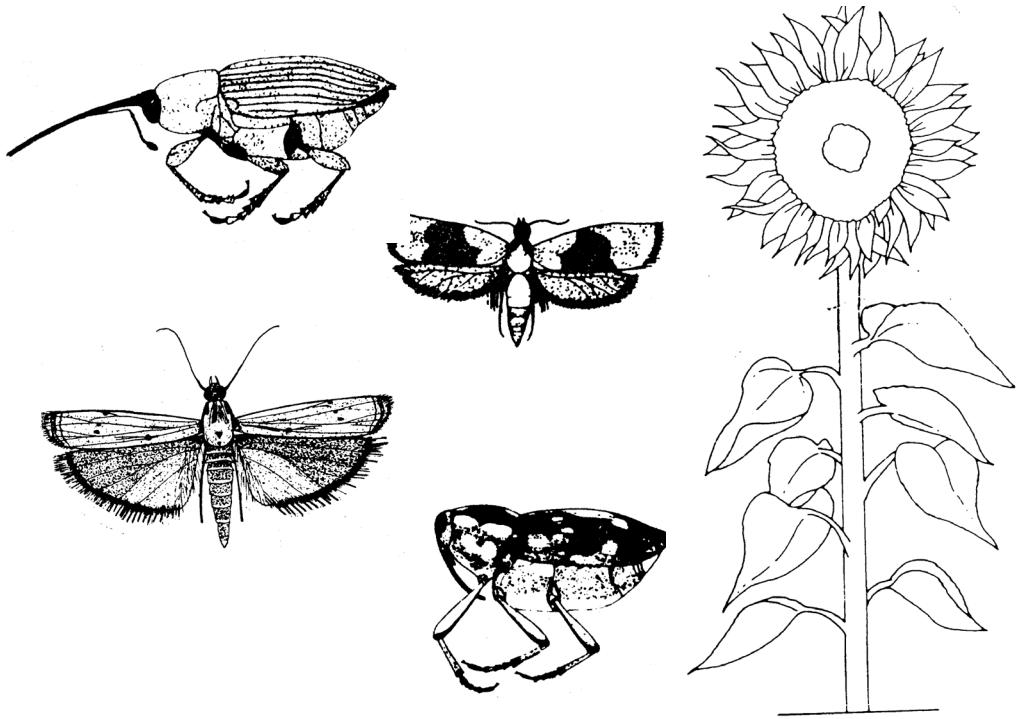
2023 National Sunflower Production Survey – Insects (*and Birds*)



Jarrad Prasifka, USDA-ARS, Fargo, ND

NSA Survey Insect Evaluations

1 . In-field assessments

- Observations of symptoms or insects (Dectes)
- Scored as incidence (% of plants)

2. Seed samples

- Shipped to USDA-ARS in Fargo
- X-ray imaging of seeds (weevil, caterpillar)
- Dehulling and inspection (*Lygus* bugs)

