

TOBACCO CURING.*

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Curing.

After the plants have been cut and hung up in pairs on the rails to dry, one must wait from 35 to 50 days before the leaves and their stems are perfectly dry. The time for drying may differ greatly, as it depends on the weather. If the weather is cold and damp, it is best to keep charcoal fires burning between the several rooms in the barn to keep the air circulating as much as possible. A damp, clammy atmosphere in a barn will cause the tobacco to sweat and great care must be taken to prevent this taking place, as once sweating starts it is difficult to prevent it from going through the whole barn and so spoiling all the tobacco. If one has sunny days, it is best to hang the affected rails out in the sun for a few hours to check the sweating. On fine days, the barn should be open to air as much as possible during the day, so that it is best to have shutters made at either end of the barn to allow of their being opened and ensuring a good current of air going through the barn. After cutting the green tobacco and hanging it on the rails, it is sometimes worth while putting the rails outside in the sun for a short time, or in a place out in the open with not too much sun for a couple of days, to allow the plants to quail properly and also to prevent sweating and to hasten on the drying process. The rails should not be left out in the rain. The idea is to get the plants as free from moisture as possible before hanging them up in the barn, thus keeping the interior of the barn as free from moisture as possible.

When the tobacco leaves are quite dry and their stems are dry right up to where they join the main plant stalk, one can start stripping. The early morning is the right time to start taking the pairs of plants from the rails. About 24 pairs to a rail 12 feet long are usual, so when taking down, string up 12 pairs together, lift off the rail and place in a cool spot on the floor of the "press," or place where the fermenting is to take place, and cover over with sacking or banana matting. That is, from each rail make two big bundles of plants. When the necessary quantity has been taken down, start making a "stick press," that is, the bundles of plants with their dried leaves still hanging to them are placed in a staple with their heads or tops towards the centre and the stalk end, by which they have been hanging, outwards. This ensures that all the leaves are inside the staple or press, and as they have been taken down in the early morning they are supple and will remain so until the stripping begins. Do not keep the plants in this press more than a night or two, but start stripping as soon as possible, as fermentation will start and it is better not to ferment the tobacco while the plant stalks are still green, otherwise the leaves soak up so much moisture that it is difficult to get them dry again. When the leaves are stripped, it is better to grade for length at once, if possible, and then make them into heads of 40 to 45 leaves. These heads should be kept covered as much as possible to keep them supple, otherwise they will dry out, and be difficult to ferment properly. When a good quantity of heads is ready, they should be stapled together in a pile (pilon) from 5 feet by 5 feet to 9 feet by 9 feet and 5 feet high. Naturally, the size of the pilon

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depends on the quantity. When about 3 feet high, a hollow bamboo large enough to allow a thermometer to pass easily down its centre, should be placed on the layer of tobacco in the pylon. One end of the bamboo is in the middle of the pylon, and the other end sticks out 6 inches from the side of the pylon. A straight bamboo of about $1\frac{1}{2}$ inches in diameter should be used and the partition between the hollow joints should be cut out with a chisel. To do this a small opening about 3 inches long and $\frac{3}{4}$ inch wide must be made at one side of the bamboo. These openings are also necessary to allow the heat from the tobacco to reach the thermometer, which must be put down the bamboo to the centre of the pylon. It is best to tie the thermometer to a strip of bamboo which can easily be pulled up or pushed down the hollow bamboo. The bulb end of the thermometer must be nearest the centre of the pylon. Then continue stapling the tobacco on top of the bamboo until the required height of 5 feet is reached. Then insert the thermometer, and cover the pylon with sacking or matting. The fermentation will start almost the first day, and every morning the thermometer must be read and a note kept of the reading. The fermentation can go on until a temperature of 130° F. has been reached, but it must not be allowed to go higher, so if one sees that it is likely to go higher in the night, the pylon must be opened up that day and turned. All the tobacco forming the sides of the pylon, two or three layers from the top and bottom, have not had any heat, so this tobacco must be put aside and later on when rebuilding the staple or pylon, it must be put in the middle, to be sure that it gets its fair share of fermentation. Turning a pylon must be done as quickly as possible, so that as little heat as possible is lost. Pylons should be built on plank floors, so it is best to have one compartment in the barn with a wooden floor raised at least 6 inches from the ground, and also the sides should be of boards or wattle plastered with mud. The method of stapling or stacking the heads of tobacco leaves is quite simple. First start a row outside completing the full size of the pylon, then about 3 inches inside this row start another row, the heads always being outwards and the tips of the leaves inwards. When these two outside rows are completed, start stapling across with the heads pointing outwards and go on doing this, making the straight rows about 3 inches apart, until the centre of the pylon is reached. Then start at the other side doing the same thing until the whole of the first layer is complete. Start the second and succeeding layers the same way and the cross rows as well, so that the pylon is composed of so many layers of tobacco, built up to 5 feet high.

