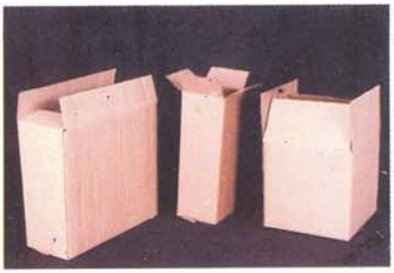
CIRCOT Leaflet No. 6

Corrugated Boxes

from Cotton Plant Stalk

for Packaging

Central
Institute
for Research on
Cotton Technology
Mumbai



Merits :

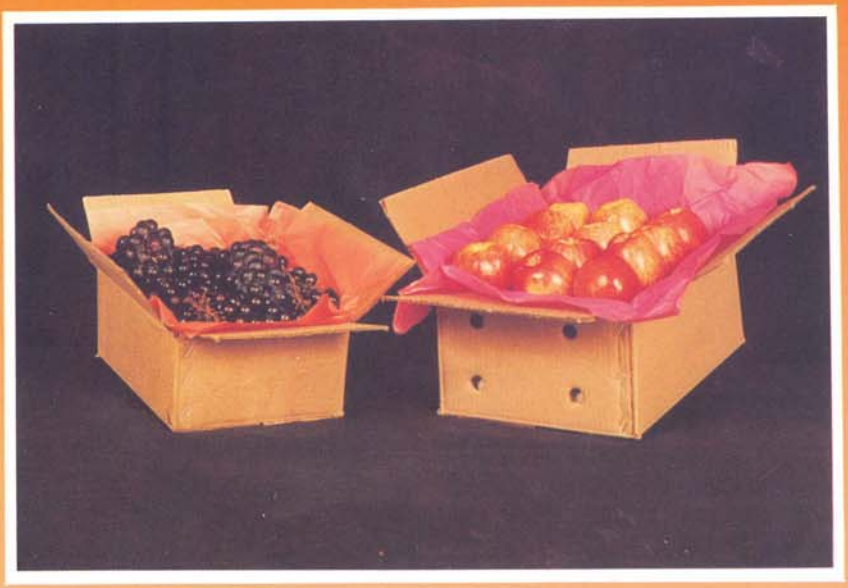
- Agro-Waste Utilisation
- **Timber Substitution**
- Ideal for Fruits
- **Rural Employment**
- Extra Income to Farmer

Corrugated boxes are ideally suited for transportation of fruits and vegetables. They are conventionally prepared from forest based wood pulp. In the context of depleting forest resources and increasing concern over environmental preservation, alternative raw materials like cotton stalk could be used for the preparation of kraft pulp and paper required for making of corrugated boxes.

The process developed at CIRCOT involves digestion of cotton stalk chips of about 1.5 to 2.0 cm size in a rotary digester with 17% kraft liquor at 160°C temperature for a period of 5½hrs at a material-to-liquor ratio of 1 : 2.5, thorough and repeated wash, conversion to pulp of desired freeness by mechanical beating in a valley beater and preparation of kraft paper of required grammages on a paper making machine.

Corrugated boards of 3, 5 and 7 ply prepared from the kraft paper can be used for making boxes of various dimensions for packaging and transportation of fruits and vegetables.

Chipped Cotton Plant Stalks



Corrugated Boxes from Cotton Plant Stalks Packed with Fruits

Quality of these boxes is *on par* with those made from conventional raw materials. The packed fruits have better and more uniform ripening behaviour, good flavour, texture and better shelf life.

Cost of Production of Corrugated Boxes

(2000 boxes of 265 mm × 180 mm × 105 mm, 3 ply, 120 × 100 × 120 grammage)

Cost of one tonne of kraft paper	Rs. 8054.00
Cost of production of corrugated boxes	Rs.12550.00
Total production cost for 100 boxes	Rs. 628.00 (approx.)
Sale price of 100 boxes	Rs. 900.00 (approx.)

These boxes are comparatively cheaper than corrugated boxes made from other raw materials.

CIRCOT, Mumbai

This process can be easily adopted by existing paper manufacturing units to offset their raw material crunch by using cotton stalk as substitute raw material available at present in plenty.

For further information contact :

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