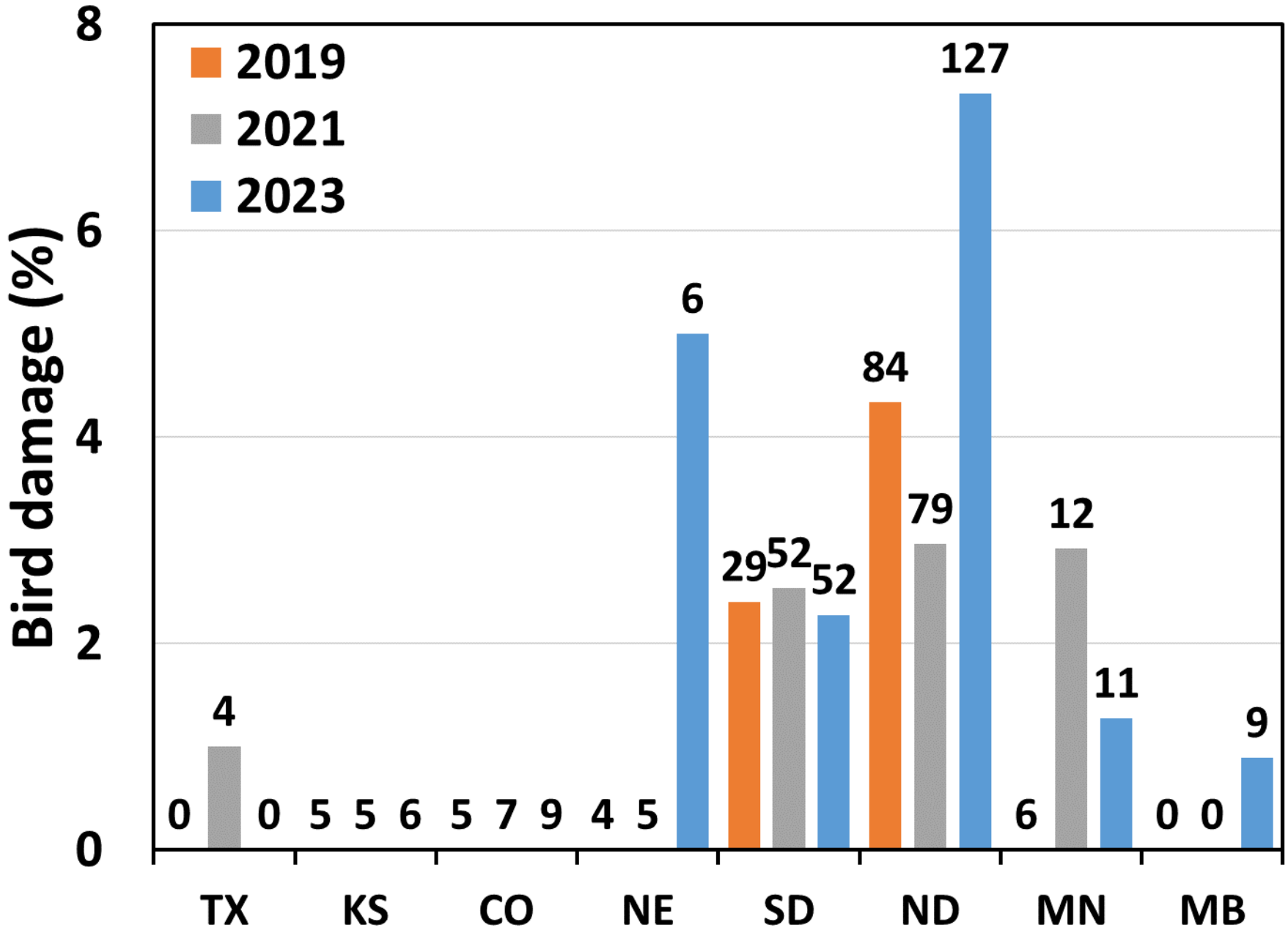
In-Field Assessments

- Sunflower midge, bud moth, seed maggot
- Deform heads, easy to confuse w/ other causes
- Dectes stem borer (larva in stem)

