Weed Management Trials in Specialty Crops

High –Value Crops Project
Harlene Hatterman-Valenti
Collin Auwarter
North Dakota State University

Onion Weed Control Trials

- Conducted field trials to evaluate early-season weed control and crop safety.
  - Early-season weed control difficult.
    - Seeded onion emerge slowly.
    - Few herbicides registered before onion 2-true-leaf-stage.
    - Early weed competition controls onion diameter at harvest.
  - Satellite HydroCap vs. Prowl H2O label restrictions.
  - Nortron weed control inconsistent.
  - Dacthal weed control inconsistent and expensive.

Materials and Methods

- Two onion cultivars:
  - Mondella, Sedona
- Seeded May 1 in double rows on 18 inch centers.
- Planting population 250,000 seeds/A.
- Maintenance: GoalTender 4 oz/A1-lf, Chateau 7.5 oz/A 3-lf.
- Fertilizer, irrigation, pest management as needed & consistent with recommendations.
- Harvested 10/7 and graded 10/28.

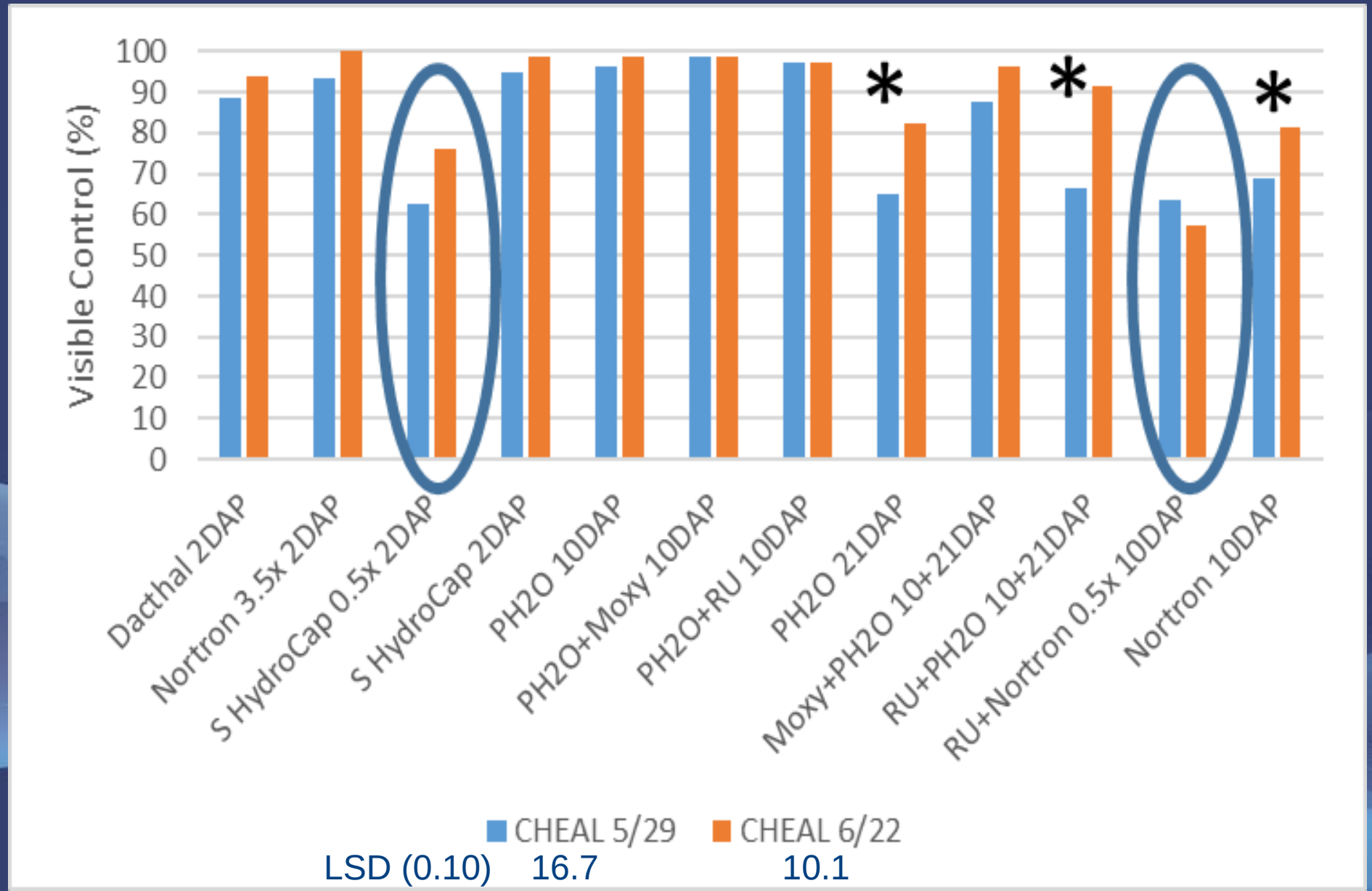
Dacthal 2 DAP on 6/11

Nortron 3.5x 2 DAP on 6/11

