



Kenya Agricultural & Livestock Research Organization
(KALRO)

ALTERNATIVE METHODS FOR PROCESSING COFFEE

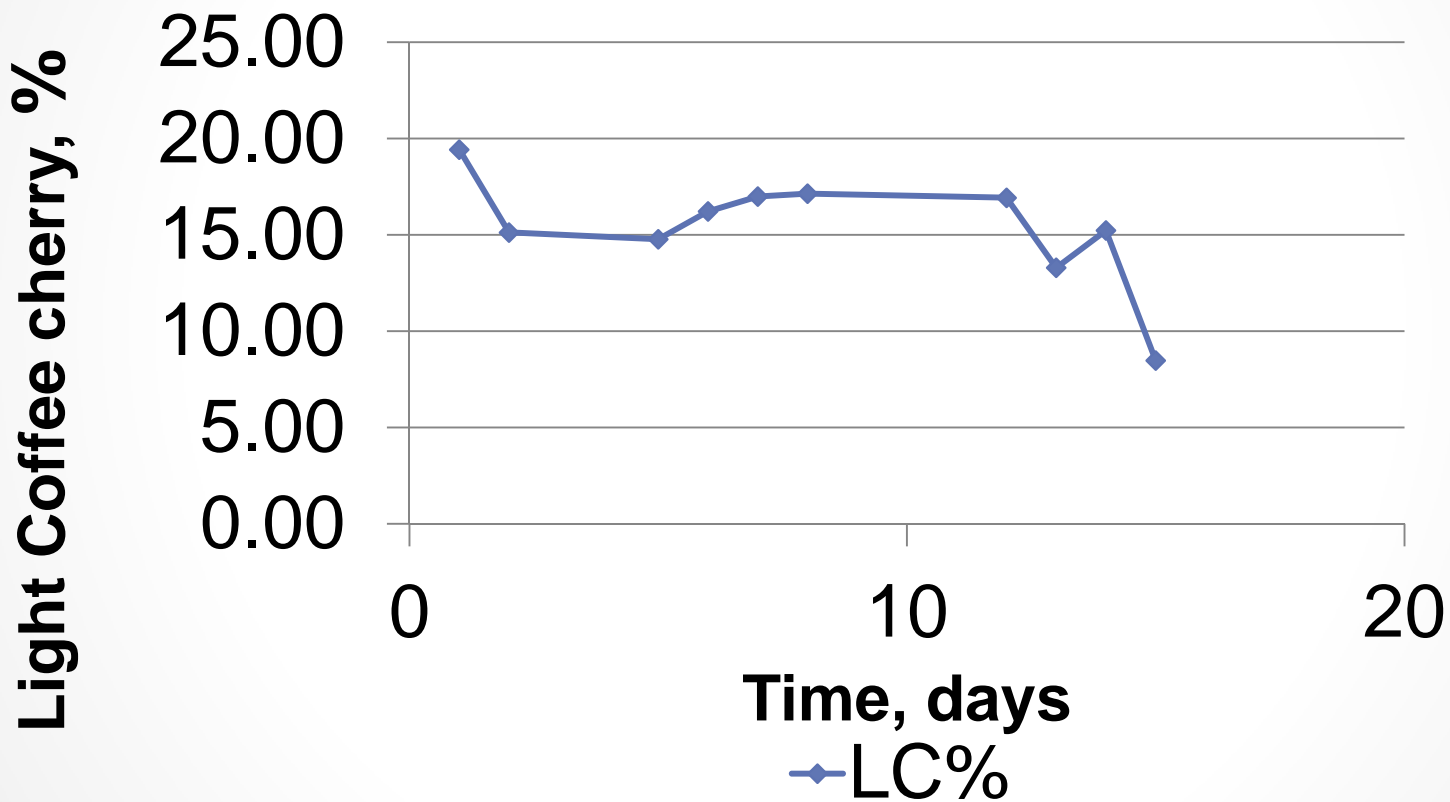
• **J K Mburu; C W Kathurima & G.
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Current processing coffee methods

- Dry processing of sorted and stripped coffee
- The full washed 2 stage wet method
- Semi washed method

