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Course name :

**Crop Production Technology-II
(ASAG 2204)**

Course credit :

(2-1-0)

Lecture 20

Topic: TOBACCO

PRIMING



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- In tobacco , generally lower leaves mature first followed by upper ones.
- Therefore, when it is essential for quality that all the leaves at harvest should be correct maturity, harvesting is done by removing few leaves as and when they mature.
- This method of harvesting is called **priming**.
- Harvesting starts from bottom and each time 2 or 3 leaves are harvested at weekly intervals .
- The entire harvest is completed in about 5-6 primings. This method of harvest is followed in case of **cigarette and wrapper tobaccos**.
- After harvesting, the leaves are strung on bamboo sticks at the rate of 100 leaves / stick and loaded in barn for curing.



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STALK CUT METHOD

- Hookah, bidi, cigar and chewing tobaccos are harvested by this method.
- In this method the entire plant is cut to the ground with sickle and left overnight in the field for wilting.
- The bidi tobacco is ready for harvest when the majority of the **top leaves develop red rusty spots known as spangles.**
- The cigar and cheroot tobaccos are generally harvested when the leaves turn **yellowish-green and become brittle which break on folding.**
- Hookah tobacco is harvested when there is indication of **yellowish – brown spots of puckering on leaves.**



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CURING

- Curing is essentially a drying process whereby most of the moisture in the green leaf is removed.
- However, this process of drying is conducted in such a way as to produce certain well defined and desirable qualities in different types of tobacco.
- A bad leaf produced on field cannot be improved by curing; but a good leaf can be spoiled by bad and defective curing.
- The process of curing has an intimate bearing on the quality of the final produce.
- During the progress of curing, some important biochemical changes take place.



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- The curing operations followed in India are dependent on several factors, such as tradition, convenience, market value of the crop, consideration of economic production, etc.
- Depending on the type of tobacco, four principal methods of curing can be distinguished, namely,
 - i) Flue -curing,**
 - ii) Air-curing,**
 - iii) Fire-curing and**
 - iv) Sun-curing.**

AIR CURING



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- The matured leaves are primed and kept around the plant. The primed leaves are tied in to bunches of 8 to 10 leaves and cured on bamboo splinters in curing sheds for 4 to 6 weeks.
- Various indigenous tobaccos are subjected to air-curing.
- Most prominent among them are; wrapper tobacco of West Bengal, lanka tobacco and Burley tobacco grown in Andhra Pradesh.
- The process is rather slow and takes 6-8 weeks.
- Generally air-cured tobacco is dark brown in colour with lower levels of sugars and rich in nitrogenous constituents.
- Wrapper tobacco is harvested .



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The leaves are divided in to groups according to their size and are strung on a sting secured on a bamboo stick.

These sticks are taken to barn with closed sides and roof.

RH of 70-80 % is maintained by sprinkling of water inside the barn.

This process is completed in about 5-6 weeks.

Lanka tobacco leaves in AP are strung on ropes in a shade for 8-10 weeks.

During this period the leaves turn yellowish- brown.

After this process the leaves are placed in a pit for 24 hrs and then transferred to the second pit for 48 hrs and then back to 1st pit for 24-48 hrs.

Fermentation of leaf occurs during pit curing.



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After curing, the leaves attain a dark brown colour and fruit smell.





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31.3.2 SUN-CURING:

- In India, a number of tobaccos are Sun-cured. In this method construction of costly structures are avoided.
- The process is relatively quick (2-3 weeks) and there is little interference from weather changes.
- **After initial wilting in the field , Leaves are stung to bamboo poles and sun cured for 15 to 20 days.**
- There are many modifications of Sun-curing.
 - a. **Curing whole plant on racks:** Cigar and chewing tobaccos of Tamil Nadu.
 - b. **Curing leaves together with pieces of stalk on racks:** Natu tobacco in Andhra Pradesh.
 - c. **Curing whole plant on the ground:** Bidi tobacco of Gujarat, Hookah and chewing tobacco in Bihar.
 - d. **Curing primed leaves on the ground:** Chewing tobacco in Uttar Pradesh and Hookah tobacco in West Bengal.



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FIRE -CURING: (SMOKE CURING)

- Important type of tobacco that is fire-cured is **Jaffna tobacco of Ceylon and Tamil Nadu used for chewing purpose.**
- The leaf is harvested by either **priming or stalk-cutting** each leaf together with a portion of the stem.
- The leaves are **wilted** for four hours in the field, **tied into bundles and hung of laths in smoke huts.**
- They are then **smoked for 12 hours** by burning coconut husks, leaf stalks and palmyrah nuts, **stacked for 3 days and again smoked.**



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- **Alteration of firing and stacking at an interval of few days helps in making the colour of leaf uniform.**
- During the smoke treatment, creosotic substances are deposited on leaf surface imparting a peculiar taste.
- After smoking, the leaves are **bulked for 3-4 weeks and treated with salt water/jaggery prior to sale.**



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FLUE CURING

- Flue curing tobacco is raised with low level of nitrogen and harvested by priming method.
- Harvested leaves are strung on sticks which are then stacked in to flue curing barn.
- Barn is artificially heated.
- **Green leaves should be loaded in upper half of the barn and the lighter ones in the lower half.**

The three steps are

1. Yellowing
2. Fixing the color
3. Drying



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YELLOWING

During yellowing , leaf is kept at a low temperature and high humidity for about 30-40 hrs till it attains a bright lemon yellow colour.



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FIXING COLOUR

- After yellowing the temperature is raised gradually and humidity of barn is lowered by opening the ventilators
- Great care is required in raising the temperature during this stage.
- It is raised by not more than 1-2 °F every hour.
- **With rapid rise in temperature ,when the leaf is still wet , results in a bluish- black discolouration called Scalding.**
- It takes about 16-24 hrs.



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DRYING

- It may last from 28-42 hrs.
- Ventilators are closed and temperature is again gradually raised to 160 °F to dry the veins and midribs of the leaves.
- This completes the process.
- Now ventilators are opened to cool down the barn.
- The leaves are left in barn overnight for absorbing moisture and to come to normal condition for handling and storage.



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Flue Cured Virginia (FCV)





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Grading

After curing, leaves are graded by sorting leaves into uniform lots according to body, color and degree of blemish or damage. Most important elements of quality in FCV tobacco are color, texture, size, blemish, strength, even burning with white ash and agreeable flavor.