Established in 1919 to overcome disease

P.O.J. varieties brought to Southdown in 1922

Three-way agreement signed in 1926

- USDA
- Louisiana Ag Experiment Station
- American Sugar Cane League
Hybridization

Fuzz planting

Selection

- Seedlings: 60,000 - 80,000
- First line: 6,000 - 8,000
- Second line: 600 - 800
- Nurseries: 60 - 100
- Off-station: 20 - 40
- Infield: 10 - 15
- Outfield: 5 - 10

12 Year process
Large number of (60,000 - 100,000) clones from seed
Transplanted to field and visually rated
- Visually select 2 stalks in stubble
- Brix on headland
- ~6000 - 8,000 accessions
- Two rows, 6 foot plots
- Non replicated plot
- Compare checks
- ~10% selection rate
Immediately following selection of 1st line trials

- 6-stalk samples planted in 2nd line trial.
- Evaluated in both Plant cane and 1st and 2nd stubble
  - Assignments in 1st stubble

- Visual Evaluation
- Mill Samples with pre-breaker for fiber analysis
PRE-BREAKER
NURSERIES

- First planted in 3 locations (research farms) with 2 reps
- Evaluated in plant cane and 1\textsuperscript{st} and 2\textsuperscript{nd} stubble
- 10 stalk sample evaluated in the lab (roller mill)
- Replanted the next year in 3 more locations (grower farms)
ROLLER MILL TO COLLECT JUICE
INFIELD

- top ~ 30 from USDA LSU nurseries
  - 3 locations and 2 reps for 3 crops
- 10 stalks samples (pre-breaker)
- Weigh each plot using chopper harvester and weigh wagon
- Compare to commercial checks
Top 10 - 15 from the infield tests from both LSU and USDA

Planted in 12 locations
- 3 replications
- 3 - 4 crops

Plots harvested with chopper harvester and weighed with weigh wagon

Juice quality assessed using hand harvested whole stalks
- Three-way agreement
- Committee meeting in May
- Release if equal or better than checks or with disease resistance
- ~12 years from cross to release
CURRENT BREEDING GOALS

- Increase yield
  - Early ripening and high sucrose
  - Increased tonnage
  - Disease resistance
  - Increase stubbling
  - Cold Tolerance
RESEARCH

- Examine historical outfield and nursery data
  - Genotype by Environment interaction
- Collaborate with other scientists
  - Look at using drone reflectance data in selection fields
GGE BIPLOT ANALYSIS
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