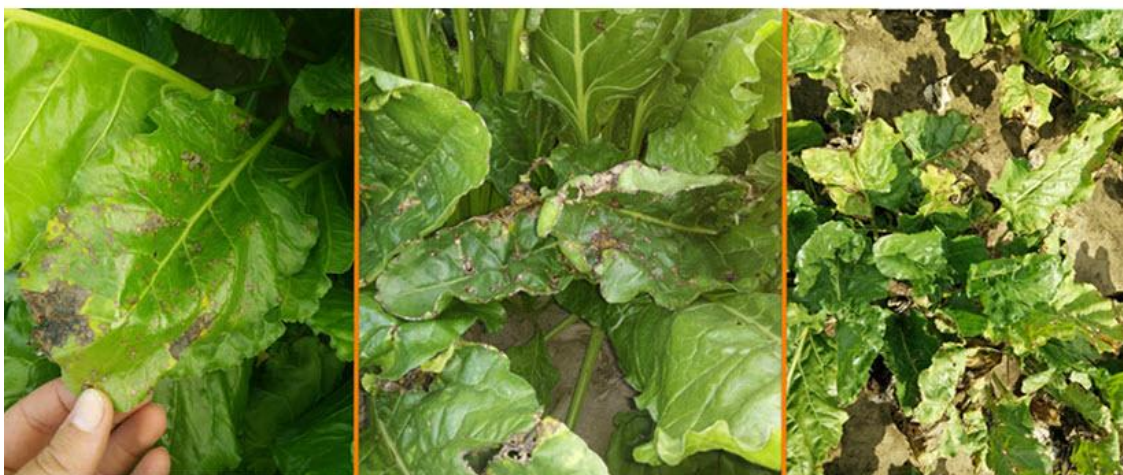


Canada: fighting Cercospora in sugar beets



Case Study

Application

Decision Support
Leafspot in

Location

Michigan and

Products deployed

A850 Teler
A753 addW
A723 addIT
SEN-R Tem
RG Rain Ga
WET Leafw

Participants

Michigan Sugar

Parameters

Air temperature
Precipitation
Leaf Wetness
Soil moisture
(sites)

Participants

Weather INno

Intro

Cercospora is a fungal disease that attacks the plant foliage, causing small dead areas of spots eventually turning the whole leaf black. It is among the most serious diseases of sugarbeets in Michigan and Ontario, capable of inflicting significant tonnage and sucrose losses as well as increased impurities. Cercospora favours wet, warm and humid conditions and flourishes after canopy closure. Once the field is infected the disease goes dormant during unfavourable conditions and reemerges once the temperatures rise and rain returns. Research shows that early defoliation by disease will significantly reduce tonnage and sugar content up to 2%. To minimize the risk of Cercospora, spray application timing is critical for growers.

Task

To help sugarbeet growers in Michigan and southern Ontario to cope with this potentially devastating disease, Michigan Sugar needed to closely monitor weather conditions in sugarbeet fields throughout the two regions. The parameters requested included air temperature, relative humidity, rainfall and leaf wetness, with the option for soil moisture and soil temperature monitoring.

Solution

Weather INnovations, Adcon's Canadian distribution partner, in partnership with Michigan Sugar developed a network of 68 ADCON telemetry weather stations, deploying A753 addWAVE GPRS RTUs, equipped with all the sensors requested and enough spare channels to monitor soil moisture and temperature. The project benefitted enormously from the research work done by Dr. Ron Pitblado of Ridgetown College and Weather INnovations Consulting LP, who had developed an advisory system to indicate the most suitable intervals for fungicide application for the control of Cercospora leafspot: BEETcast™. Growers use BEETcast™ to monitor Disease Severity Values (DSV's) that determine how high of a risk their fields are for Cercospora, and if a spray is recommended or not. This system allows growers

to tailor their program to their sugarbeet variety susceptibility and the level of risk management they are comfortable with.

Summary

The current project has been in place since 2004, collecting years of valuable information used in research and analysis by Michigan Sugar, and continues to operate today. The success of the Michigan Sugar network has branched off into smaller customized projects such as beet pile monitoring, using soil temperature probes installed in beet piles to monitor hot spots, ensuring quality through the winter months. The Michigan Sugar weather network has also played a role in capturing *Cercospora* spores in order to pinpoint infection periods more precisely.

The density and longevity of the network has allowed for more research into disease growth and susceptibility in sugarbeets. With extreme variability in temperature and rainfall, weather monitoring and decision support tools play an important role in growers' on-farm decisions.

ADCON Products deployed in this project:

[A850 Telemetry Gateway](#)

[A753 addWAVE UHF](#)

[A723 addIT UHF](#)

[540mA Solar Panel](#)

[Adcon TR-1](#)

[Adcon WET](#)

Mission accomplished - no more *Cercospora*! Sweet...

