Cocoa flavour development is linked to...

• Genetic composition of the bean (genetic flavour potential of different varieties)

• Pre harvest conditions affecting pest and disease incidence

• Post harvest processing (fermentation and drying)

• During manufacturing (roasting, milling (liquor) formulation and conching (chocolate))
Cocoa postharvest processing and critical control points (CCPs)

Harvest pods
CCP 1: Condition of pods harvested

Pod opening
CCP 2: Beans damaged during cracking

Sort beans
CCP 3: Beans selected for fermentation (diseased, damaged etc.)

Fill fermentation boxes and ferment
CCP 4: Fermentation protocol (sanitation, duration, turning regime etc.)

Empty fermentation boxes and dry beans
CCP 5: Improper handling of beans and improper drying protocol (bean depth, turning, smoke exposure etc.)

Transport
CCP 6: Improper handling (contaminated containers, exposure to rain, exhaust etc.)

Storage of cocoa beans
CCP 7: Storage protocol (ventilation, temperature, humidity etc.)
Harvesting and pod breaking – some important considerations

Before ripening
- Little pulp
- Dry pulp
  - Poor fermentation
    - Purple beans
    - Contamination
      - Mouldy beans
  - Little flavour
    - Bitterness
    - Astringency
- Low butter content

After ripening
- Germinated beans
- Black beans
- Rotten beans
  - Contamination
    - Mouldy beans
  - Poor quality butter
    - Putrid taste
  - Mouldy taste
    - Toxicity
    - Acid butter

Cocoa defects due to harvesting
Harvesting and pod breaking – some important considerations

With a machete/cutlass

- Damaged beans
- Contamination
- Mouldy beans
  - Mouldy taste
  - Toxicity
  - Acid butter

No bean separation

- Agglomerates
- Broken beans
- Splits
- Shells
- Purple beans
  - Little flavour
  - Bitterness
  - Astringency
  - Burn on roasting

Poor fermentation

Germinated beans

- Black beans
- Poor quality butter

No bean sorting

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Fermentation – some important considerations

Cocoa defects due to fermentation

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Drying – some important considerations

Too fast
- High volatile acidity

Over fire
- Smoky smell
- Foreign tastes

Inadequate Poorly done
- Mouldy beans
  - Mouldy taste
  - Toxicity
  - Acid butter

Cocoa defects due to drying

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Cleaning and Storage considerations for cocoa beans

- Moisture uptake
- Insect Infestation
- Contamination

Mouldy beans

- Mouldy taste
- Toxicity
- Acid butter

Insect damaged beans

- Weight loss

Contamination

Wood smoke
Diesel fumes
Insecticides
Cooking smells
Mouldy bags etc.

Foreign tastes

Cocoa defects due to storage

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Post Harvest Linked to Quality – Main take away points

Quality Problems

• Failure to follow the recommended practices in any one of the critical control processing steps can result in sub-optimal or poor quality = POOR FLAVOUR.

• Problems can be assessed and avoided by careful attention using
  o Sight
  o Cut test
  o Smell and Taste

Quality Management

• Moisture content, bean count and cut test should be carried out on representative samples.

• Flavour assessment.

• Local quality criteria and additional testing must be set up inline with national standards and market requirements.

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