Light coffee cherry

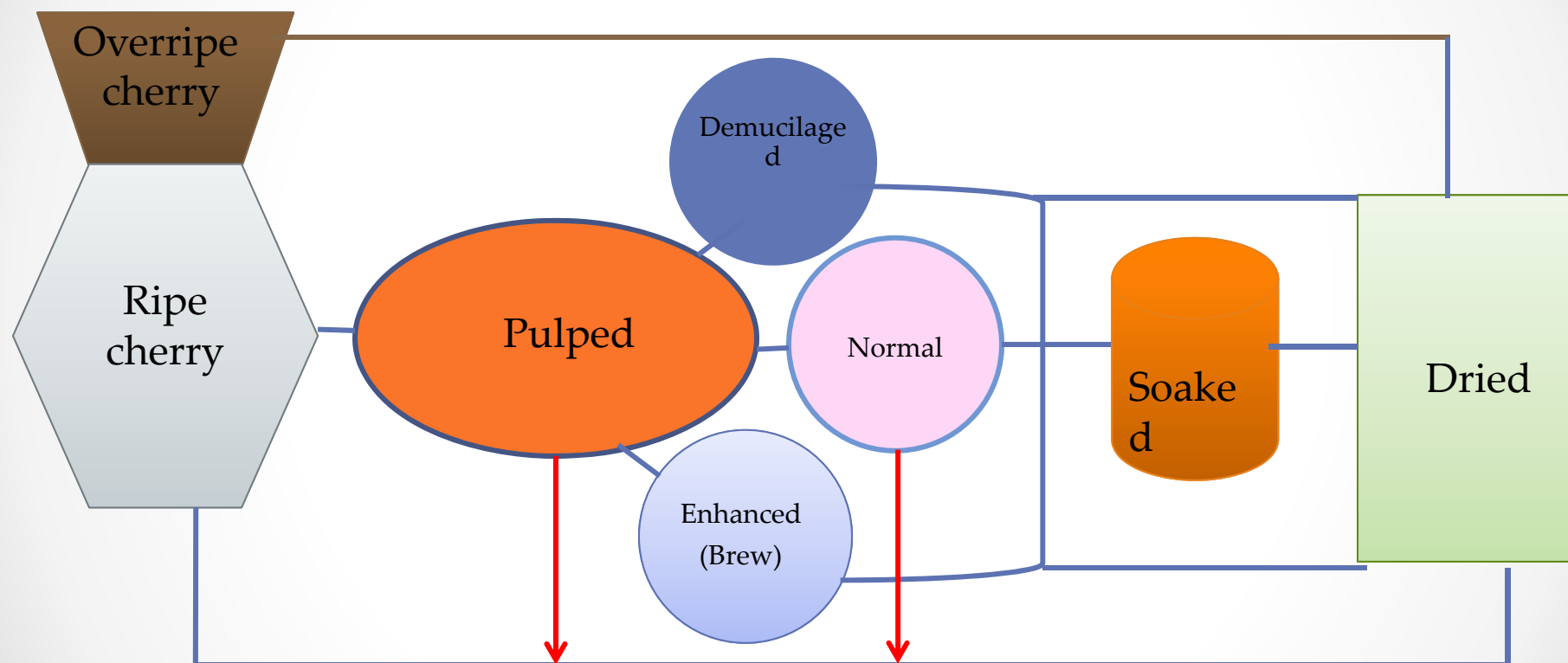




Coffee lights and pulping effluent brew

- Fill the bucket of floaters with water,
- Put a lid on it to keep the solids under the water and stop the fruit flies,
- Give it a brisk stir with a stick for a minute every day for five days,
- Decant the surface scum, strain off the bean/solids and have about half a bucket of clear yellow liquid which is full of potent bacterial enzymes.
- If the pulping water is being re-circulated, then the brew can just be mixed into the pulping water.
- If recirculation is not possible, then the brew should be diluted sufficiently to spread it evenly all over the top of the tank of fresh parchment when pulping is completed and then allow it to drain down through the tank.

ALTERNATIVE COFFEE PROCESSING METHODS



Quality of Coffee Processed by Methods

Sample source	Quality		
	Raw	Roast	Overall
<i>Coffee cherry</i>			
Over ripe	5.0 a	4.2 a	5.7 a
Ripe	5.1 a	4.3 a	5.7 a
<i>Parchment</i>			
Mucilage coated	5.1 a	4.2 a	5.3 b
Demucilaged	4.3 bc	3.5 cd	4.1 e
Fermented ⁿ	4.4 bc	3.8 bc	4.5 c
Fermented ^e	4.6 b	3.8 b	4.4 cd
Dumucilaged/Soaked	4.2 c	3.0 e	4.0 e
Fermented ⁿ /Soaked	4.3 bc	3.3 de	4.1 e
Fermented ^e /Soaked	4.1 c	3.3 de	4.2 e



Comparison of the methods

Quality	Sample source	
	Best	Good
Raw Appearance	Fermented ^e /Soaked Demucilaged/Soaked	Over ripe Ripe cherry Mucilage coated P.
Roast	Demucilaged/Soaked Fermented ^e /Soaked Fermented ⁿ /Soaked	Over ripe Ripe cherry Mucilage coated P.
Overall	Demucilaged/Soaked Fermented ^e /Soaked Fermented ⁿ /Soaked Demucilaged	Over ripe Ripe cherry Mucilage coated P.



Conclusion

- Wet coffee processing produced higher quality coffee than the dry processing,
- Soaking is an important component of the wet method of coffee processing,
- Dry processed coffee is also important particularly where the wet method is not possible,
- Dry processing can be considered if the destination market wants such coffee.



Thank you for listening



Moulds in the processed coffee

Samples & Fungi	Processing methods
Analyzed samples	621
Black, Yellow, Green, Brown <i>Aspergillus</i> (%)	5
Penclilium (%)	48



DIFFERENT METHODS FOR PROCESSING COFFEE

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Recommendations

Economic appraisal of the coffee processing methods,

Grading of coffee cherry.

Development of processing plant models for the small estates



Coffee processing methods

Coffee samples		Process stages				
	Sn	Pulped	Demucilaged	Fermented	Soaked	Dried
Overripe c.	1					
Ripe Cherry	2					
	3					
	4		Demucilage			
	5		Demucilage			
	6			Normal		
	7			Normal		
	8			Enhanced		
	9			Enhanced		

Critical stages

- **Skin Drying (55 - 45% MC)**
 - 2.5 cm parchment layer,
 - Removes surface moisture and that between bean and parchment,
 - Quickly, rapidly and ends on the day of final grading.
 - Without heating parchment.
- **White Stage of drying (45% - 30% MC):**
 - Not to be strongly irradiated to avoid cracking of parchment.
 - Slow drying and can be done under shade during the hottest hours of the day.



Critical stages

- **Medium black stage (20% - 16% MC)**
- Double the drying depth from 2.5 cm to 5 cm or combine parchment from 2 tables into 1.
- **Conditioning (11.0% - 10.5%MC)**
- Mixed dryness is also a major fault,
- Under dry is unstable, causes rapid fading of bean colour and mould formation,
- Over-drying leads to unnecessary weight losses and quality degradation,
- Parchment beans are pale yellow,
- Tend to re-absorb moisture to an inferior quality status.

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