Poster Board Number 408, East Hall, Nov 6, 2013, 2:30-4:30

DROUGHT RESISTANCE IN SUGAR CANE VARIETIES IN MEXICO

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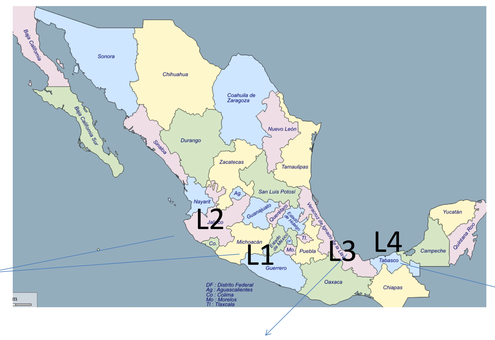
In Mexico 61 percent of sugar cane planted is rainfed. With climate change, drought periods are more varible and intense

OBJECTIVE

A sample of 10 sugar cane varieties per locality (L1-L4) were tested in 2011 to know the variability in drought resistance and the effect of the localities



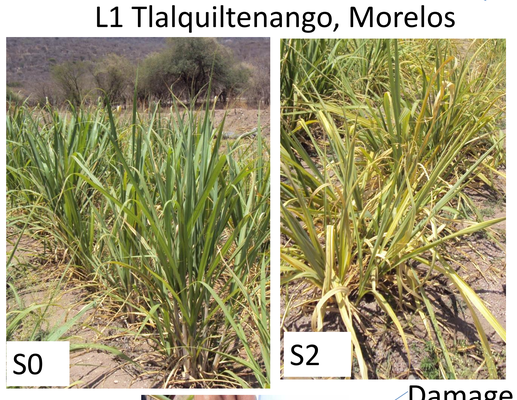
Three drought levels were used

S0 irrigated during GWD (Great Winter Drought=low rain fall from November to May of 2011-12),

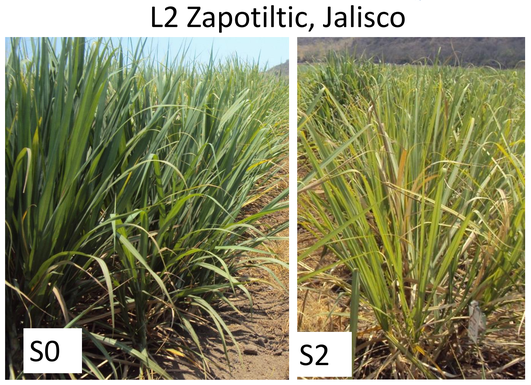
S1 without irrigation from March until end of GWD

S2 without irrigation at the GWD

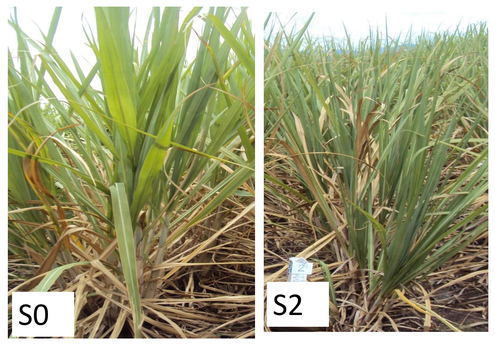
L1 Tlalquiltenango, Morelos



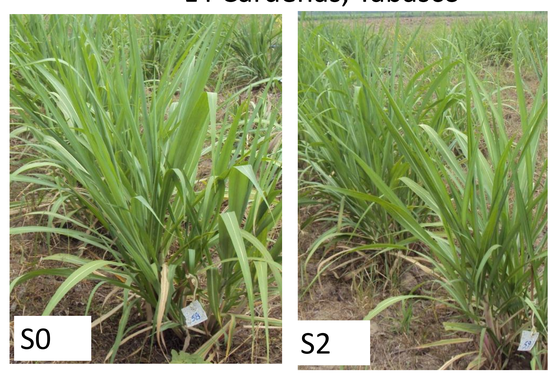
L2 Zapotiltic, Jalisco



L3 Paso del Macho, Veracruz

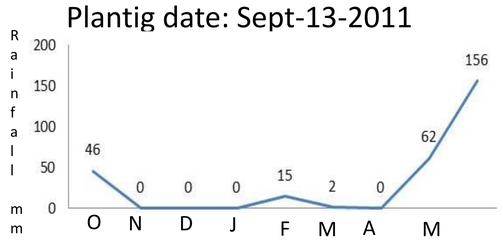


L4 Cárdenas, Tabasco

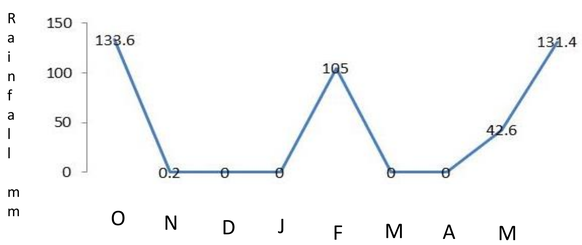


Damage of borer (*Diatraea* sspp)

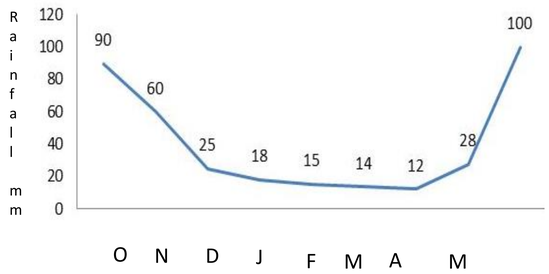
Rainfall at GWD: 79 mm
Plantig date: Sept-13-2011



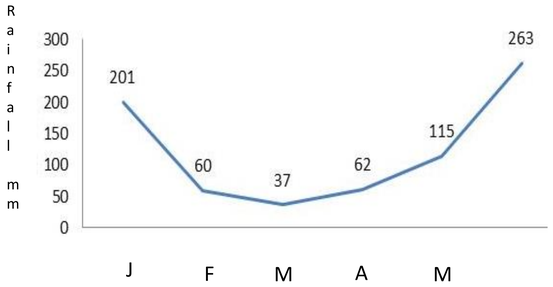
Rainfall at GWD: 148 mm
Plantig date: August-24-2011



Rainfall at GWD: 172 mm
Planting date: Sept-21-2011



Rainfall at GWD: 475 mm
Planting date: Dec-15-2011



Variables related to borer damage, tillering, plant grow, chlorophyll, canopy temperature, brix, and industrial quality was determined.

A selection index was determined adding “1” to each variety when it was stastically outstanding (P≤0.05) in a characteristic

In L1
Reduction in tillers caused by borer and drought was 25 %
Drought reduced:
plant height 20 %
chlorophyll 21.7 %
harvestable stem 29.2 %
Selection index 20-39

In L2
Drought reduced:
plant height 29.3 %
chlorophyll 21.8%
harvestable stem 33.4
Brix 5.1 %
Selection index 16-39

In L3
Drought reduced:
plant height 13.3 %
chlorophyll 5.3 %
harvestable stem 15.4 %
Selection index 15-27

In L4
There was no drought
Selection index 14-23

CONCLUSIONS

Drought severity was inversely related to rain fall during Great Winter Drought

In L1 the most important effect was drought*borer (*Diatraea* sspp) interaction.

According to selection index there are evidences of variability in the genetic material studied