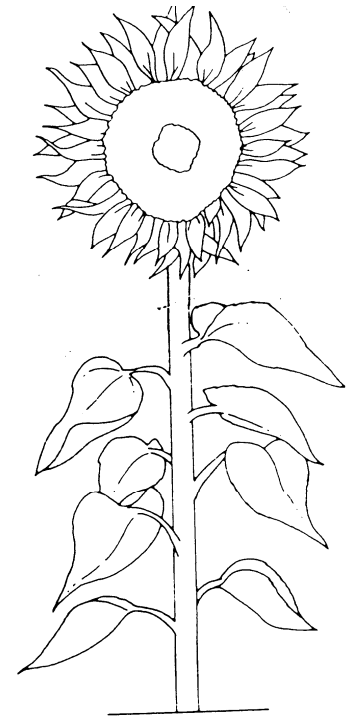
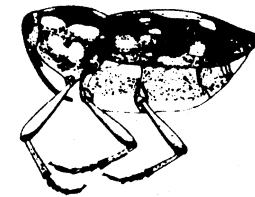
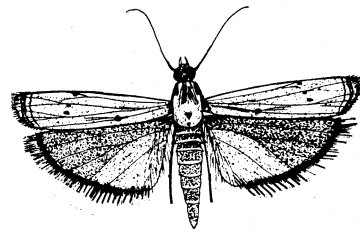
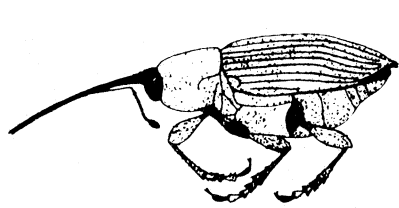


2019 National Sunflower Production Survey – Insects (and Birds)



Jarrad Prasifka

USDA-ARS Sunflower and Plant Biology Unit, 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)

