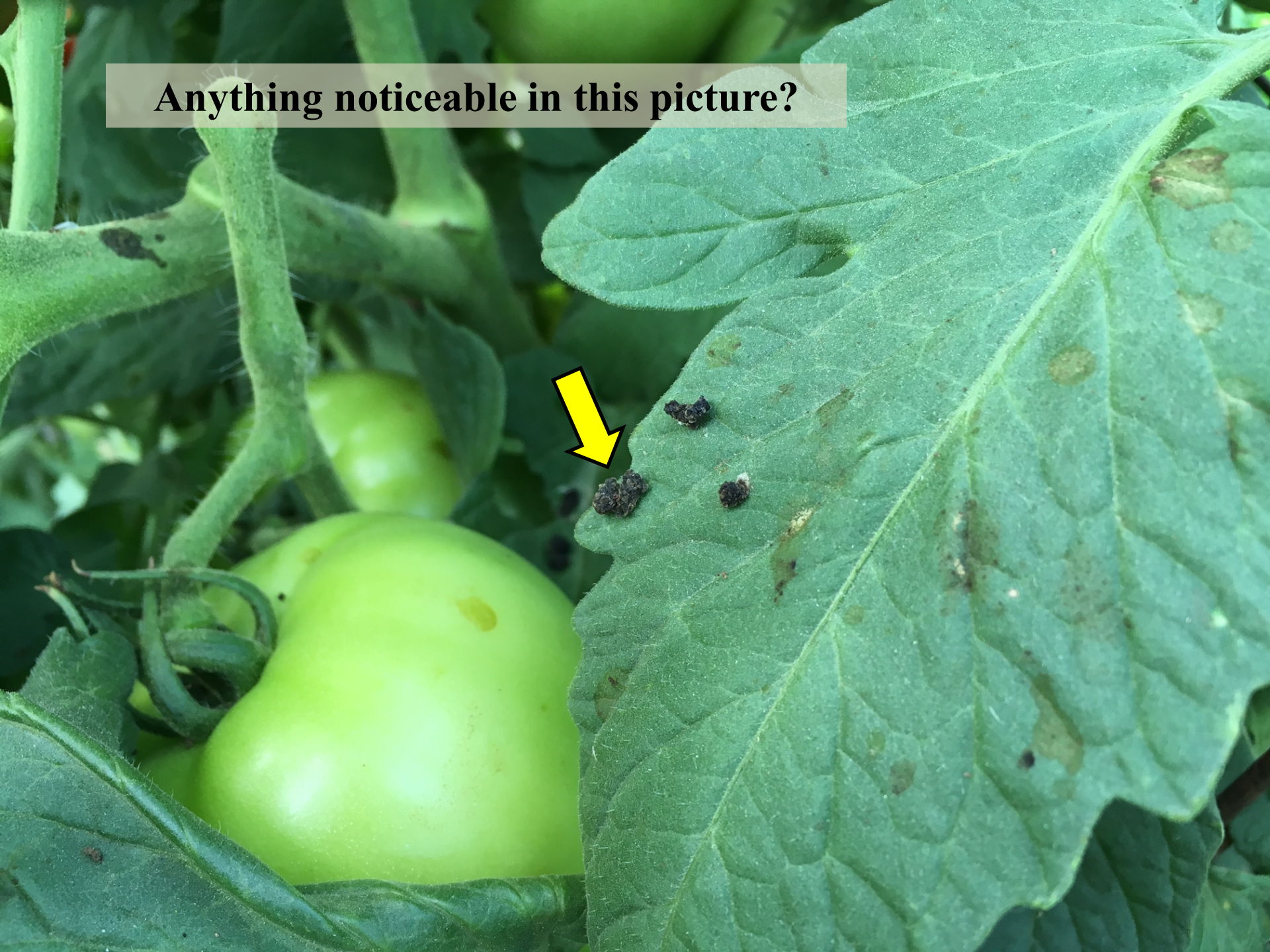
Spray drift from adjacent sweet corn plot: The product sprayed Lexar (Syngenta). Active ingredient: s-metolachlor, atrazine, and mesotrione

