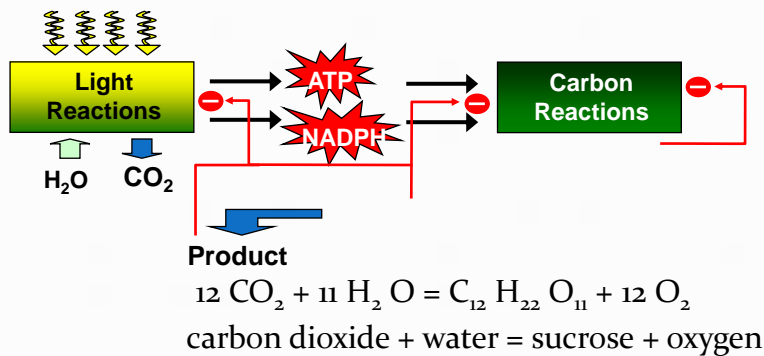


SUGAR YIELD A DECISIVE OPTION

*Dr. Imtiaz Ahmed Khan
Principal Scientist, NIA
Tando Jam*

What is sugar



- Sugar yield = Cane yield x Sugar recovery / 100
example **130 x 9 / 100 = 11.7**

CURRENT SENERIO

Year	cane price (40kg)	sugar price/kg	% value
2000-01	36	22	61.11
2003-04	43	25	58.14
2005-06	60	33	55.00
2008-09	81	43	53.09
2009-10	102	63	61.76
2011-12	154	57	37.01
2012-13	172	55	31.98

Important parameters

Clean cane	***
Pol %	****
Quantity of juice	***
Maturity	*****
Fiber%	***
Cane weight	****

Criteria of harvesting of cane at right time:

Crop Age

Harvesting is done based on maturity (age) group. Sugar factories give cutting orders to farmers based on crop age. This is not a scientific method since, planting time, crop management practices, weather conditions etc influences maturity.

Visual Symptoms

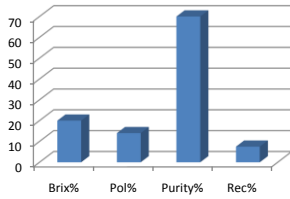
Yellowing and drying of leaves, metallic sound of mature canes when tapped, appearance of sugar crystal glistening when a mature cane is cut in a slanting way and held against the sun are some of the visual indices of assessing maturity of cane.

Quality Parameters

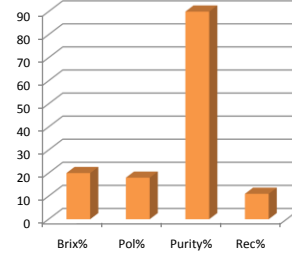
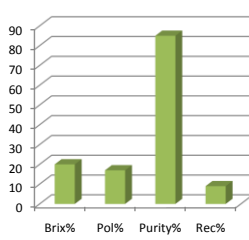
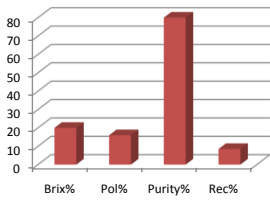
Important sugarcane quality parameters for assessing cane maturity are the juice Brix, pol or sucrose percentage and purity.

- Brix %:** Brix readings can be separately taken from both top and bottom. A narrow range indicates ripeness of the cane, while a wide difference indicates that the cane is yet too ripe.
- Juice Sucrose Or Pol Per Cent:** The juice sucrose per cent is the actual cane sugar present in the juice. It is determined by using a Polarimeter or sucrolyser.
- Purity Coefficient:** cane attained a minimum of 16% sucrose and 85% purity.
- Reducing Sugars:** The reducing sugars refer to the percentage of other sugars (fructose and glucose) in the juice. A lower reducing sugars value indicates that much of the sugars have been converted into sucrose.
- Commercial Cane Sugar:** The commercial cane sugar (CCS) refers to the total recoverable sugar percent in the cane.

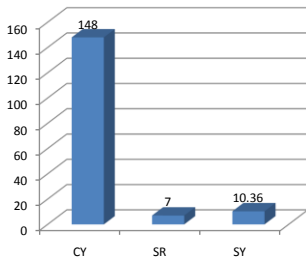
How maturity effects the sugar recovery



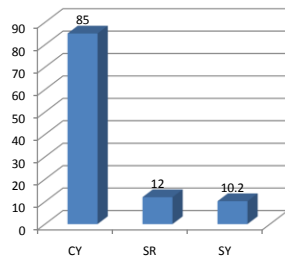
Brix%	Purity%	Pol%	Recovery%
20	70	14	7.5
20	80	16	8.5
20	85	17	9.0
20	90	18	11.0



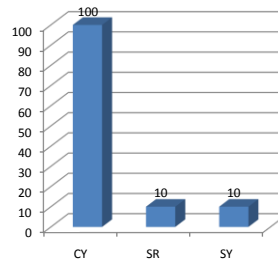
	Cane yield (t/ha)	sugar recovery	Sugar yield
Situation 1	148	7	10.36
Situation 2	85	12	10.2
Situation 3	100	10	10



1



2



3

Food of thought

For developing sugarcane growing nations, **there is still time for constructive and meaningful change.** There is time to prepare its place as a future sugar crop, a domestic energy crop, and a multiple-products commodity in service to all future generations.

Alex G. Alexander