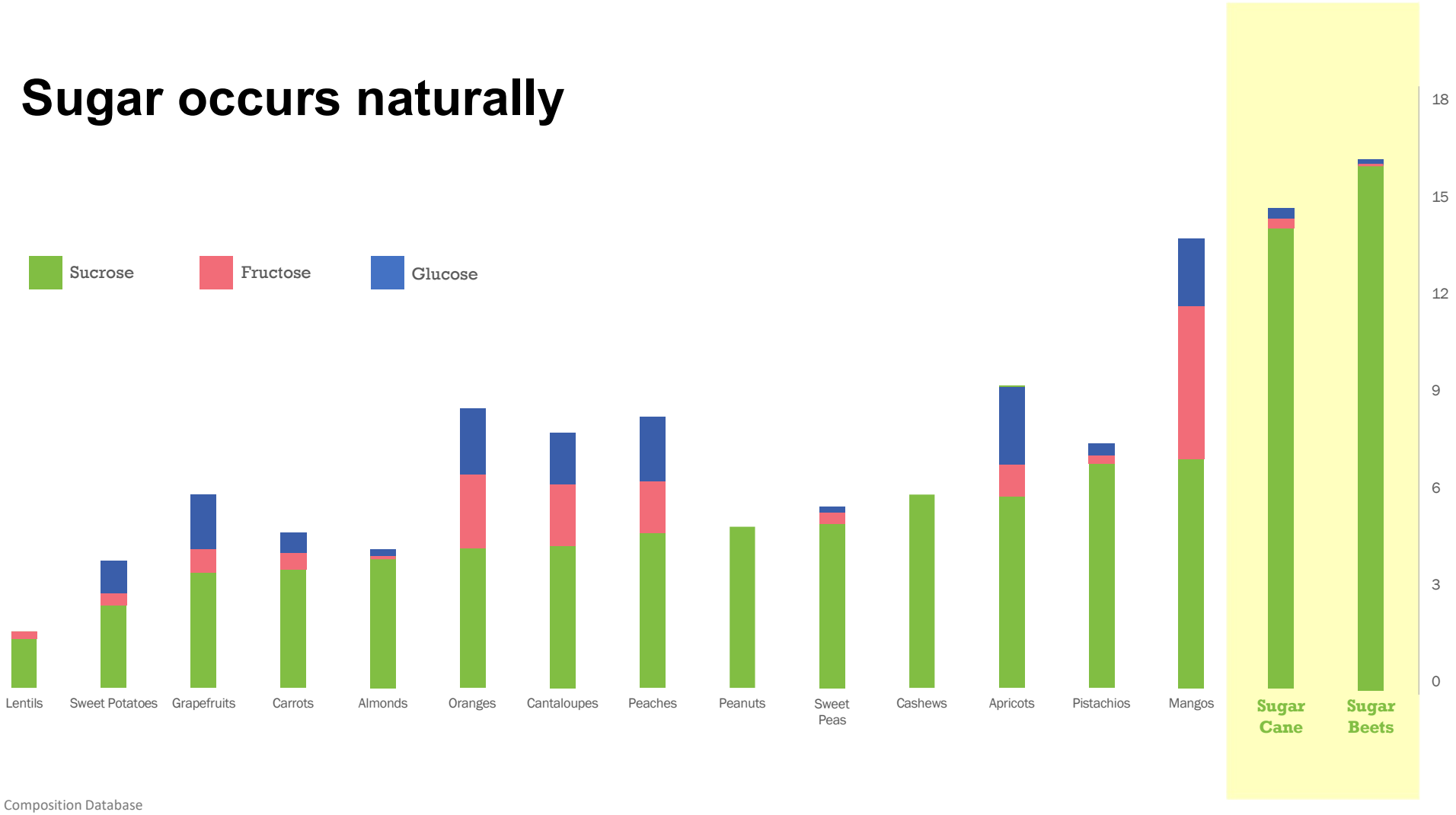
Sugar(Beet) Overview

Harrison Weber – Executive Director – RRVSGA
Nate Hultgren – Southern Minnesota Beet Sugar Cooperative Chairman of the Board