S. HydroCap
2 DAP on 6/11

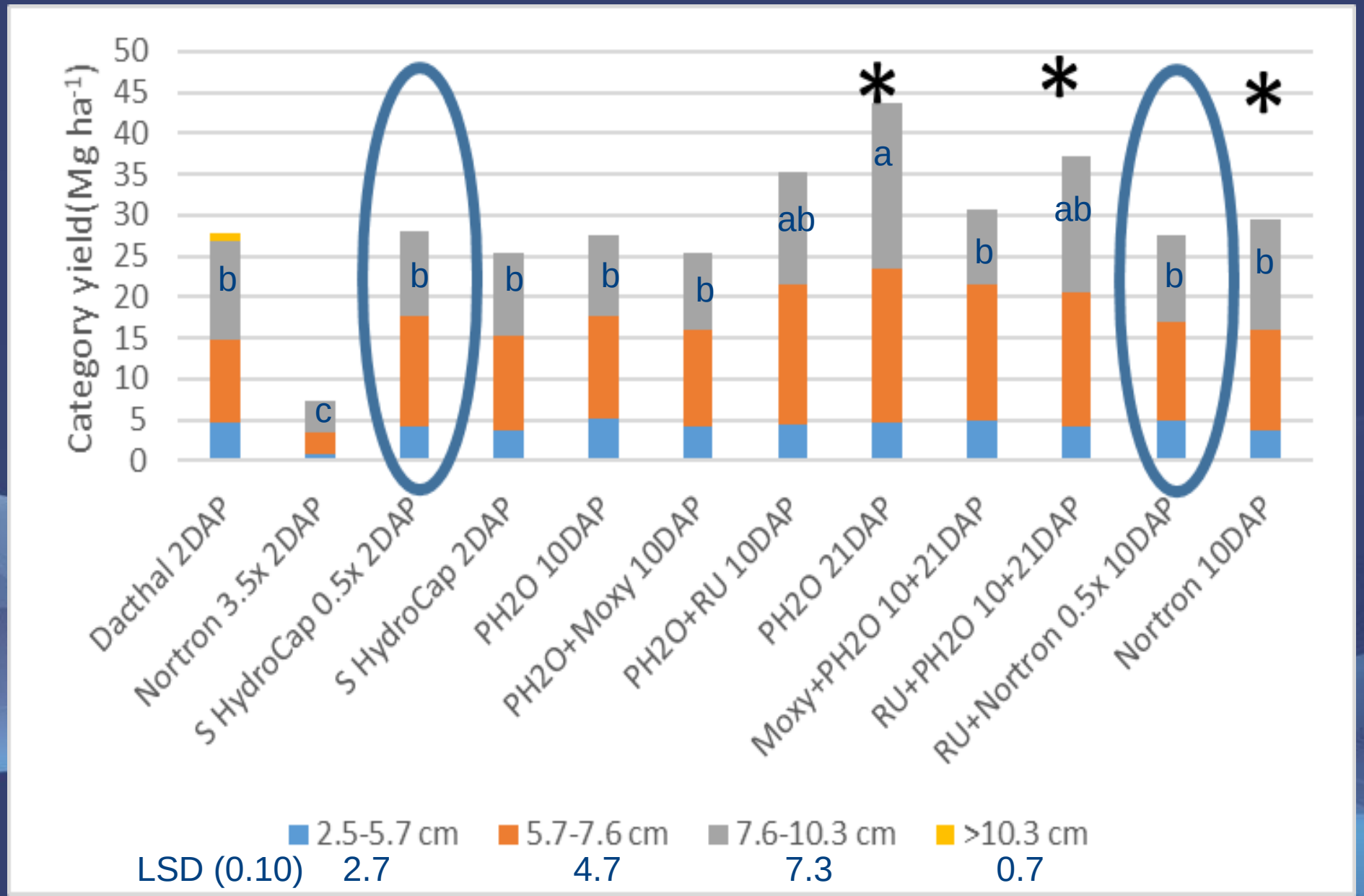
P. H2O 21 DAP on 6/11

Results: Common lambsquarter control



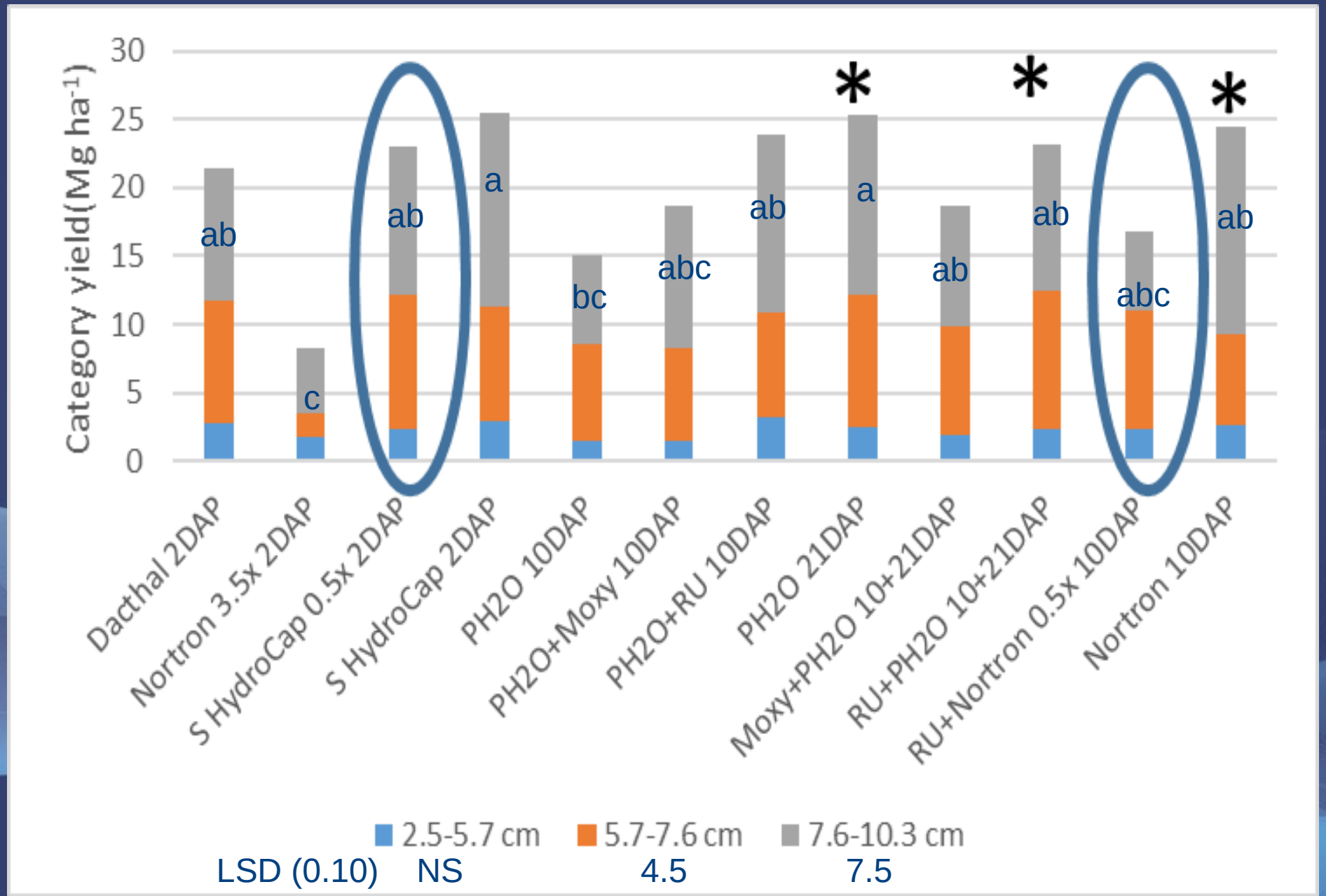
LSD (0.10) 16.7 10.1

Results: Yield (Mondella)



	2.5-5.7 cm	5.7-7.6 cm	7.6-10.3 cm	>10.3 cm
LSD (0.10)	2.7	4.7	7.3	0.7

Results –Yield (Sedona)



Conclusions

Weed Control

- Applying the half-rate of Satellite HydroCap 2 DAP or the half-rate of Nortron + RoundUp 10 DAP provided poor common lambsquarters control on 5/29, which did not improve with the maintenance herbicide applications.

- Applying Prowl H2O 21 DAP alone or after RoundUp 10 DAP also provided poor common lambsquarters control on 5/29, but the maintenance herbicide applications increase this control to acceptable by 6/22.

Conclusions

Onion Yield/Grade

- The greatest total yield for ‘Mondella’ occurred when Prowl H2O was applied alone 21 DAP. However, this total yield did not differ from yields when RoundUp + Prowl H2O or Nortron were applied 10 DAP, or when RoundUp was applied 10 DAP fb Prowl H2O 21 DAP.

- The greatest total yield for ‘Sedona’ occurred when Satellite HydroCap was applied 2 DAP. However, this total yield did not differ from yields with most of the herbicide treatments except Nortron 3.5x 2 DAP and Prowl H2O alone 10 DAP.

Prediction Of Potato Yield Loss Due To Metribuzin Sensitivity Using High Throughput Phenotyping

Hashim M. Andidi, M.S. student with Dr. Thompson

- 32 genotypes screened for response to metribuzin using high throughput phenotyping (HTP) and traditional rating protocols.
- HTP = UAV fixed with Red, Green, Blue sensors & multispectral camera.
- HTP compared to portable plant photosynthesis system utilizing chlorophyll fluorescence to determine plant stress and to visible evaluations.

Herbicide Drift

- Cassandra Brown (The Ohio St. Univ.) received a NCR IPM Center grant to:
  - Complete a series of fact sheets primarily focused on dicamba and 2,4-D drift.
  - Spearhead a NCR specialty crop herbicide drift survey.

Investigating off-target injury


VALIANT


FRONTENAC

Questions