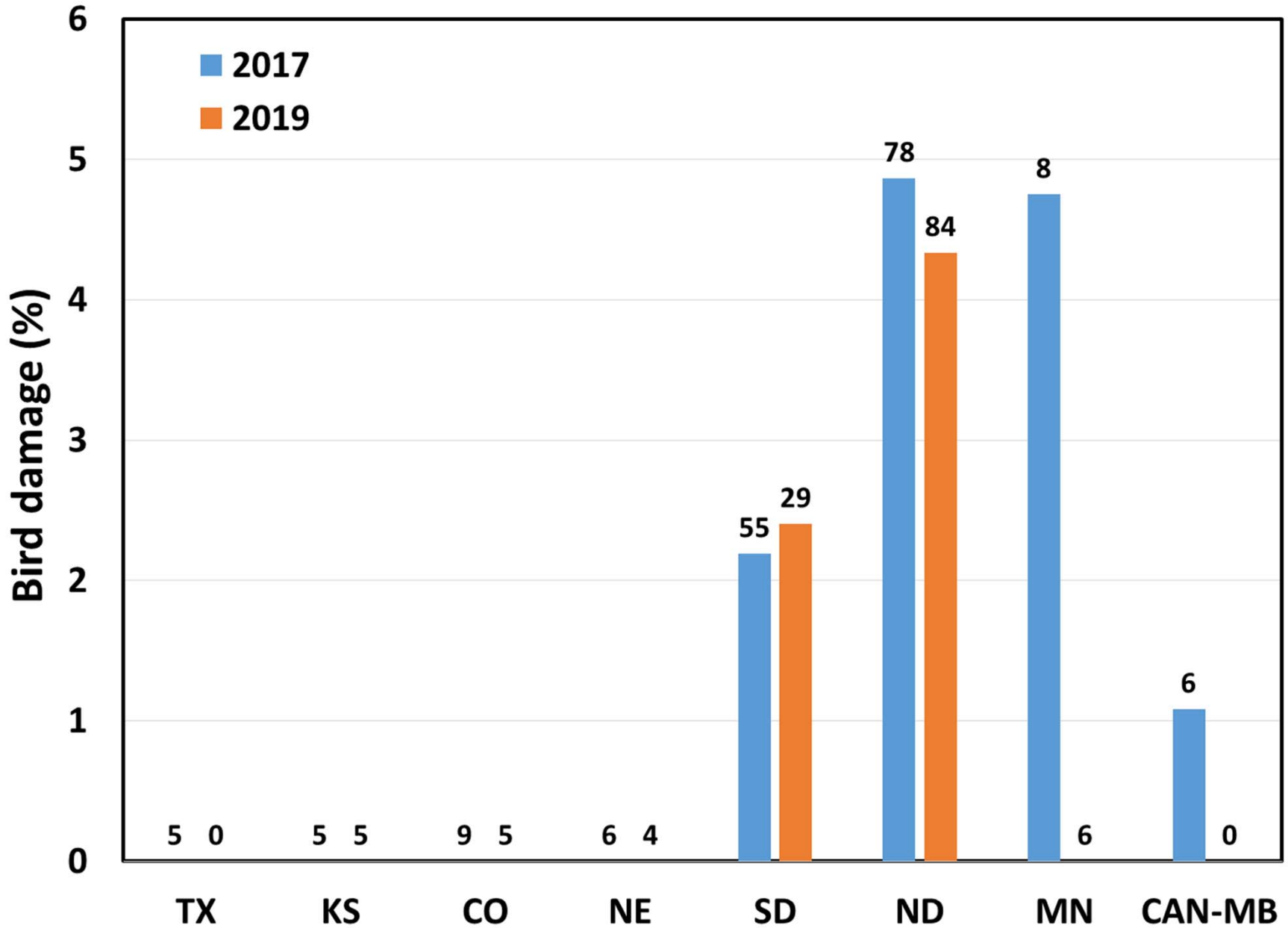
In-Field Assessments

- **Sunflower midge, bud moth, seed maggot**
- **Deform heads, confused w/ other causes**