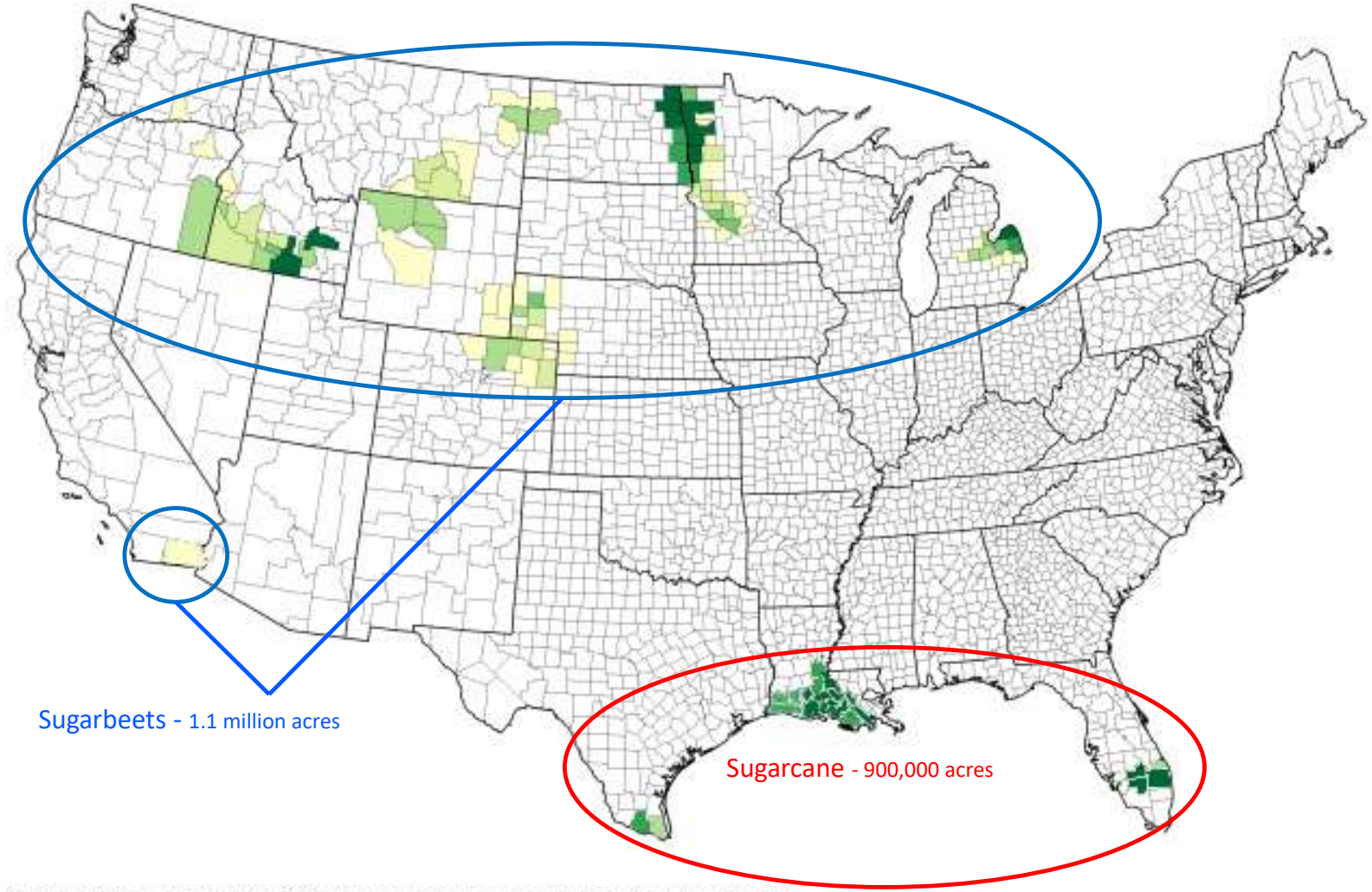
- Contains about
  - 18% sugar
  - 72% water
  - 5% pulp (pellets)
  - 5% impurities