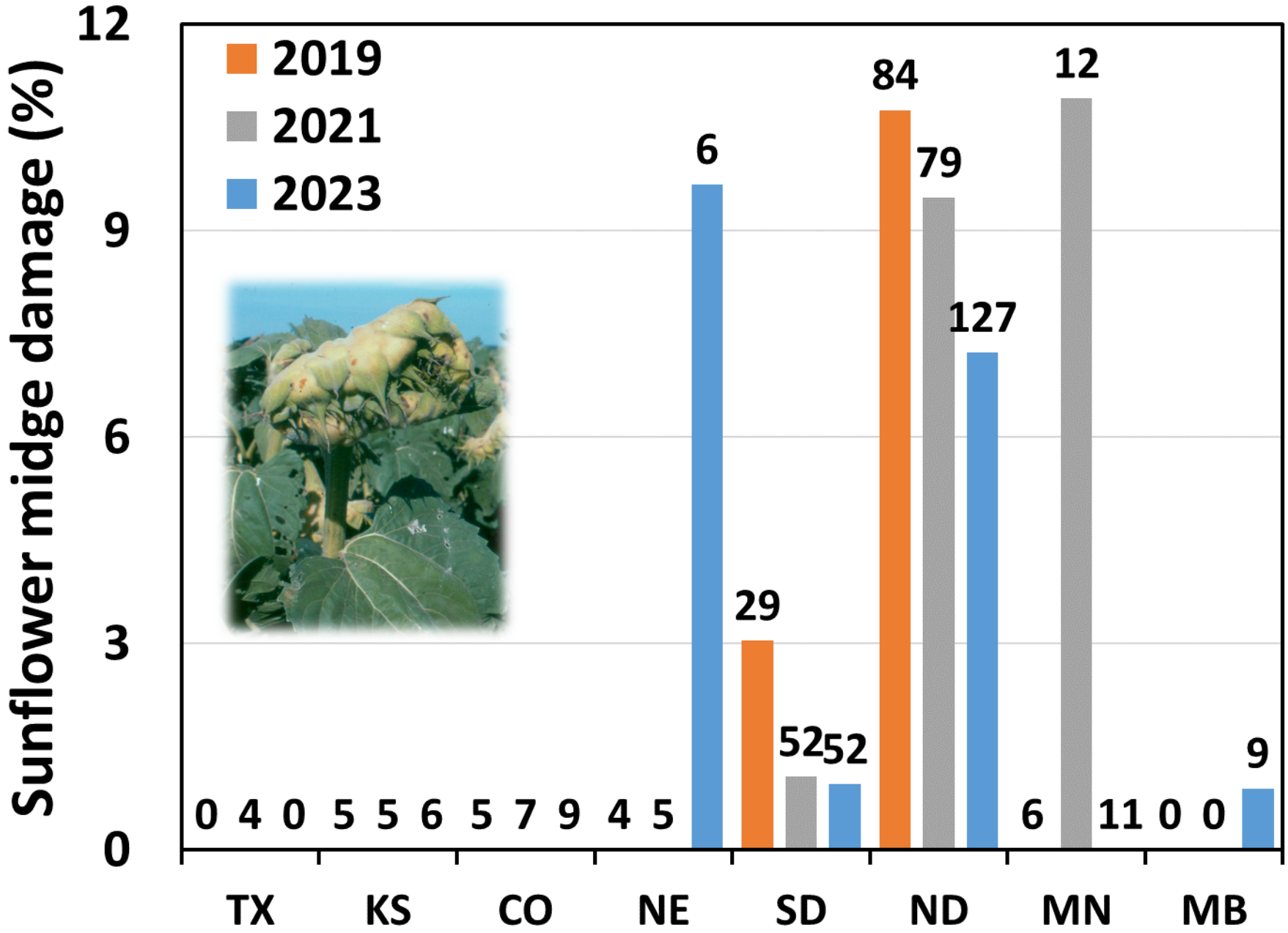
- Insects, incidence ≈ severity

- Bird losses (%) estimated directly

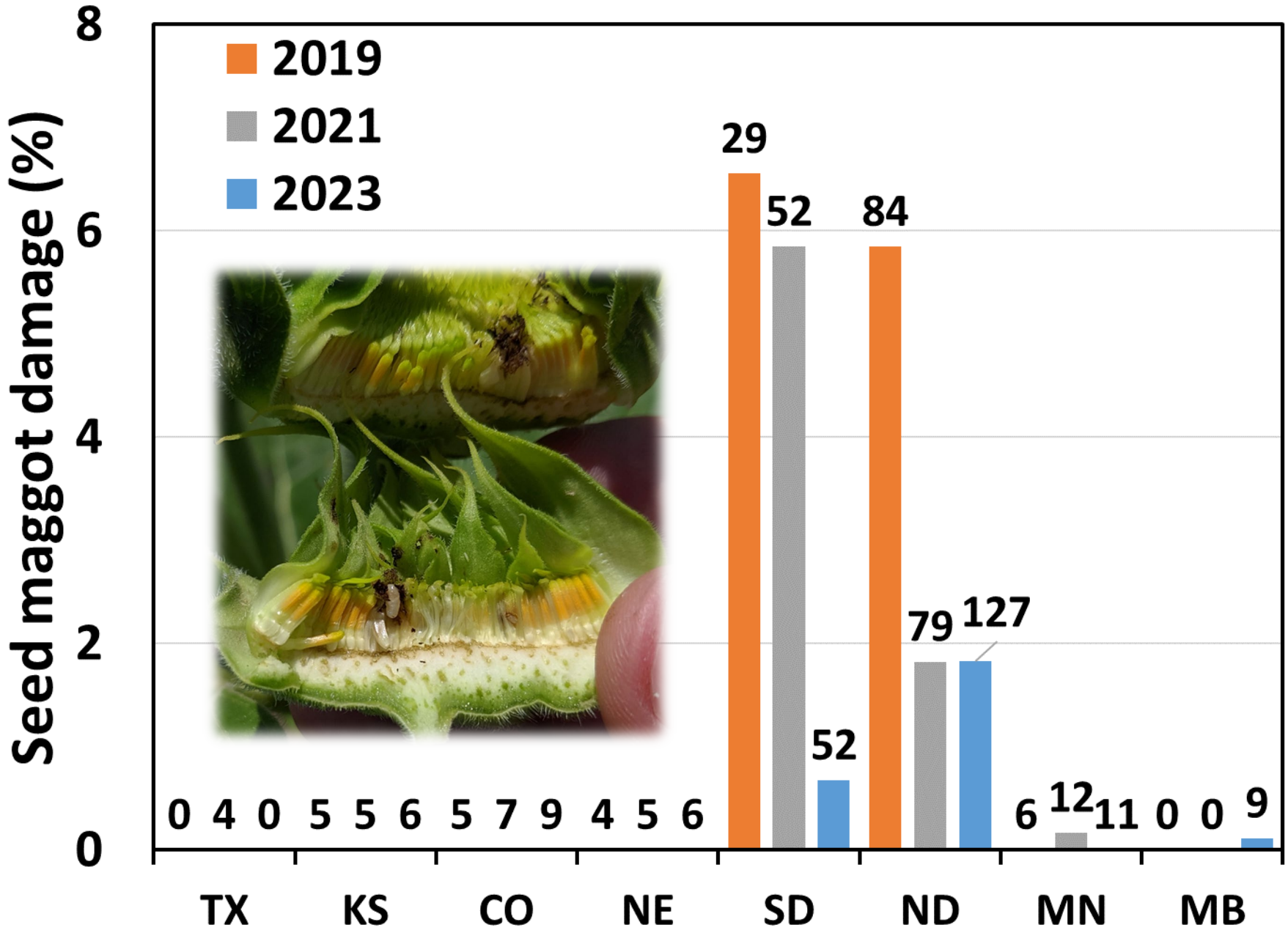
In-Field Assessments - Birds



