OREI cucurbit project: 2020 field trial results

The Current Cucurbit
IPM strategies for cucurbit organic growers for wilt disease and weeds management.

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

- 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.