- **Dectes stem borer (larvae in stem)**

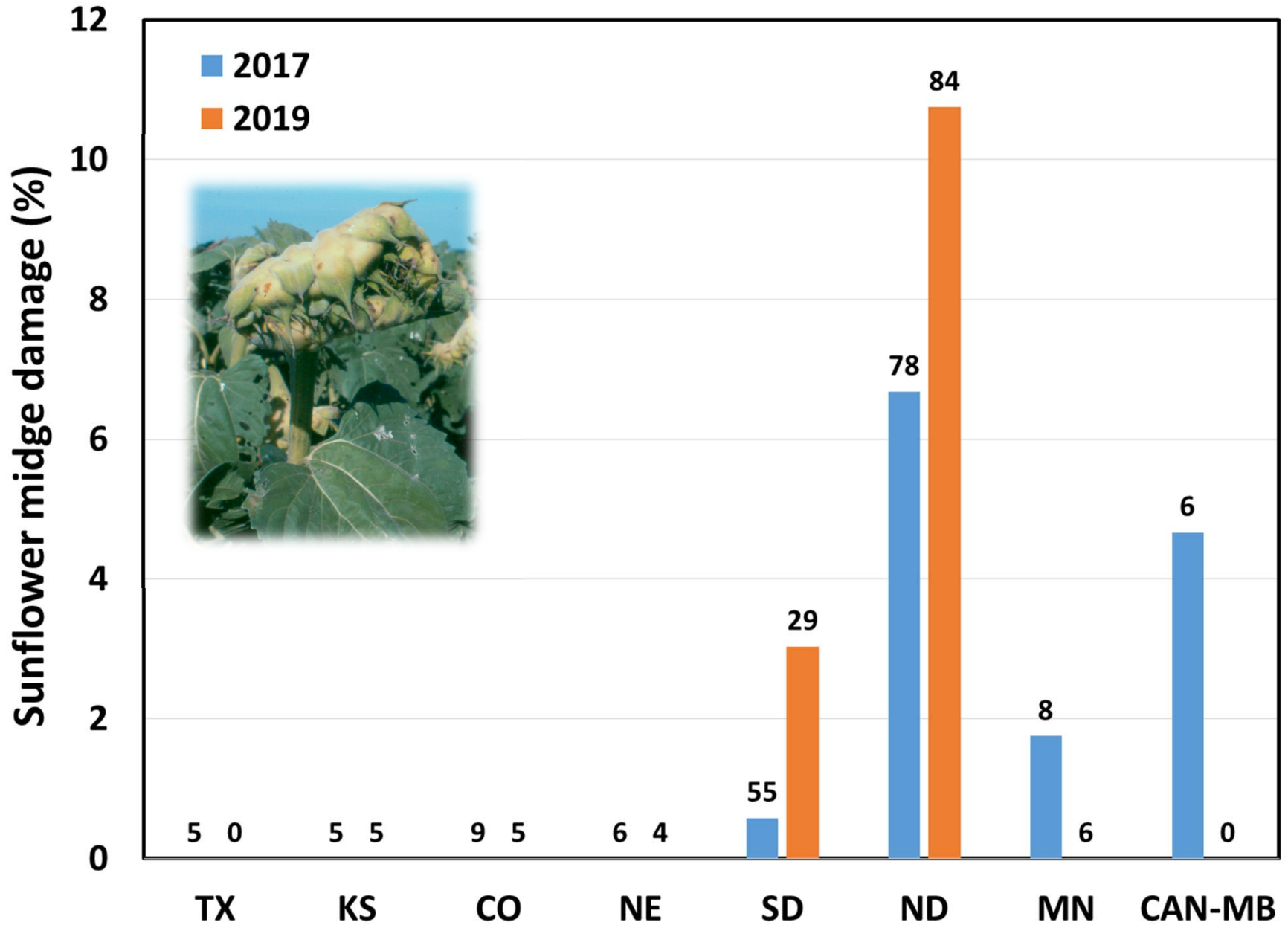
- **For insects, incidence proxy for severity**