Sugar occurs naturally

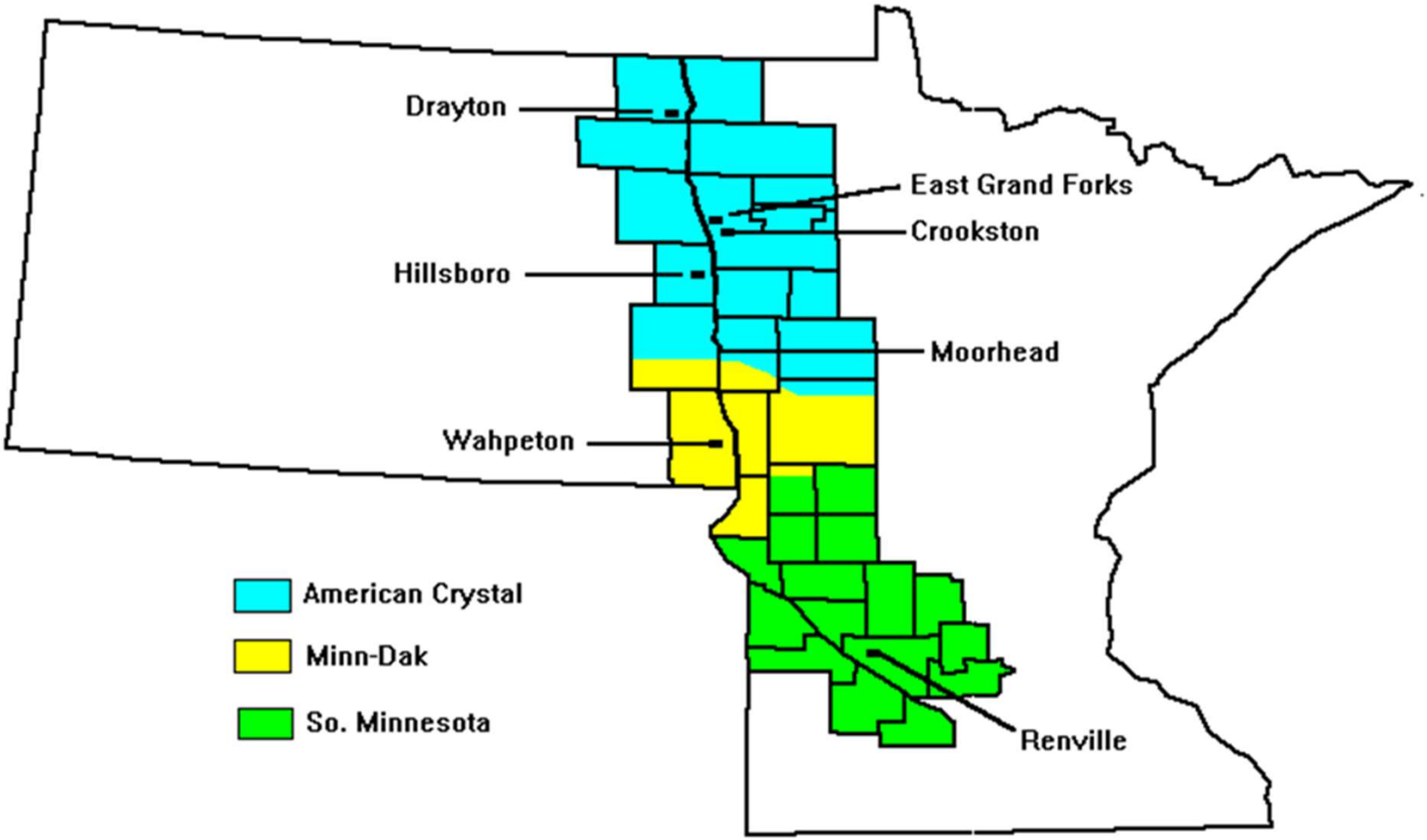


USDA Food Composition Database

Sugarbeet and Sugarcane Production Regions



