

COFFEE PROCESSING pdf

COFFEE processing

Wet processing represents the primary processing of coffee when the cherry is delivered to the society by individual farmers, or processed by small and medium coffee growers. It involves separating the coffee beans from red coated pulp through pulping. The ripe berries are transported to the factory where they are weighed. They are then taken through a pulp machine which removes the red pulp from the cherry to parchment coffee covering pulp.



Cooperative farmers are required by law to aggregate their coffee produced and process in coffee factory for economies of scale. They are also cautioned not to divert the coffee produce to informal dealing such as hawking, selling direct to millers.

The pulper and the pre-grader should be adjusted, repaired and tested prior to the season's pulping.

Cherry should be pulped the same day it is harvested. Processing water must be clean and free of colour, tastes and odours.

Pre-grade the coffee into parchments 1 (heavy), parchment 2 (seconds) and lights. The velocity of the water flows regulate coffee grading at this stage.

Re-circulate processing water to enhance the subsequent fermentation stage.

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Fermentation

Fermentation breaks down the mucilage into simple non-sticky substances, which are easily washed off. The removal of mucilage is important because it is sticky, inhibits drying, attracts dust, makes handling difficult and is a good media for spoilage micro organisms to thrive on. The best practises in fermentation includes; Fermented the different grades of parchment in separate fermentation tanks, Practice intermediate washing during fermentation, gritty feel of the parchment with the hand marks completion of fermentation process. Never allow the fermentation of parchment for a longer time than necessary; never use the fermentation tanks as a temporary store for wet parchment

Final washing, soaking and Grading

This involves use of clean water to Wash the parchment thoroughly to ensure complete removal of mucilage. This is done in the, channels, paddles and dikes during washing and grading.caution should be put in place and avoid perfumes or drugs like cigarettes are not permitted. Ensure complete separation



of the different parchment grades.

Soak parchment in clean water for should be done between 16-24 hours to improve the quality. The soaking water should be changed every morning.

Drying



The first stage in drying of parchments is the removal of surface water. The skin drying should be done within the shortest time possible. Less than a day.

The parchment should be transferred to the final drying tables on the same day. Should not be left overnight. one inch (2.5 cm) parchment layer maximum per drying table, the defective beans since they are easily distinguished during the skin drying stage

The metallic drying tables should be painted regularly to avoid rusting of metal. Wooden tables should be repaired and be in clean condition and absolutely flat for even drying.

Final drying stage

Soft Black stage (30 -20% moisture content)

Sunlight is very essential, final bluish green bean colour formed at this stage. Mechanical drying not recommended. the parchment should be Exposed to sunlight at least for 2 days (≥ 50 hr sunshine) to improve bean colour. Drying depth should be 2.5 cm, but may be increased to 5.0 cm. Temporary storage in ventilated bins is permitted (to ease congestion at the drying tables).

Medium Black stage (20 – 16 %) M.C

Beans are fairly hard and Parchment can be dried rapidly without loss in quality using either the sun or mechanical driers. The parchment can also be heaped safely to a depth of 5cm. In case of congestion, the parchment can temporarily be stored in ventilated bins to create space and be taken out later for final drying.

Hard black stage (16 – 11%) MC

Beans are Fully hard and Can be dried rapidly without loss in quality. Mechanical drying can be done if there is limited drying space.

Conditioning (11 – 10.5 %)

Conditioning is done in ventilated stores or bins. At this stage the beans are dry and cannot suffer any quality loss if the relative humidity is maintained at 60%.

Avoid over drying parchment to safeguard against fading and moisture re-absorption during storage



A well dried parchment should contain 11-10.5 MC

Mechanica drying

This involves drying of parchment using electricity driven machine .thises reduses the number of day

Storage and Packaging

The parchments should be stored only under controlled but adequate ventilation. The roof must also provide adequate insulation in order to minimise heat transfer.



Parchment should be Protected from water and dust and coffee bags should be putted on wooden pallets 15 cm away from either wall or floor surface.

The ideal storage temperatures and relative humidity are 22°C and 50-70% respectively with minimal fluctuations.

Buni

Buni is naturally processed through sundried. It's usually undergoes the same process as parchment.

~~There are two grades mainly in MH and ML. the MH is regarded the high quality grade~~

Milling (Secondary processing)

The purpose of primary coffee processing is to transform cherry to parchment ready for secondary processing

Milling represents the secondary processing when the coffee parchments is delivered into the mill Plant; by either the coffee cooperative societies, estate growers and large scale plantation.