- **Yield losses from birds (%) estimated directly**

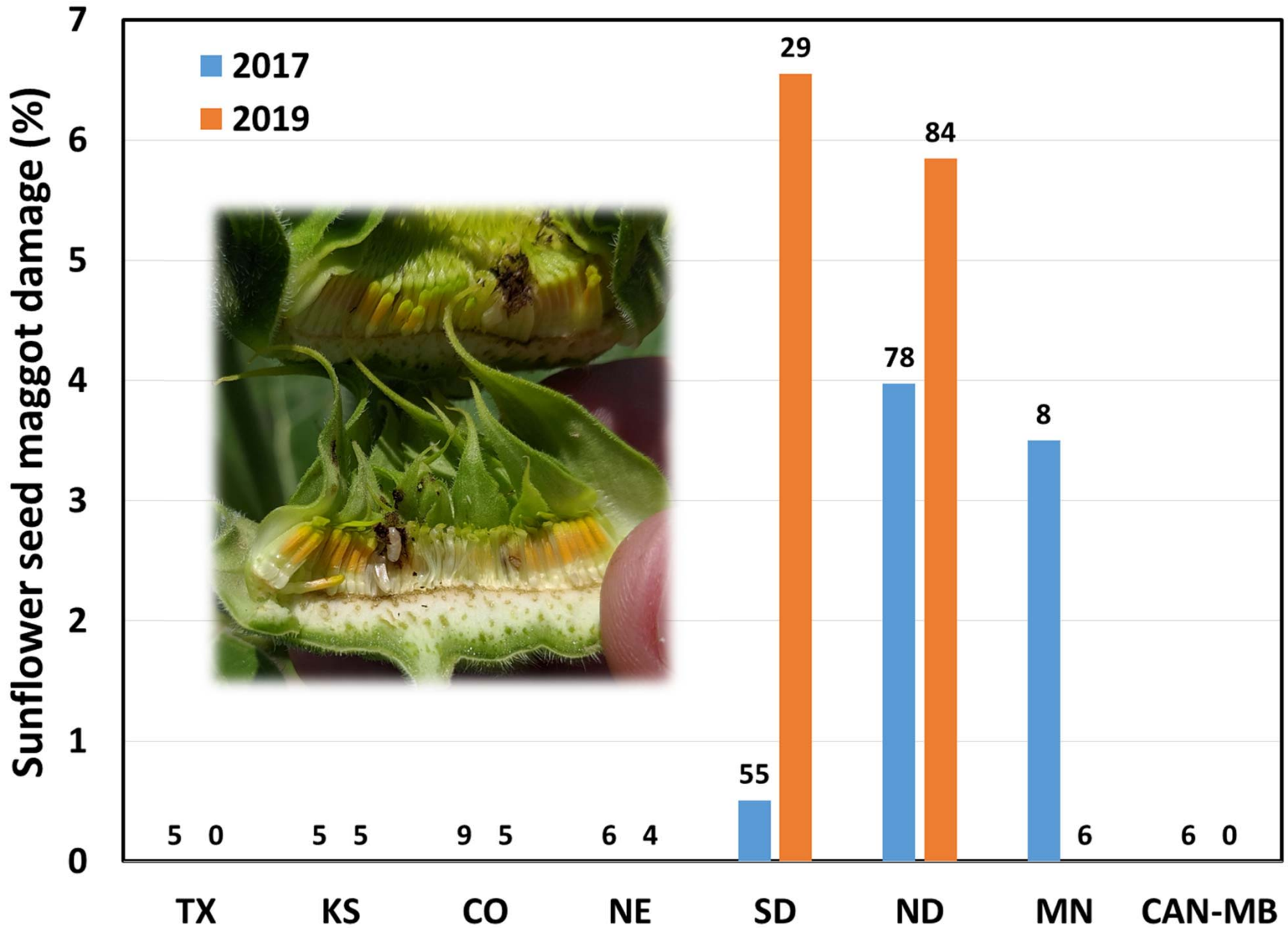
In-Field Assessments - Birds



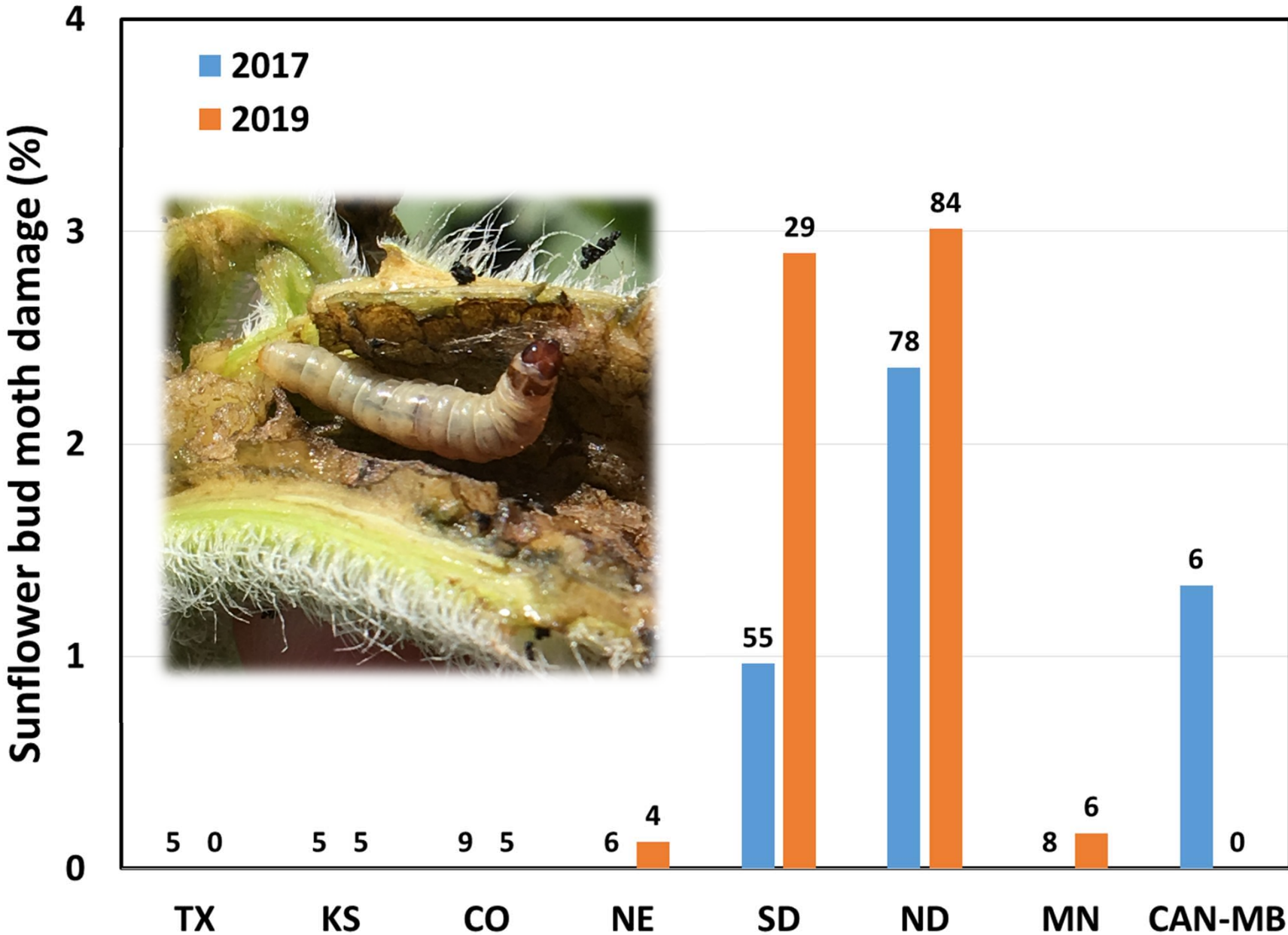
In-Field Assessments - Midge



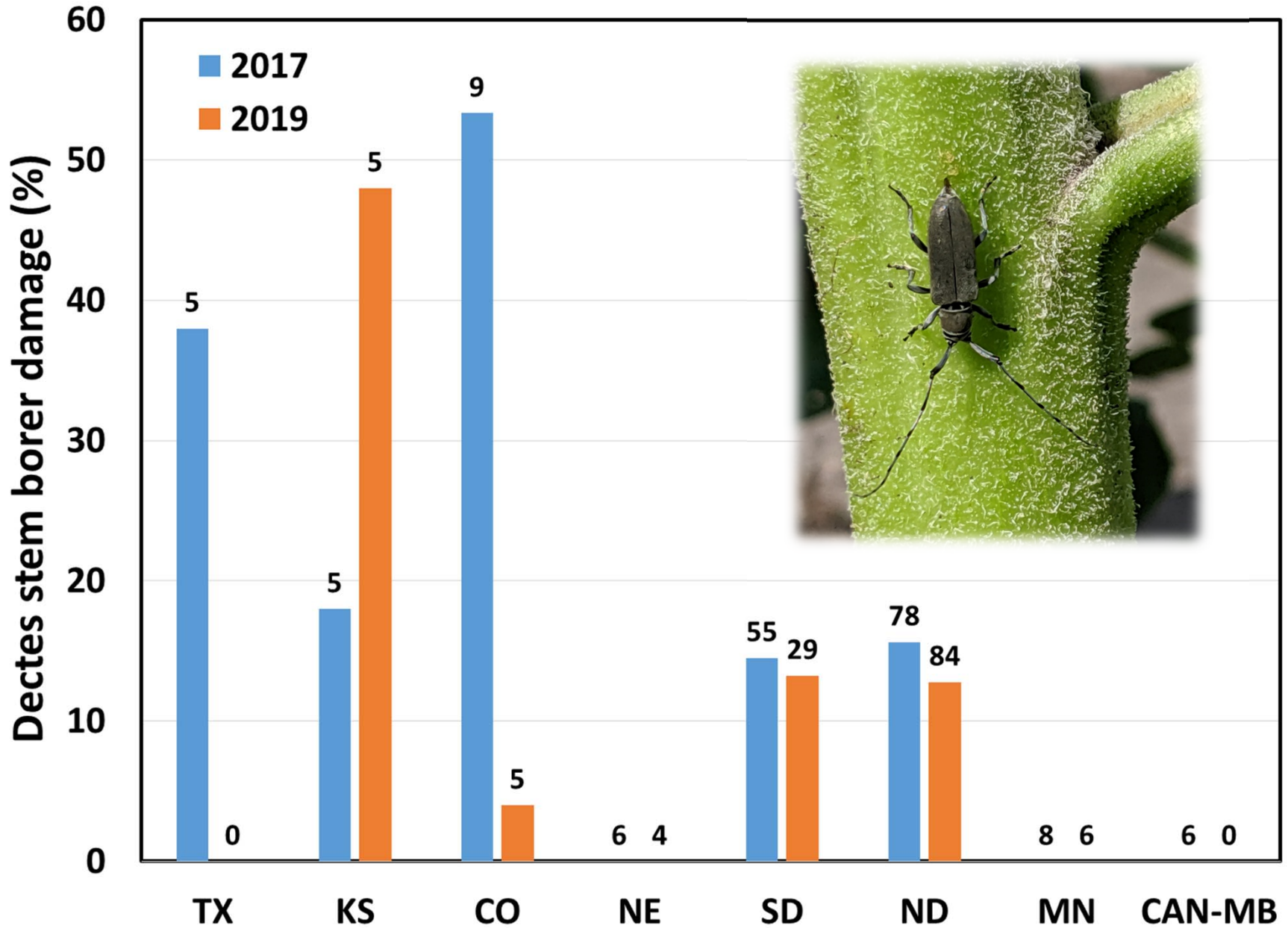