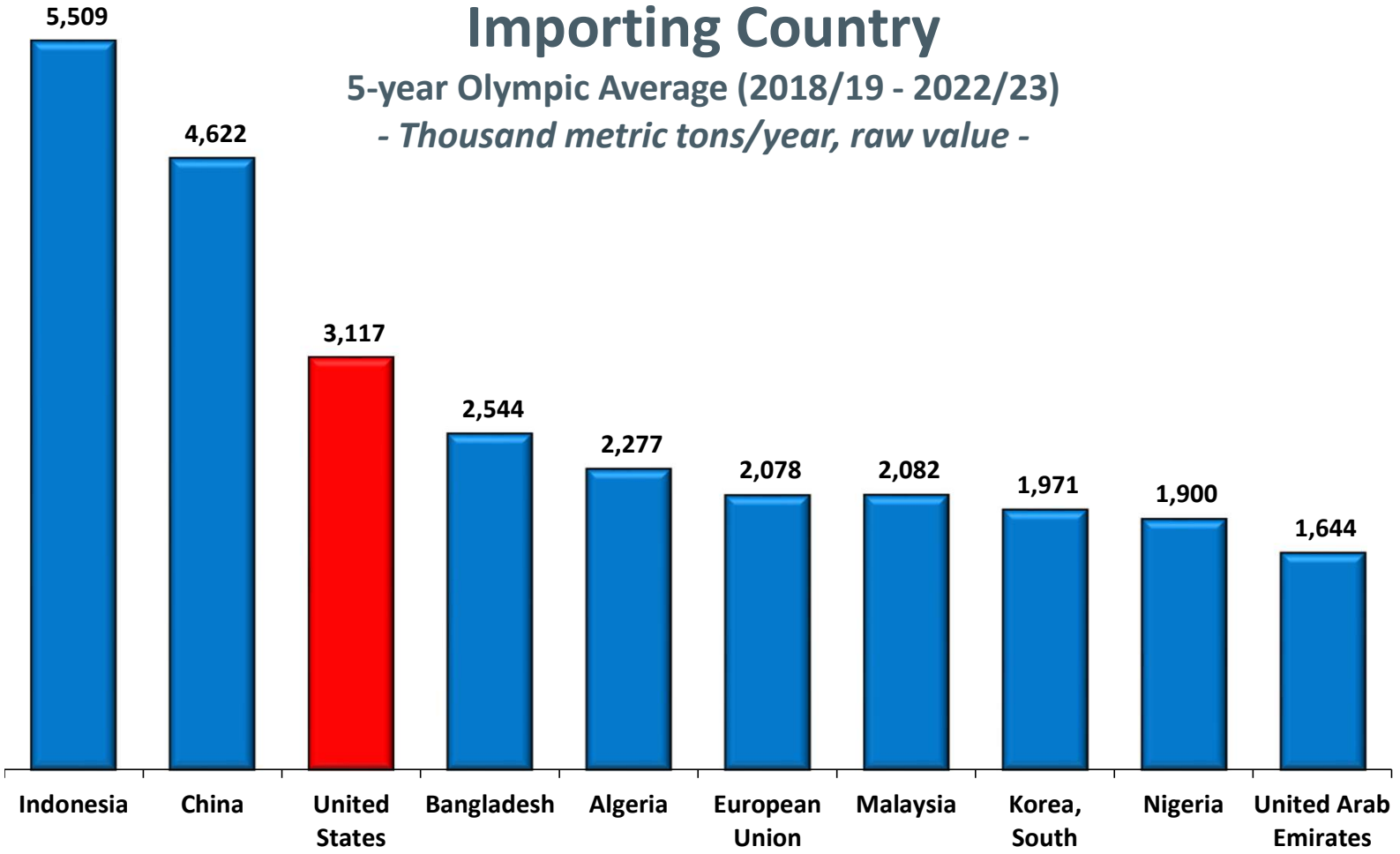
*Adapted from USDA-NASS 2018 Sugarbeet and Sugarcane production maps.


