Mechanisation to Automation
The Future of Cashew Processing

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MECHANISATION VS AUTOMATION

**Mechanisation:**
Mechanisation saves the use of human muscle
Mechanisation displaces Physical Labour
Replacement of unskilled/semiskilled human power

  e.g: Shelling machines, Peeling machines, Graders, Sizers, Sorters

**Automation:**
Automation saves the use of human judgement
Automation displaces mental labour
Replacement of skilled/supervisory human power

  e.g: Auto Thermal Control, Auto Moisture Control, Auto humidity Control, Auto filling or Stacking or feeding activities, Auto Positioning of RCN / Kernel, Auto rework

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WHY AUTOMATION?

Minimises the workforce < 1 worker per bag
Minimises the processing time 3-5 days
Consistency in Processing Quality
Less human intervention & Microbes issues
Minimises infestation risk
No Jute bag Concept in process lines
Attempt towards Crates Free Plants / Silo based plants
Attempt towards above the ground process
Minimises interest on working capital
Easy maintenance of GMP
Move towards Continuous Process from Batch Process
PREREQUISITES FOR AUTOMATION

- Size & Scale of the Plant. (Medium to large)
- Plant Location & Skill availability
- Effective spares management
- Effective After Sales Service
- Strong Technical & maintenance skill requirement
- Multiple parameters for multiple origins
- Medium to High Investment
- Aim to maintain Processing Cost lowest
- Linear and visual flow
- Manual Mode & Interface at every level
- Low Oil Contamination

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KERNEL HANDLING TECHNIQUE
e.g: SEMI AUTOMATION CONCEPT

RCN Cleaning-Holding-Cooking- Transfer Synchronisation

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Post Cooking - RCN Auto Drying & Sizing Synchronisation
Skill Management in Mech/Automation

Most of the Processors use to get excited with mechanisation output for first 6-8 months and started complaining there after on the performance of the equipment!!! What is the reason?

“Skill Management to handle mechanical installation is quite different than manual processing!!”

> Strong Technical Teams/ Management efforts required!
> We can’t handle 450 HP mechanical Plants in the same way like 25 HP manual Plants!
> Preventive/Predictive/Creative Maintenances are critical!
Fundamentals for Plant Design

- Spend more time for Plant Design
- Design the process line first & work on civil structural later
- Go for turnkey solutions instead bits & pieces
- Involve in key line/CAD drawings, visualise on 3D
- Prefer rugged machinery than delicate equipment
- Make sure use SS at all contact points
- Ensure strong structural to align technology changes
- Avoid Epoxy flooring for trolley movement
- HACCP based designs & maximum linear flow concepts
- Cross ventilation / low sweat

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