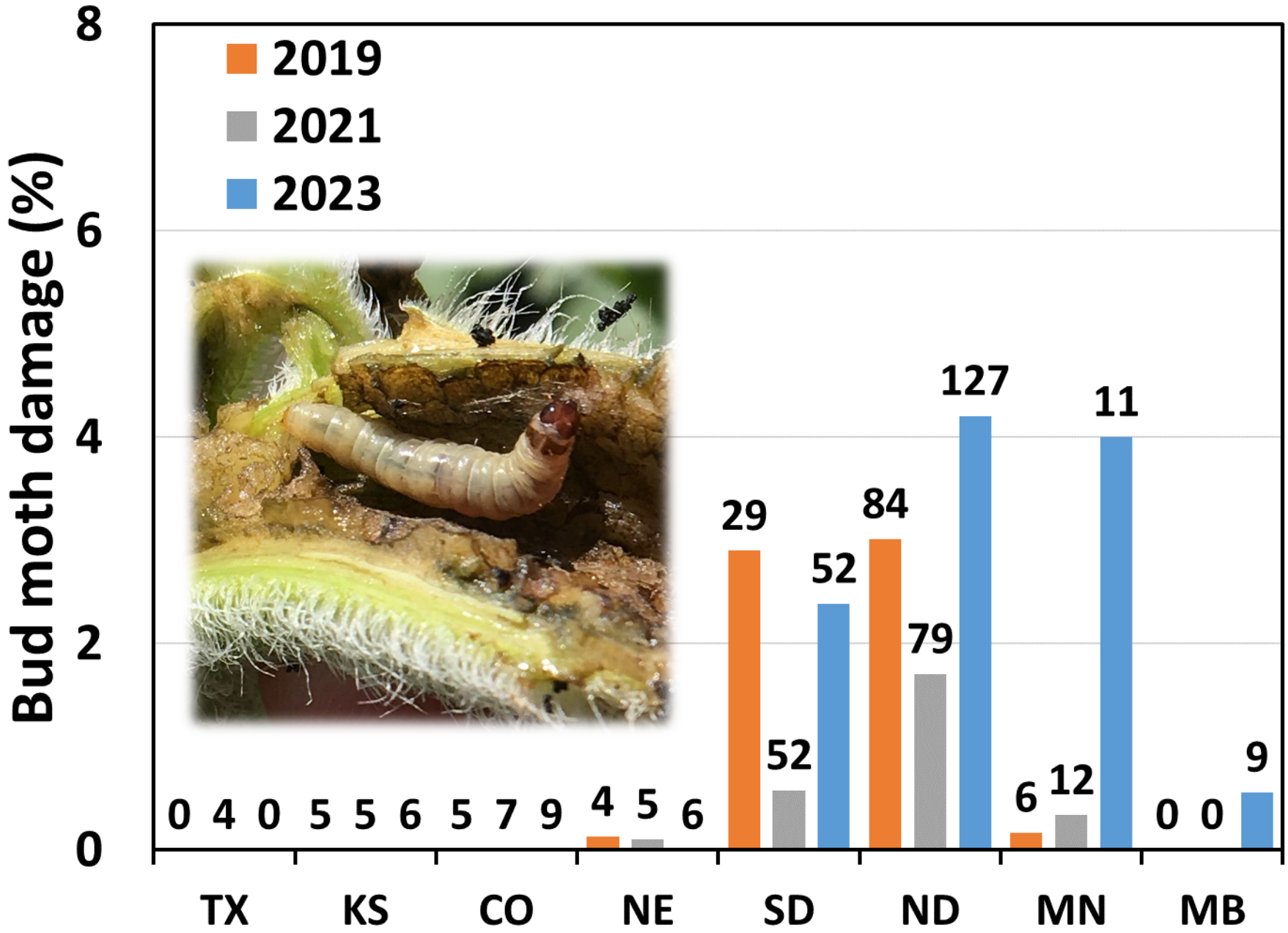
In-Field Assessments - Midge



In-Field Assessments - Seed Maggot



In-Field Assessments - Bud Moth



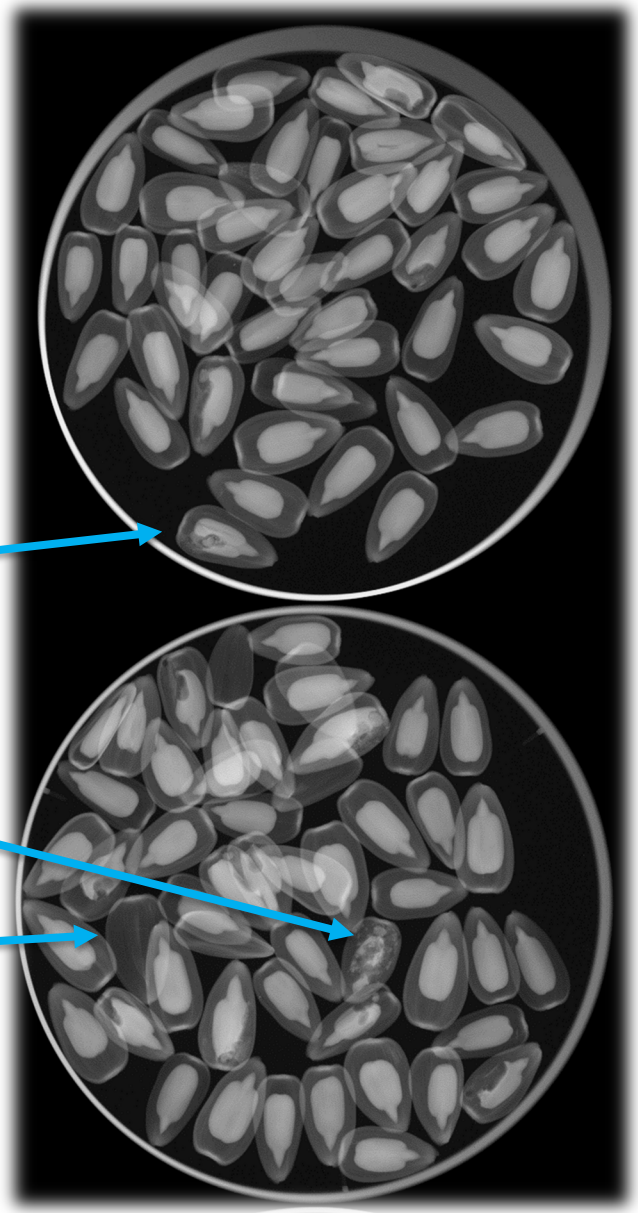
