



ROHINI

COLLEGE OF ENGINEERING AND TECHNOLOGY

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DEPARTMENT OF AGRICULTURAL ENGINEERING

AI3601 POST- HARVEST TECHNOLOGY

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UNIT I: FUNDAMENTALS OF POST HARVESTING

CO1: To understand the importance of post-harvest processing and determine moisture content of products.

Optimal Stage of Harvest



- The optimum stage of harvest refers to the ideal time at which a crop should be harvested to maximize yield, quality, and storability while minimizing post-harvest losses.
- Harvesting too early or too late can lead to significant losses in weight, nutritional value, and market value.

Importance of optimal harvest stage:

- Reduces field losses (shattering, shedding, bird/insect damage)
- Ensures better milling/recovery rate
- Improves seed viability (for seed crops)
- Enhances nutritional and cooking quality
- Reduces drying cost and time
- Improves shelf life during storage

Factors determining optimum harvest stage:

- Moisture content of grain/seed
- Physiological maturity of crop
- Weather conditions
- End use (food, seed, feed, industry)
- Method of harvesting (manual vs. mechanical)



Indicators for Harvest Maturity

For cereals (Wheat, Rice, Maize, etc.,)

- Grain Moisture content: 20–25% (harvest stage) and 14–15% (safe storage)
- Colour of stem and leaves: Green to Yellow
- Dough stage of grains: Hard dough stage (hard to puncture with thumbnail)



For Pulses (Green gram, Chickpea, Pigeon pea, etc.,)

- Pod colour: Green to yellow/brown
- Sound in pods: Rattling sound in pods when shaken
- Seed moisture: 15–18%
- Condition of leaves: Leaves begin shedding



For Oilseeds (Groundnut, Soybean, Sunflower, etc.,)

- Pod colour: Green to yellow/brown
- Condition of seeds: Seeds should be separated easily from the pods / shells
- Seed moisture: 15–20%
- Condition of leaves: Leaves dry and turn yellow



Consequences of Improper Harvest Timing

Early Harvest	Late Harvest
Higher moisture → more drying cost	Shattering losses
Immature grains → poor quality	Pest & disease infestation
Lower yield	Reduced germination (for seeds)
Discoloration & poor milling recovery	Weather damage (rain, birds)