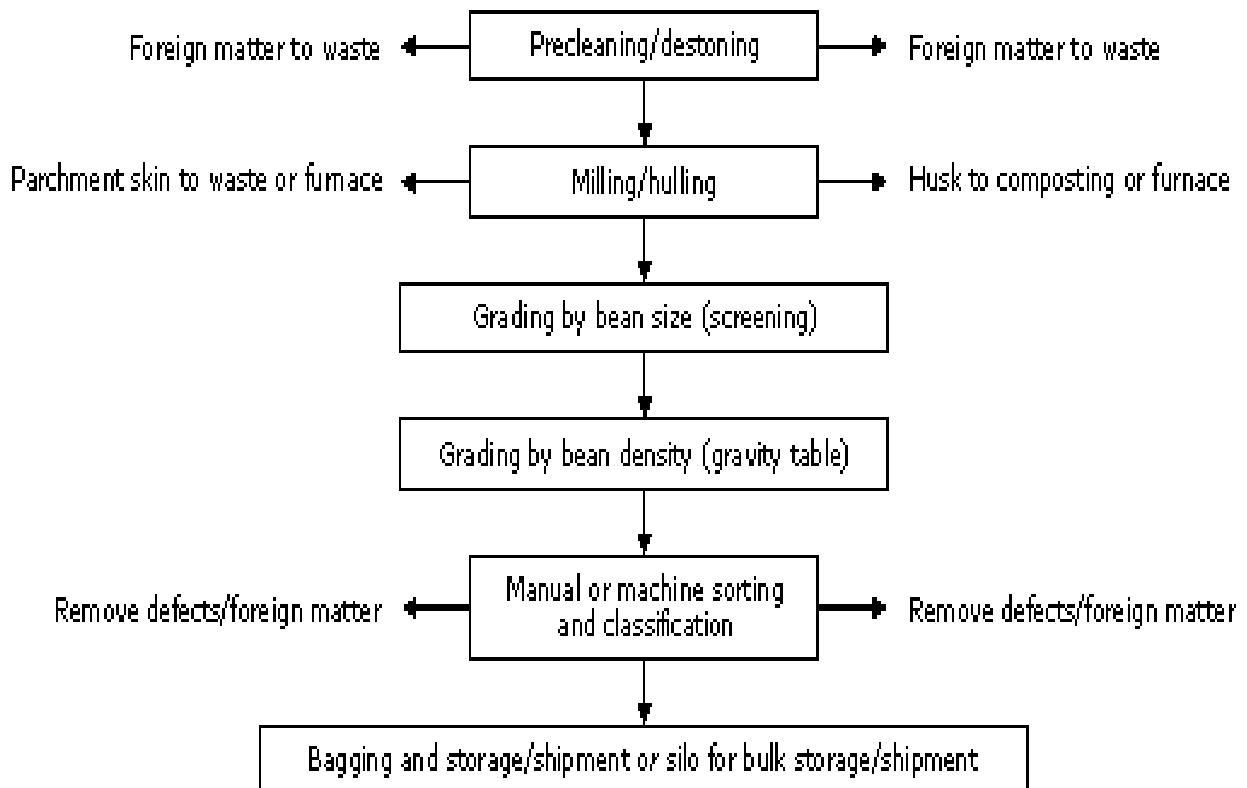
Coffee societies are required to appoints a miller annually from a list of licensed miller by the coffee board of Kenya .

Through union, coffee societies have installed their own milling machine and cooperatives are encouraged to follow the suite to maximize the returns.

Coffee milling involves two stages, namely the removal of impurities through use of screens, magnetic separation of any metal pieces and pneumatic system to remove light materials. This is followed by hulling of the parchment or buni to remove husk and polishing to remove silver skin from the clean bean surface.

The other second stage is mechanical grading which separate the clean coffee beans into different grade based on size, shape and weight of the clean bean.

The following activities and process are involved in milling plant;



Grading in Kenya

Kenya AA is popular in the world among Other Grades such as AB, PB. Kenya coffee is graded in 7 as follows. The type and proportion of these grades depends on coffee production practices in the farm and primary processing.

The best quality coffee comes from premium grade AA,AB,PB AND E.

Buni is either classified as MH and ML. the MH is regarded the high quality grade

Screen number	10	12	13	14	15	16	17	18	19	21
ISO dimensions (mm)	4.0	4.75	5.00	5.6	6.00	6.35	6.70	7.10	7.50	8.35
GRADES	T	C	PB	TT		AB		AA		E

- A seventh Grade, TT is obtained by passing flows from AA, AB and PB coffee through a vibrating screen (Density screen).
- PB is separated using a special v shaped screen

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