In-Field Assessments - Dectes

In-Field Assessments – Summary

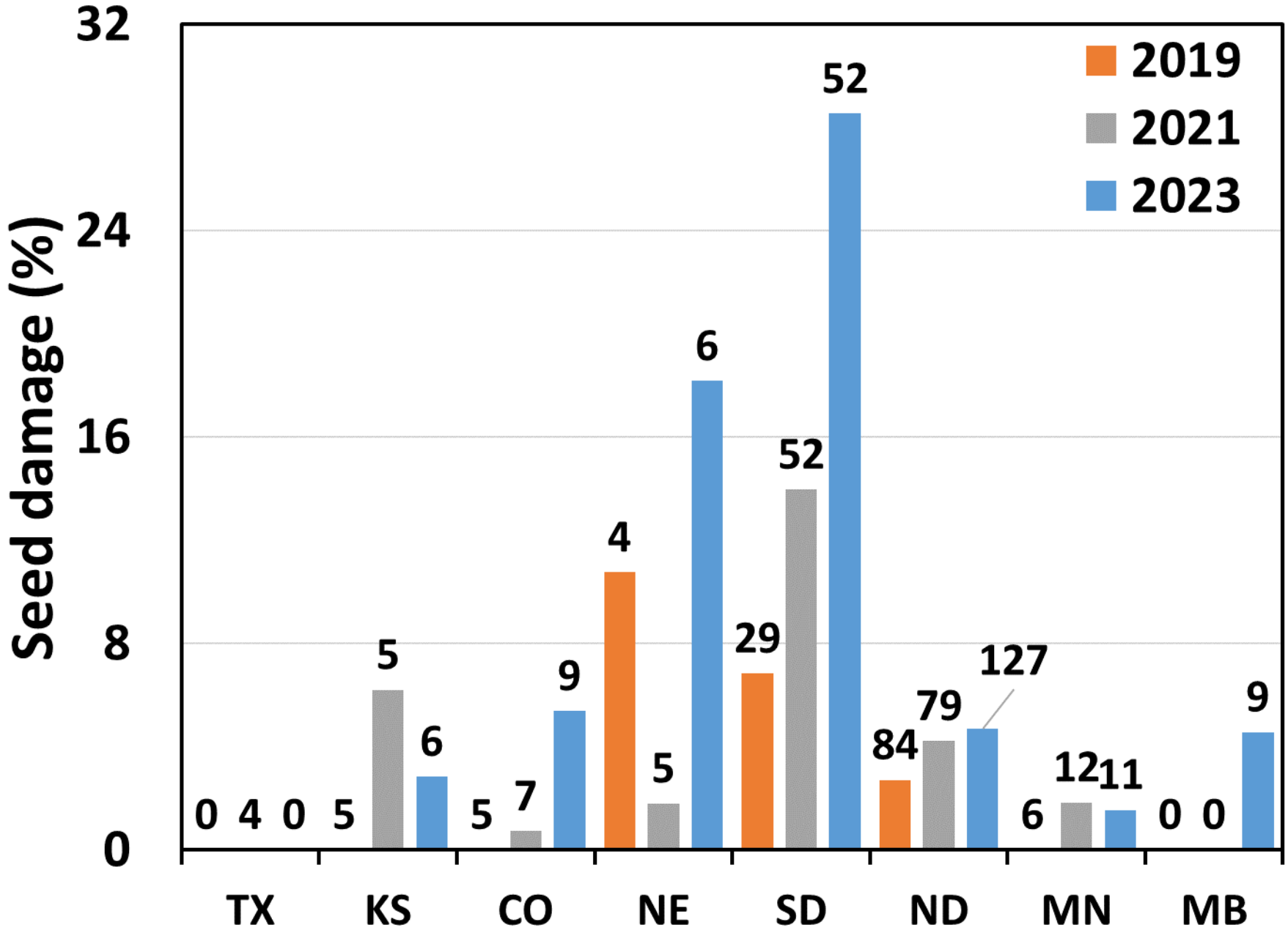
- **Secondary pests (midge, bud moth, maggot) similar to ‘19, ’21**
- **<u>Those + birds mostly absent south of Dakotas</u>**
- **Birds [ND] 89 of 127 < 5% damage, but some very high - Divide County (57% over 4 fields)**
- **Dectes [SD] 28 of 52 fields > 50% apparent infestation (*)**