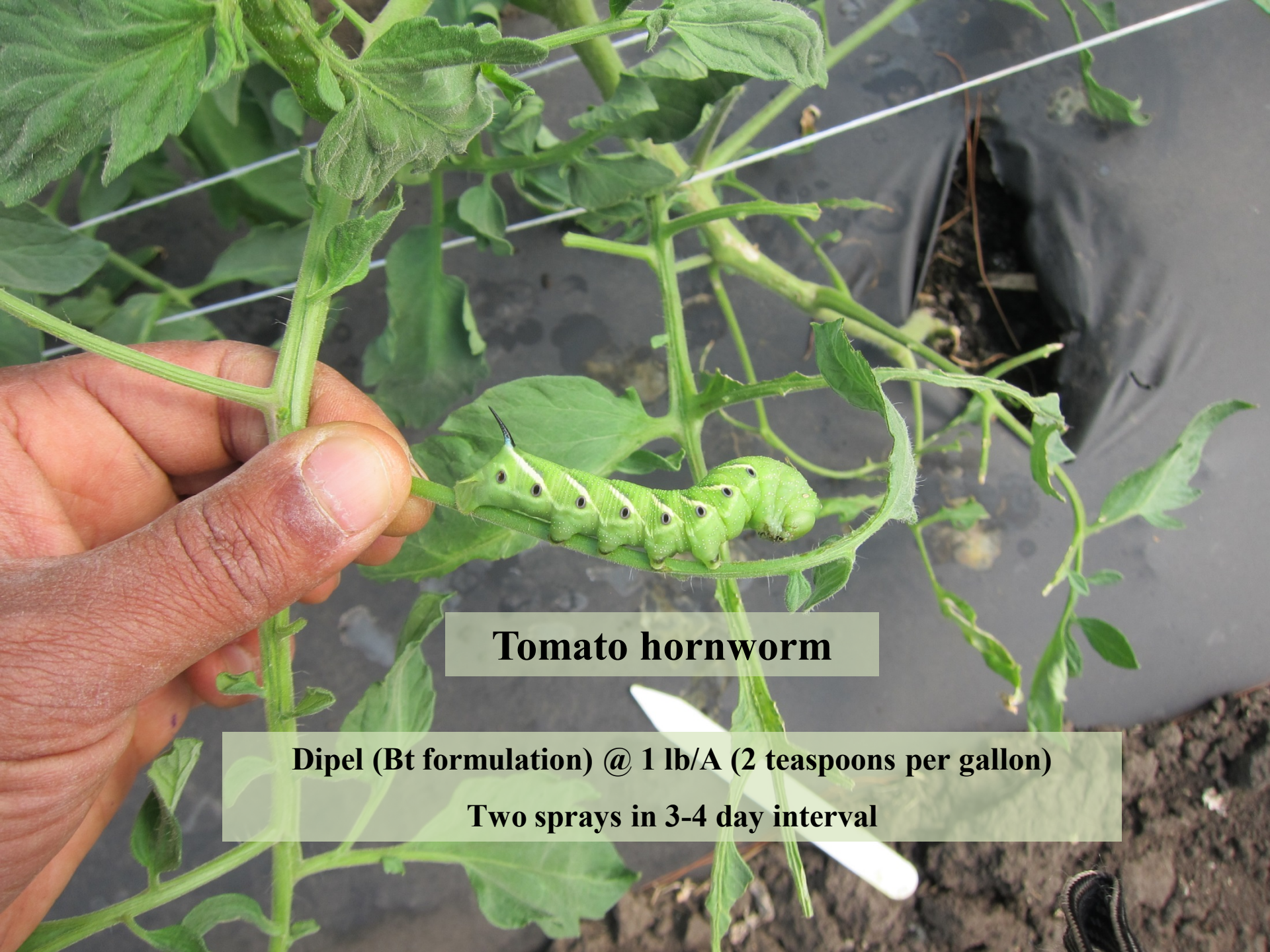

Physiological disorders can look like disease
Browning of head: heat related