Drayton
East Grand Forks
Crookston
Hillsboro
Moorhead
Wahpeton
American Crystal
Minn-Dak
So. Minnesota
Renville

United States: 3rd Leading Sugar Importing Country

5-year Olympic Average (2018/19 - 2022/23)

- Thousand metric tons/year, raw value -



Data: USDA/FAS, November 2022; 2022/23 forecast.
The European Union is based on data for the EU-28 through 2020/21 and for the EU-27 (excluding the UK) beginning with the 2021/22 forecast year.

U.S. Sugar Industry Overview

- U.S. sugar industry creates 151,000 U.S. jobs in 24 states.
- Cane grown in 3 states
- Beet grown in 11 states
- 100% of Sugarbeet Factories are farmer owned.
- Cane ownership is mixed – Employee, Family, Farmer Owned.
- Contributes over $23 billion a year to the U.S. economy.

Regional Economic Impact of Sugarbeets in North Dakota and Minnesota

Sugarbeet industry is a major economic factor in our region

Economic impact of $6.13 billion

Approximately 16,400 related jobs

Strong Domestic Union Labor

Generates $196 million in local and state government revenue

Sugarbeets in our region

- 100% Farmer Owned
- Combined the 3 sugarbeet cooperatives plant between 625,000 – 675,000 acres a year
- Roughly 3500 family farmers own the three cooperatives
- This region accounts for about 25% - 33% of all sugar produced in the US (cane + beet)
- Obligation to plant sugarbeets

Planting

- Sugarbeet planting is priority
- Takes a week to 10 days to complete
- Average window is April 20 – May 10
- 100% “Round-up Ready” sugarbeets
- Seeds are coated with a pesticide to protect them from diseases and pests
- Application at seed facility uses “Loss in weight measurement” process to exactly apply
- HPLC (High-Performance Liquid Chromatography) – technique in analytical chemistry used to separate, identify, and **exactly** quantify each component in a mixture created from the treated seed sample.

Growing Season

- Spraying
- Weeds, Disease, Pests
- Timing is critical
- Using Technology – “GPS/Row Shut Offs, See and Spray”
- Regulators: EPA, MPCA, Federal and State Labels, Science, Safety!
- Examples:

GOOD!

BAD!

“Pre-Pile” and into Harvest

- Mid-August through September
- Each grower brings in about 15% of their crop
- Provides for the gradual startup of factories and to get sugar to customers
- Designed to maximize factory run times and sugar produced
- 7 factories with nearly 50 receiving stations and over 150 storage piles
- Main Harvest begins October 1st and runs 24 hours a day for 2 weeks (Hopefully)
- Process sugar 24/7 from late August to Mid-May (260 days for RRV).