In-Field Assessments – Seed Maggot



In-Field Assessments – Bud Moth

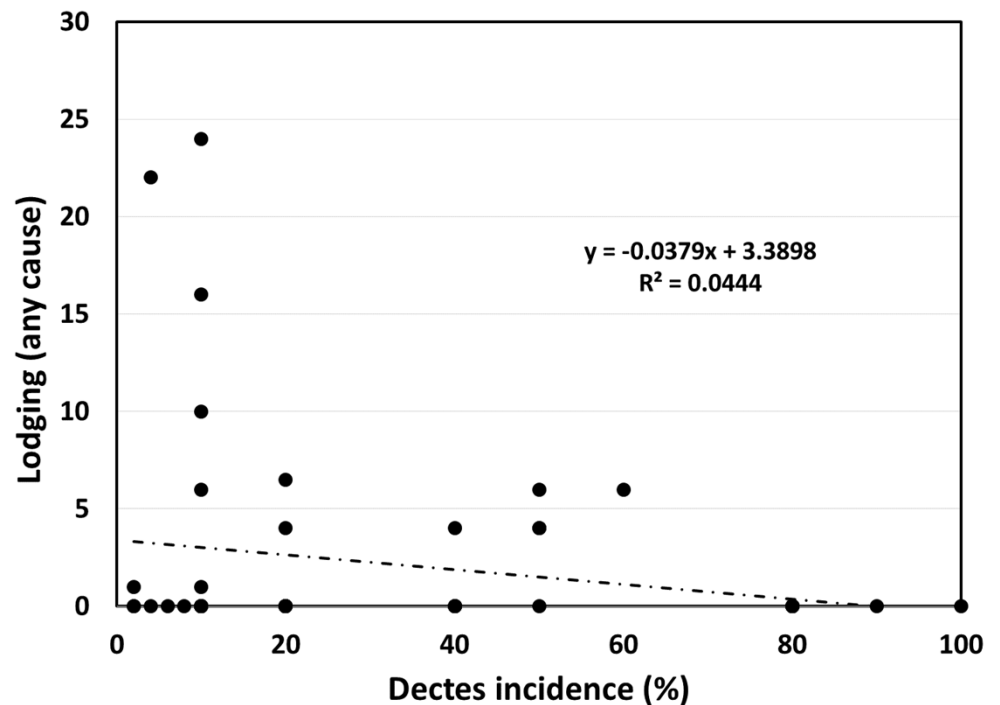


In-Field Assessments – Dectes



In-Field Assessments - Summary

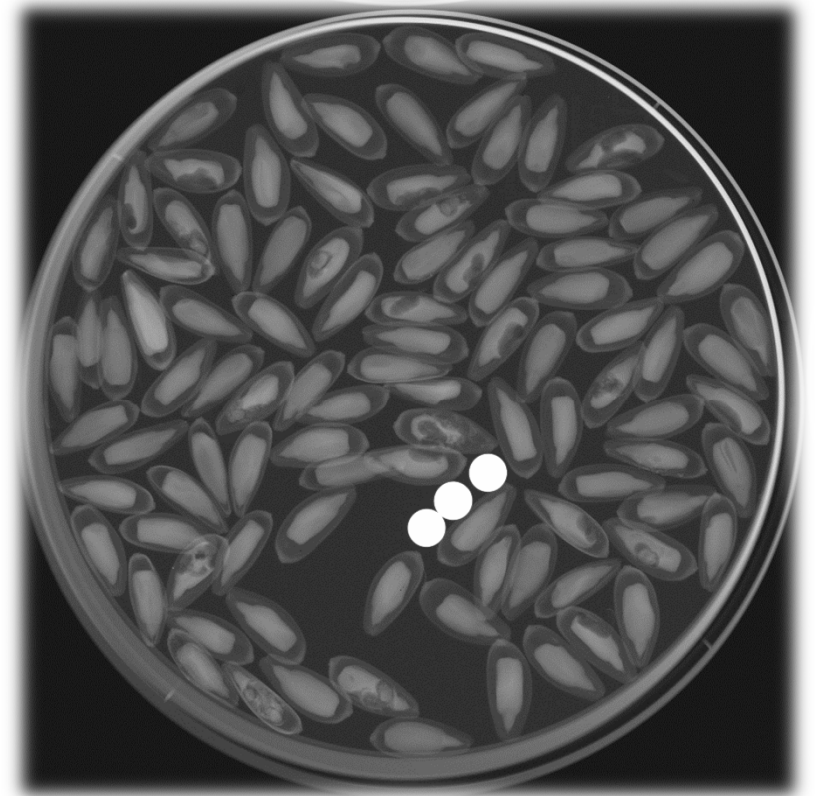
- Secondary pests (midge, bud moth, maggot) appear more common in 2019
- Those + bird damage absent south of Dakotas
- Dectes common in KS, present SD, ND
- Effects of Dectes unclear (n=53)
- Sampling issue?