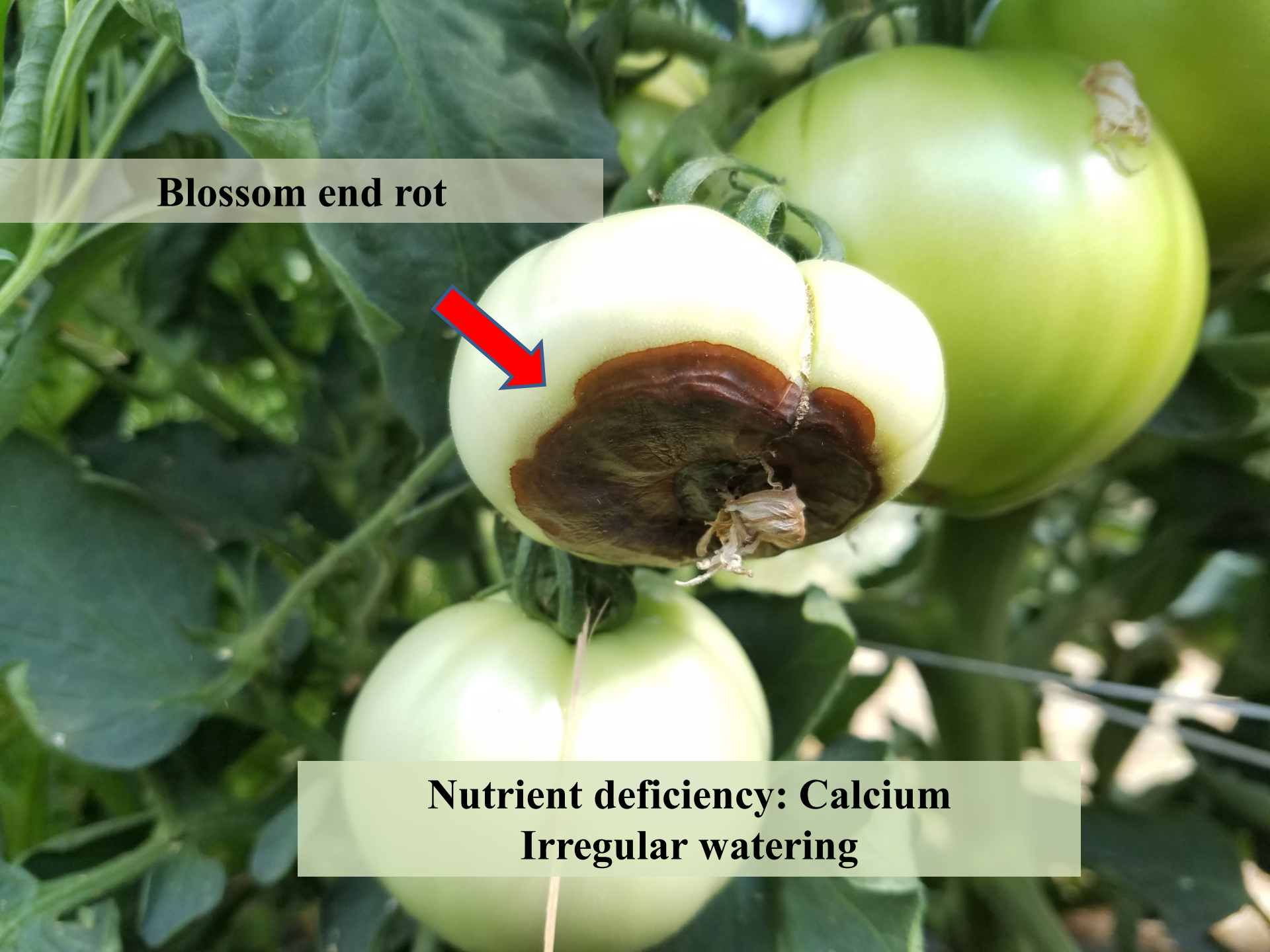
# Tomato transplants in the high tunnel: Sudden death

