Population Density Effects on Sweet Corn Tip Fill

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Tip Fill in Sweet corn

- Excellent tip fill is an important trait in sweet corn for fresh market
- Lesser importance in corn for processing
  - Very poor tip fill could decrease yields and be negative for frozen corn on the cob
Tip fill is affected by

- Genetics
- Disease
  - Common rust
  - MDMV
- Stress
  - Heat
  - Drought
- Population density
- Genetic X Environment
Objectives

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• Improve sweet corn tolerance to population stress:
  – High population densities and proper spacing can improve weed control.
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• Improve sweet corn tolerance to population stress
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• Identify for germplasm for future studies
Procedures

• Three environments
  – May 1, 2002
  – June 15, 2002
  – May 10, 2003
  – (no irrigation)

• Three densities
  – 10,000 plants/acre
  – 20,000 plants/acre
  – 30,000 plants/acre

• Six hybrids
  – Shogun
  – 710a
  – Zenith
  – HMX8392s
  – Radiance
  – Supersweet Jubilee

• Data collected 25-20 days after pollination
Tiller Number

Tillers per plant

- Shogun
- 710A
- Zenith
- HMX 8392S
- Radiance
- Super Sweet Jubilee
Silk channel, Tip Blank, and Ear Length

Silk channel and tip blank (cm)

Ear length (cm)

Silk

Tip

Length
Silk Channel Length

- Shogun
- 710A
- Zenith
- HMX 8392S
- Radiance
- Super Sweet Jubilee

Graph showing silk channel length with categories for 10, 20, and 30 cm measurements.
Ear Length

![Ear Length Graph](image-url)
Conclusions

- 30,000 plant per acre good density for maximizing differences
- Wide range in response 1 - 2.5 cm
- All hybrids did respond negatively to population stress
- What is the basis of the response?