

## A NOTE ON PRECAUTIONS TO BE TAKEN IN THE CURING AND STORING OF TOBACCO.

BY P. GOPALARATNAM, L. Ag.

*Farm Manager, Agricultural Research Station, Guntur.*

Tobacco in its curing and storing stages is subject to being damaged by attacks of fungi and bacteria which if not controlled properly at the right time will result in serious loss to the producer as well as to the manufacturer. The diseases are peculiar in themselves and occur sporadically due to the negligence on the part of the curer and storer. The nature of the diseases and the possible remedial measures are enumerated below for the benefit of the producer and manufacturer of tobacco.

**White veins.** In hot places like Guntur, continuous spell of dry weather causes the appearance of white-veins in the barn. The white veins are due to the outer cells of tobacco leaf getting killed soon, by the rapid drying of the leaf. Such leaves allow the admission of air under the epidermis and appear to be devoid of the colouring matter (chlorophyll) in leaf. This condition reduces the value of the leaves for wrappers but seldom for any other purpose. The keeping of the air in the barn slightly humid in dry weather by sprinkling water on the floor may be tried as a preventive measure.

**Pole-burn.** This is also known as pole-sweat or house-burn. This is due to excess of humidity in the barn in prolonged warm weather and is first noted by the appearance of small dark spots near the base and mid-rib of the leaf. The spots rapidly increase in size and number, and in a short time become confluent. Within the course of 48 hours all the leaves in the curing barn may be affected and destroyed. As a result, the tobacco becomes dark in colour and thoroughly decayed. The decay is due to the presence of a bacterium that gains access to the leaf through wounds on the surface or through the openings made by fungus growths. A reduction of humidity and rise of temperature to 110° F. can put an end to its action. Hence this can be controlled by the judicious regulation of temperature and humidity of the room, with the aid of heating apparatus and ventilators.

**Saltpetre.** At times while curing and in the process of fermentation a saline efflorescence, caused by the presence in the leaf of large quantities of salts such as potassium, sodium, calcium, and magnesium tends to make the tobacco appear as if attacked by mould. The best way of overcoming the difficulty is to brush the surface of the leaf and spray on it a 4% solution of acetic acid. This removes the deposit.

**Moulds and Rots in cured tobacco.** The presence of moisture in the cured leaf at the time of storage favours the growth of rots and moulds. The storage room must be kept clean and warm.

In the case of black rot, the affected tobacco leaf has to be subjected to the forced sweating to kill the fungus and drive away the musty odour. There are special air tight rooms constructed and steam is let in it through a metal tubing with a big nozzle attached. Thus the tobacco is subjected to hot air and steam whereby the fungus as well as the spores are killed. The duration of heating depends on the nature of the attack and the quantity of the stuff handled. The tobacco treated for a long time deteriorates to a certain extent. There is a room of this type at Cheerala in the tobacco factory of Messrs. India Leaf Tobacco Development Coy. The trouble, though it may not appear to be serious, causes a good deal of loss in big godowns, if proper care is not taken at the outset.

## Research Notes.

### Male Sterility in Rice.

During the season of 1932-33, a sterile plant was spotted out in the seed multiplication block of the pure line G. E. B., 24, characterised by a protracted growing habit, with non-emergent panicles bearing spikelets which failed to open and contained considerably reduced and non-dehiscent anthers. The pollen when examined was all aborted, there being no normal grains. The plant, however, set a dozen seeds, which in the succeeding season gave rise to normal individuals with perfect pollen and good seed-setting. When the dozen plants were cultured the following year, segregation of normal and sterile plants was noted in the progenies, the original mutant type coming out as a simple recessive, as shown by the figures in the table.

	Normal	Male-sterile	
Total in 10 segregating families	838	287	
Calculated 3:1	844	281	Dev 0.97 S. E

The sterile mutant is designated as 'Male-sterile' on an analogy with similar recessive mutants recorded in maize (Eyster 1921). These are easily distinguished in the field from the normals by their characteristic appearance there being no intermediate types. Each plant sets about 10-15 seeds, due to cross-fertilisation by fertile pollen from contiguous normal plants, which gave rise to heterozygous individuals resembling the normals.

Cytological examination of pollen meiosis carried out to ascertain the cause of sterility revealed no apparent irregularities at reduction division, but the spores degenerated following a fairly normal sporogenesis. It may be stated here that this mutant closely resembles another 'the asynaptic mutant' (Unpub) isolated in another strain where the sterility affects both the pollen and ovule and is the result of irregularities of chromosome behaviour at meiosis brought about by lack of pairing of chromosomes at meiosis.

Agricultural Research Institute,  
Coimbatore.

S. Ramamujam,  
Assistant to the Paddy Specialist.

\* Eyster L. A. 1921. *Heritable characters of maize* VII, Male-Sterile—*Jour. Heredity* 12: 138-141.