Barns or Tobacco Houses.

These should be built of wooden posts with wattled sides and thatched roofs. All interior wood not coming in contact with the ground may be of softer woods, although the cross-pieces, upon which the bars or rails are to rest, must be strong, as the weight of the green plants is fairly heavy.

It has always been said that one room per acre is sufficient, but with more modern methods of cultivation and consequently better sized plants, it is safer to have two rooms to the acre, and so have plenty of room to space the rails properly and dry the tobacco more quickly. The size of a barn for one acre should be then 33 feet by 27 feet by 24 feet high at the ridge pole, and 9 feet high at the plate (i.e., outside posts). The length of 33 feet is made up as follows: 3 feet, 12 feet, 3 feet, 12 feet, 3 feet. The 3-ft. spaces are walk-ways to enable one to move freely between the rooms when moving the rails. The 12-ft. spaces are the rooms, where

the tobacco is to hang. In breadth, the rooms are 27 feet with a centre walk-way of 3 feet. On every row of posts across the breadth of the barn, cross-pieces must be put up at 3-ft. intervals, upon which the bamboo rails are to hang. The ends of the barns may be thatched to within 6 feet of the ground, that is, as far as the wattling, and two or three shutters, which can easily be opened or closed as required, should be made in the side thatching. For each room 125 to 130 bamboo rails are required, so for one acre, 300 bamboo rails are more than enough. The extra rails are always handy in case of breakages and if the crop is extra large. With large-sized plants it is best to space them at 1-ft. intervals on the rails; in this case 125 rails per room are necessary and these will hold 6,000 plants. One corner must be set aside to make room for a watchman and the "press", wherein the tobacco will be stored for fermentation, as explained previously.

PRODUCER GAS UNITS.

Apart from their importance in a time of national emergency, producer gas units cost so little to run that they are considered a sound investment at all times.

The making of producer gas consists essentially in drawing air through a bed of red-hot charcoal and in the following article in this issue, a clear and simple explanation of the use of producer gas for all types of road-transport vehicles is given.

Charcoal, for the production of producer gas, is usually made by completely carbonizing pieces of hardwood. Charcoal made from coco-nut shells has not been used to any extent, although it is being tested by a prominent firm in Rabaul with very satisfactory results.

Following the article on "Producer Gas" in this issue is an article on the preparation of high-grade charcoal from coco-nut shell. Wood charcoal is prepared in a similar manner.

From exhaustive tests, carried out in New South Wales, it has been found that two very suitable producer gas units are those manufactured by the following companies, from whom full particulars may be obtained:—

Harkness and Hillier, 155 Parramatta-road, Fivedock, New South Wales, and

The Powell Gas Producers (Aust.) Ltd., 142 Parramatta-road, Camperdown, New South Wales.

In reply to recent inquiries, these units were quoted as follows:—

The H. and H. Producer Gas Units—

	£	s.	d.
Truck unit, less sales tax	85	0	0
Trailer unit, for attachment to cars	135	0	0
Chassis trailer fitting	1	10	0
	136	10	0

The Powell Gas Producer Unit—

	£	s.	d.
Type A (suitable for engines up to 27 h.p. and load up to 4 tons)	85	0	0
Less fitting charges	10	0	0
	75	0	0
Type B (suitable for trucks over 27 h.p. and loads of 5 tons and over)	94	0	0
Less fitting charges	10	0	0
	84	0	0

In supplying these units to New Guinea, they would be accompanied by plans and descriptive matter enabling them to be installed locally.—R.C.H.