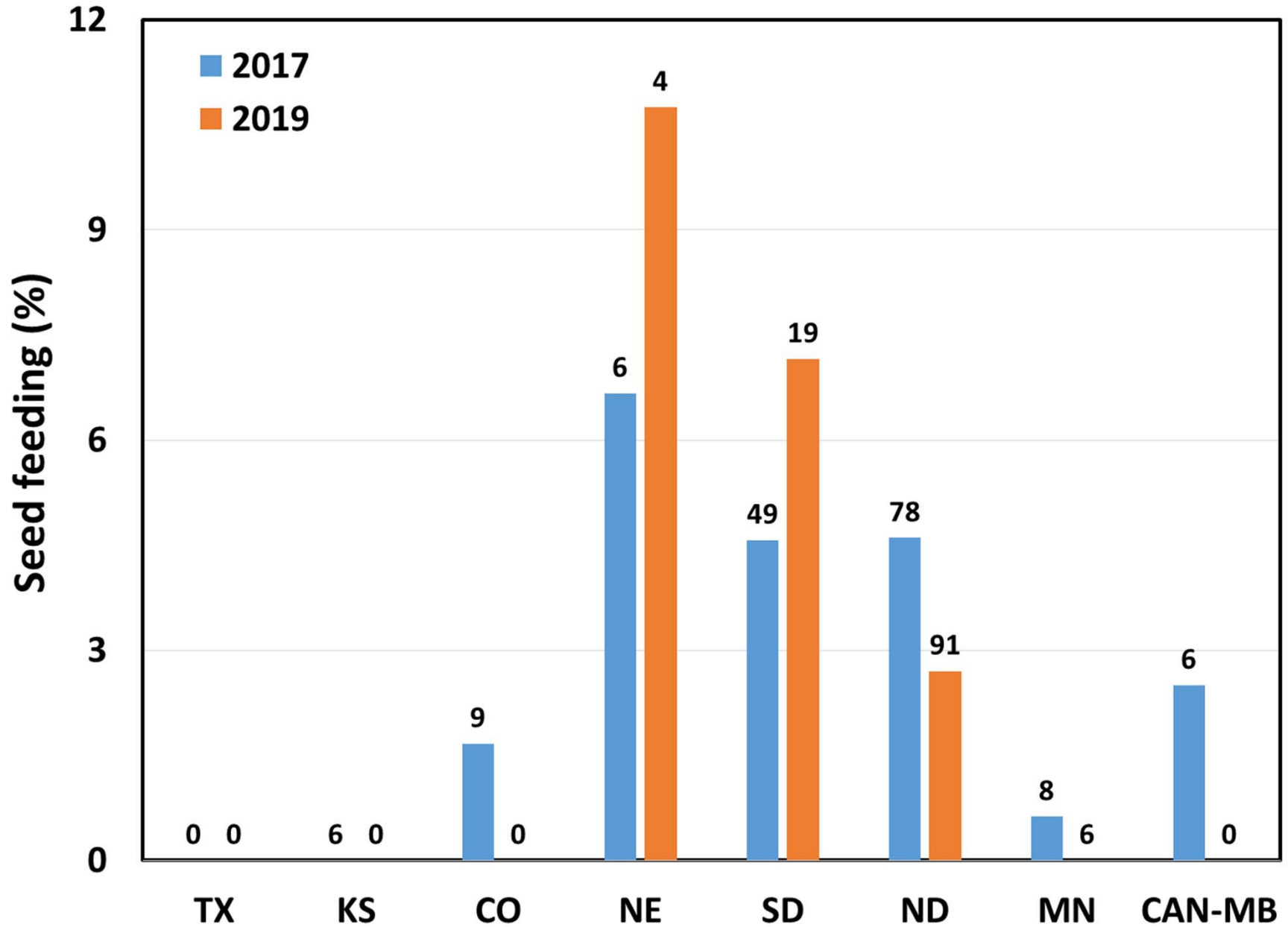
Seed Samples

- Red sunflower seed weevil
- Banded sunflower moth
- Sunflower moth
- Percent damaged seed

