

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



# KEY NOTE

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# R and D at Industry Level

- Pakistan Sugar Industry can no longer afford luxury of doing litter R & D, relatively in relation to its size
- The benefits that can be attained with well funded R&D at the Industry level are 6-Bees:
  - ✓ Better Sugarcane Varieties
  - ✓ Better Agronomic Practices
  - ✓ Better Fertigation and Pest Management
  - ✓ Better Cane and Sugar Yields
  - ✓ Better Informed Cane Growers
  - ✓ Better Sugar Manufacturing Technologies



# FACTORS REDUCING YIELD AND QUALITY OF CANE

<b>Sr. No.</b>	<b>Description</b>	<b>SC Yield (%)</b>	<b>SR % Cane)</b>
1.	Insect-Pest/Disease	10-30	10-15
2.	Soil texture	09-17	04-05
3.	Varieties	10-20	10-20
4.	Staling losses	05-12	05-10
5.	Water stress/Irrigation	10-30	05-07
6.	Imbalanced Fertilization	10-20	05-10
7.	Early/late harvesting	-	05-10
8.	Extraneous Matter	-	01-10

(K. B. Malik (2018) Sugarcane Book. Published with the patronage of Sugarcane R and D Board, Punjab.



# View of Commercial Composting





## **PREPARATION OF COMPOST BRAZIL : MATURITY PERIOD 40 DAYS.**



# 100% CONVERSION OF FILTERCAKE INTO COMPOST- BARZIL





# **COMPOST TURNER AND COMPOST DISTRIBUTOR- BRAZIL**





# Benefits of Composting from Filter Cake

- Rich source of Organic matter (30 - 40%)
- Yield increase, S. Cane (10 %) and Wheat (25 %)
- Improves Physicochemical Properties of soil
- Reclamation of problem soils, Decreases pH of soil towards neutral, Increases the solubility of salts
- Value (Filter-cake) to Value-addition (Compost)



# Expected Benefits from Compost application - Pakistan

Description	Unit
Sugarcane area (2021--22)	2.72 million acres
Filter cake production (3% of total cane crushed ) per season	2.01 million tons
Expected Compost production per season	1.00 million ton
Area with half doze of fertilizer (NPK 75-50-50) + 1 ton of compost per acres	1.00 million acres
Reduction in Fertilizer Import bill (Rs)	10.0 billion/Season
Additional benefits per season for both growers and millers	Increase yield (10%) Sugar Rec. 0.5%



# Recommendations

- Sale of filter cake for bricks kilns or for any other use of fuel be strictly stopped
- Sugar mills should turn all of their filter cake, organic wastes, fly ash, distillery stillage, or floor washings in to organic fertilizer through composting process
- The Compost thus produced must be recycled to Sugarcane fields primarily and also to other crops.



# Contribution of Research Institutes - Pakistan

Research Institute	Approved Varieties	Promising Varieties	National Trails	Total
SRI (1947)	<b>28</b>	6	6	40
SSRI (1983)	04	<b>20</b>	<b>20</b>	<b>44</b>
FSRDC (2010)	-	07	03	10
NSCRI (1972)	<b>22</b>	02	02	26
SCRI (1952)	04	04	04	12
<b>Total</b>	<b>54</b>	<b>43</b>	<b>35</b>	<b>132</b>



# NEED TO MECHANANIZED SUGARCANE

## PLANTING



## HARVESTING





# Challenges

- Small Land holding - Increasing Trend
- Costlier Labour/Shortage - Eroding Profits
- Payments - Inconsistent and Delayed
- Discipline - In cane supply
- Sugar Industry - Check and Balances



# Recommendations

- Mechanized Plantation/Harvesting - Sugar mills as service provider
- Innovative technologies – Digitalization for Precision Sugarcane Agriculture
- Composting from FC - Mandatory for Sugar Mills
- S. Cane and Sugar price - Regulated on Scientific data
- At least 50 percent of Cess fund - R & D at Industry Level



# THANKS