Heat stress on tomato inside high tunnels: sides fail to open; 140°F; kill


Sunburn in pepper

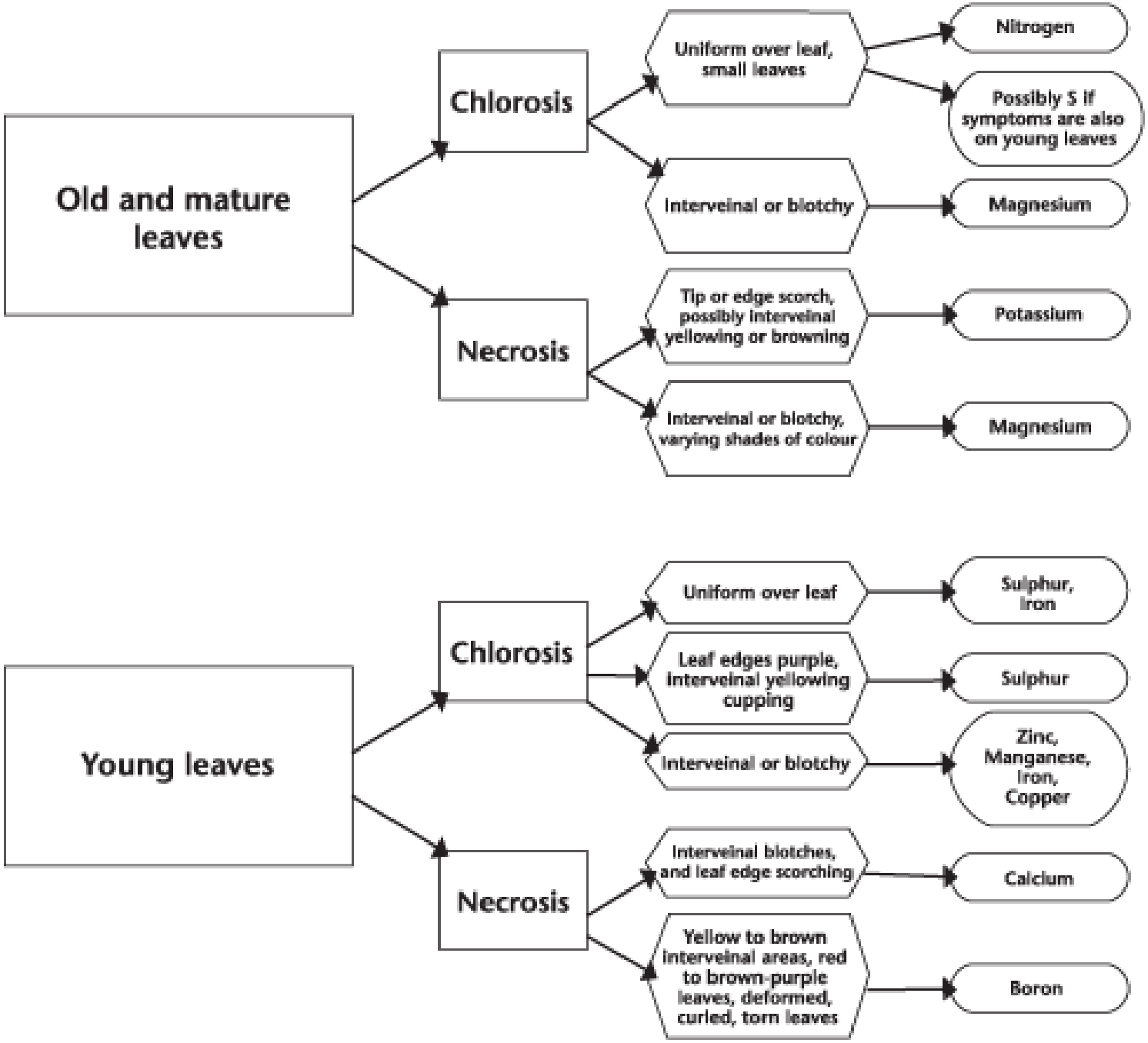

Anything noticeable in this picture?


Tomato hornworm
Dipel (Bt formulation) @ 1 lb/A (2 teaspoons per gallon)
Two sprays in 3-4 day interval


Blossom end rot
Nutrient deficiency: Calcium
Irregular watering

# Progression of blossom end rot

**Nutrient deficiency: Calcium**
**Irregular watering**


Old and mature leaves
Chlorosis
Uniform over leaf, small leaves
Nitrogen
Possibly S if symptoms are also on young leaves
Interveinal or blotchy
Magnesium
Necrosis
Tip or edge scorch, possibly interveinal yellowing or browning
Potassium
Interveinal or blotchy, varying shades of colour
Magnesium
Young leaves
Chlorosis
Uniform over leaf
Sulphur, Iron
Leaf edges purple, interveinal yellowing cupping
Sulphur
Interveinal or blotchy
Zinc, Manganese, Iron, Copper
Necrosis
Interveinal blotches, and leaf edge scorching
Calcium
Yellow to brown interveinal areas, red to brown-purple leaves, deformed, curled, torn leaves
Boron

# Take home message

- Proper identification is the key
- Do some investigative work
- Weather data: mesonet.agron.iastate.edu
- Pictures of individual plants and the entire field
- Communication with neighbors and IDALS

# Contact

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Here we go !