

# OREI cucurbit project: 2020 field trial results



**Mark Gleason, Project Director**

# Iowa field trials

- \* 2 crops: Muskmelon and acorn squash
- \* 2 trials: Pollination and weed control



# Iowa pollination trials –

Full-season (bees added)

On-off-on

Open ends



Landscape fabric  
between rows.



# Marketable yield



**Full-season\***  
On-off-on -  
Open ends



Full-season -  
**On-off-on\***  
Open ends

# Iowa weed management trials

- Teff @ 4 lb/A
- Teff @ 8 lb/A
- Landscape fabric
- Bare ground



# Marketable yield



Teff @ 4 lb/A

Teff @ 8 lb/A

**Landscape fabric \***

Bare ground



Teff @ 4 lb/A

Teff @ 8 lb/A

**Landscape fabric \***

Bare ground -

# KENTUCKY TRIALS

- **Pollination**
- **Weed control**
- **Foliar disease control**



# Kentucky pollination trials

## Marketable yield



**Acorn squash**

**120-ft-long plots**

- Full-season
- On-off-on
- **Open-ends \***
- On-off

**Muskmelon**

**30-ft-long plots**

- Full-season \***
- On-off-on
- Open-ends \***
- On-off

# Kentucky weed control trial (Acorn squash, on-off-on)

- Buckwheat (90 lb/A)
- Teff (12 lb/A)
- Teff (24 lb/A)
- Teff (36 lb/A)



- Yield: No differences
- Weed control: Best with buckwheat and 2 higher teff rates



Photo: Kerry Seebold, UK

Downy mildew

## Kentucky foliar disease trial (Acorn squash, on-off-on)



Powdery mildew

- **Mesotunnels with fungicide sprays \***
- **Mesotunnels without fungicide sprays \***
- **No mesotunnels; fungicide sprays**
- **No mesotunnels or fungicide sprays**
  
- **Mesotunnels had higher marketable yield.**
- **Mesotunnels + sprays reduced powdery mildew most.**

# Cornell (NY) trial

- ➔ Acorn squash with full-season mesotunnels
- ➔ Acorn squash without mesotunnels
- ➔ Muskmelon with full-season mesotunnels
- ➔ Muskmelon without mesotunnels
- ➔ **Acorn squash:** Less PM/DM & CYVD with mesotunnels, but more aphids
- ➔ **Muskmelon:** 3x more marketable fruit with mesotunnels and much less bacterial wilt, but more PM and DM



# Take-homes from 2020 field trials

- Yield impact from mesotunnels differed by crop and state.
- Teff suppressed weeds but sometimes yield, too.
  - 2021: Mow teff when covers are off.
- Microclimate inside mesotunnels may impact disease risk.