Seed Samples – X-rays

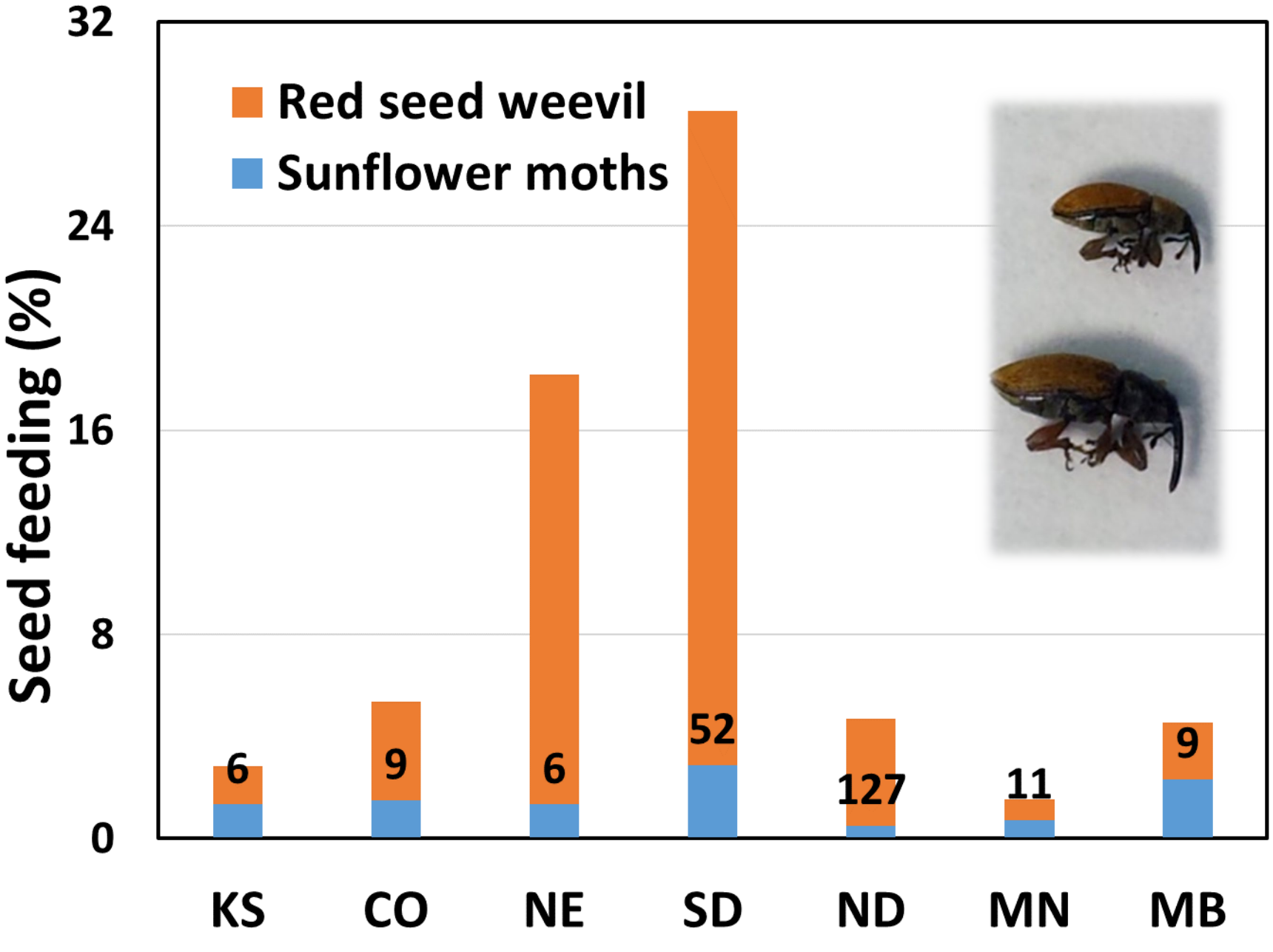
- Red sunflower seed weevil
- Banded sunflower moth
- Sunflower moth
- <u>Percent damaged seed</u>
- Weevil VS caterpillar (?)
- Unfilled seed



Seed Samples – 2019, 2021, 2023 X-rays



Seed Samples – 2023 By Insect Type



Seed Samples – Lygus & Summary

- **Lygus (brown spot) damage low (0.24%)**
  ≤ 1% for 24 of 25 confection fields
- **Unfilled seed ≈ 3.5%, but 19 / 216 fields at >10%**
- **<u>Total seed damage up (3.7--->7.2--->10.5%)</u>**
- **More high-damage (> 20%) fields**
  <1% of fields (2019), >12% (2021), > 15% (2023)
  <u>Seed weevils endangering crop, especially in SD</u>

Acknowledgements and Questions

- National Sunflower Association
- Leo Bortolon (NDSU)
- Zach Tarble (USDA)

- Questions?