



Application Notes

Moisture in Sugar derived from Beets

Final moisture content of crystalline sugar needs to be kept below a critical level to prevent it from clumping in the storage silos and to maximise its shelf life.

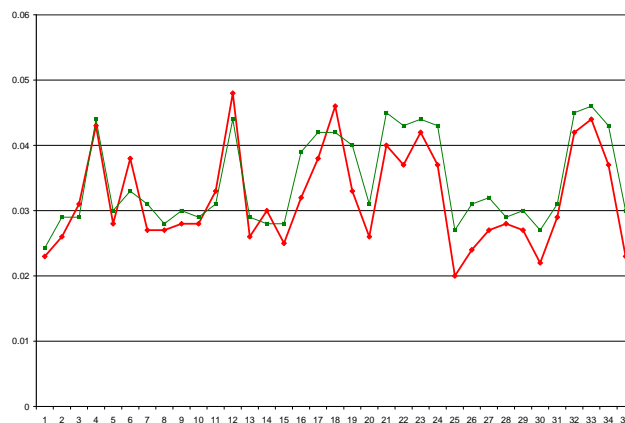
Sugar Processing

Beets are sliced into 'v' shaped wedges termed cossetts to maximize the surface area exposed to hot water in the diffuser. Owing to the osmotic gradient, sugar diffuses from the cossetts into the water. The sugar solution flows in one process direction and becomes increasingly concentrated. Once the solution exits the diffuser, it undergoes carbonation, then a filtering process to extract the non sugar impurities. Sugar liquor enters a multistage evaporator to reduce the water content prior to the boiler where crystallisation occurs. The crystals are separated from the mother liquor by centrifugation then dried with hot air before storage and transportation.

Measurement Location and Performance

Measurement can be made at either the exit of the Centrifuge or at the exit of the hot air dryer if consistent product presentation can be maintained, but measurement performance tends to be better off-line with static product presentation.

Comparison of lab (red) vs. MCT NIR moistures(green)



Measurement Information	
Moisture Range %	0.02 – 0.05%
Accuracy (+/- %) - offline	0.003%