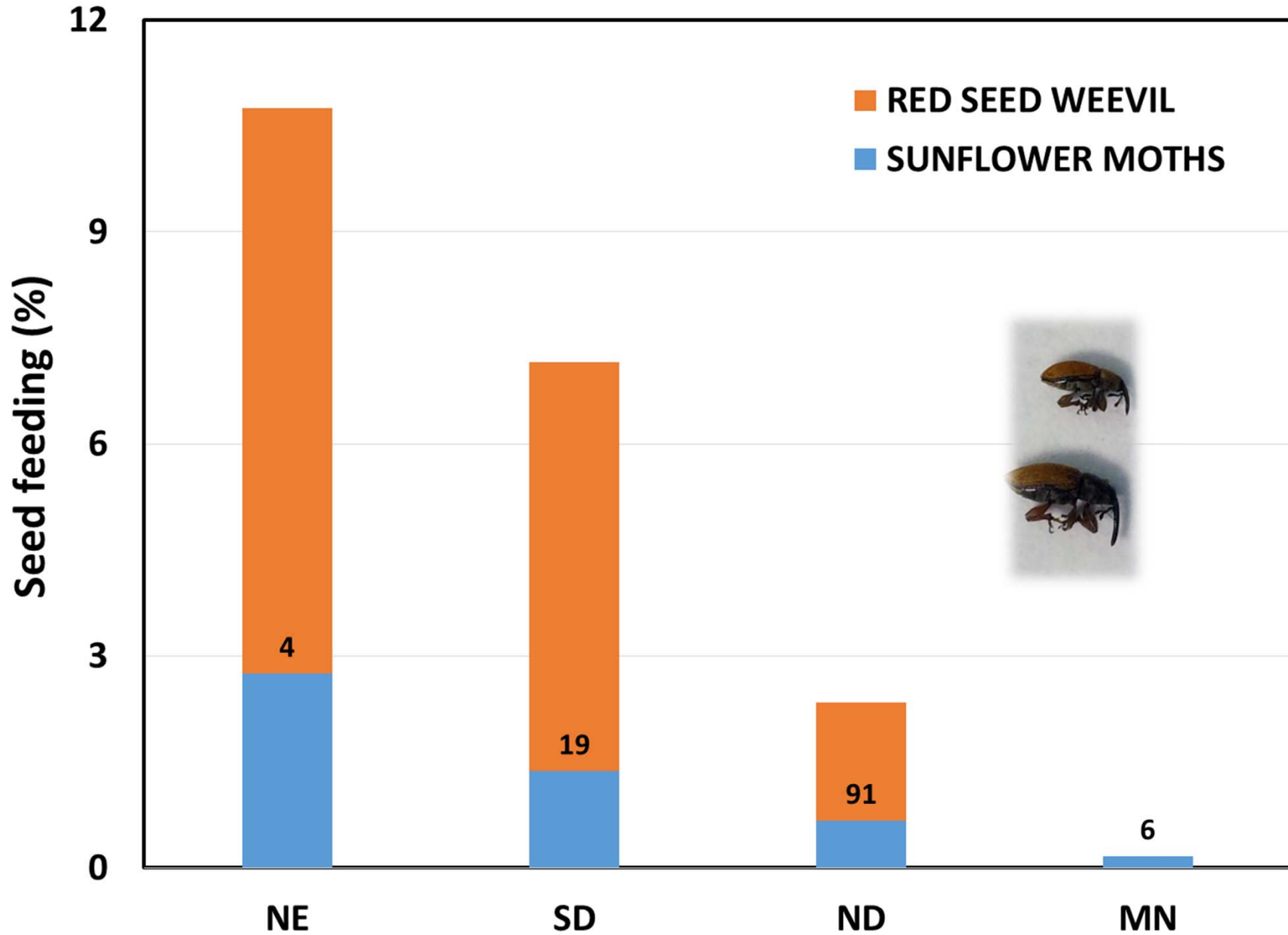
- X-rays separate weevils from caterpillars



Seed Samples – 2017, 2019 X-rays



Seed Samples – 2019 By Insect Type



Seed Samples – Lygus & Summary

- **Lygus (brown spot) damage low**
 $\leq 1\%$ for 14 of 15 confection fields



- **Seed damage down (4.1 to 3.6%), but still about twice 2015 levels**
- **Fewer heavily damaged ($> 20\%$) fields**
2017 – 8 of 162 fields (24–59%)
2019 – 1 of 120 fields (36%)

Acknowledgements and Questions

- National Sunflower Association
- USDA-ARS
- Lisa Brown
- Shawna Pantzke
- Beth Ferguson