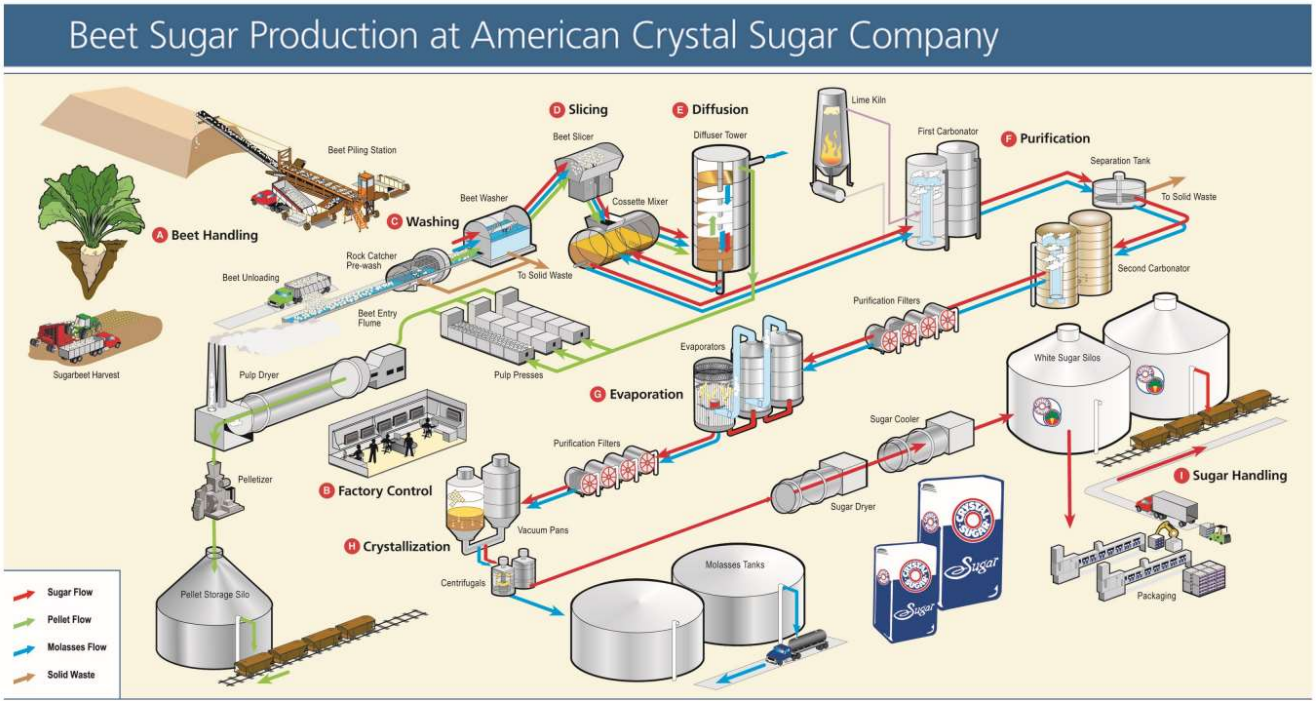
Step 1: Topping

Step 2: Lifting

Step 3: Transportation to the Piling Site or Factory

Piling Site/Receiving Station

RRV “Mountains”



Extraction Steps

What we sell:

- Granulated Sugar
- Powdered Sugar
- Brown Sugar (added molasses)
- Sizes: Single serving packages, all the way up to rail car size for food companies
- 30+ different consumer brands

We also sell:

- Beet Pulp – cattle and equine feed
- Molasses – dairy and beef cattle
- Betaine – swine and poultry nutrition
- Raffinate – liquid feed additive and road de-icer

Who Buys Our Sugar?

Who are Our Retail Customers?

Issues

- Freight movement – Limited by mother nature
  - 10 days to 2 weeks to harvest
- Pesticide Restrictions
  - Very few acres so private industry does create alternatives specific for sugarbeets
    - 1.1 million acres of sugarbeets compare with 90 million of corn, 90 million of soybeans
- Factories
  - Invest millions each year to improve efficiencies and reduce footprint of our factories

- Treated seed
  - 100% of our industry uses GMO technology
  - Decreased significantly the amount of land needed
  - Increased the yield
  - Decreased the type and amount of pesticides we have needed.
- Labor – need about 15,000 people at alone for harvest.

Policy and Legislation

Policies and Legislation that is enacted in Minnesota, truly effects our entire Nation's supply chain of a safe, reliable and affordable ingredient to consumers.

Just say NO to the imposter!