PREPARATION OF LAND, TRANSPLANTING, AND AFTER-CULTIVATION OF CIGARETTE TOBACCO

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IT is essential that the tobacco plant should grow vigorously without disturbance after it is transplanted. To achieve this object, the land which is to carry a crop of tobacco should be fertilized and well prepared. The land should be ploughed, cross-ploughed and disc-harrowed, allowing a sufficient interval between the successive operations for the decomposition of green matter ploughed in and for the proper aeration and weathering of the soil. The first ploughing should not be done when the soil is very wet or very dry. The interval between the operations will depend on climatic conditions. The land should be kept free of weeds by occasional harrowings.

Before transplanting, the land should be well levelled and drained. Levelling is best done by using the diamond mesh harrow. The number and the depth of drains will depend on rainfall, but normally drains 1 foot deep and 2 feet wide should be opened on all four sides of every quarter of an acre. After draining, the planting positions are marked out, 3 feet by 3 feet, by means of a hand marker*. One acre of land will carry 4,840 plants. The following fertilizer mixture is used with advantage at Wariyapola Experiment Station :—

84 lb. Nitrate of Soda 140 lb. Sulphate of Potash 224 lb. Superphosphate	per acre

The fertilizers should be mixed just before application. The mixture should be applied in two doses. The first dose should be applied about two or three days before transplanting at the places where the plants are to be put in and the fertilizers well mixed with the soil. The second dose should be applied about four weeks after transplanting ; the fertilizers should then be applied round the plants and forked into the soil lightly.

* Described by C. R. Karunaratne, Dip. Agric. (Poona), in " Agricultural Implements—IV.", *The Tropical Agriculturist*, Vol. LXXXVIII., No. 3, March, 1937

TRANSPLANTING

The seedlings are ready for planting out in the field when they are six to eight weeks old at which stage they should be four to six inches high. The seed beds should be thoroughly soaked before pulling out the plants. Transplanting should be done during cloudy days as less evaporation and consequently less wilting take place under such conditions and the plants will recover more quickly. The most favourable time for transplanting has been found to be during the cool hours of the morning and evening. Select only the stout and healthy seedlings and pull up only sufficient for transplanting in one morning or evening. The seedlings should be sent to the field in baskets.

Make a hole with a short pointed peg or with the forefinger of the hand, put the plant in, taking care to cover all the roots, press down the soil round the plant, water liberally and cover with coconut husks. See that the plants are put in properly, and the roots are firmly packed in the soil. Tobacco plants should be completely shaded for three days, and if there is no rain they should be watered daily, preferably in the evenings. On the fourth day the husks may be separated about two or three inches and so expose the plants to sunshine gradually. Remove the husks entirely when the plants are two weeks old. The vacancies should be supplied within a week in order to get the uniform stand of crop which is so desirable for flue-curing tobacco. If there is no rain, watering should be continued. When the plants have been in the field for about four weeks watering should be done once in two or three days. As the plants grow older watering may be reduced. If plants show any signs of wilting they should be liberally watered.

AFTER-CULTIVATION

About two weeks after transplanting, the plants become well established and cultivation should begin at this time. Tobacco requires a fine, loose, well-drained soil and, if good yields are looked for, cultivation after transplanting is essential. This operation will also destroy the annual weeds which may spring up with the rains. The first cultivation should be deep, but it should not be too close to the rows as there is a danger of disturbing the young plants. This operation will break up the superficial crust on the soil. Subsequent cultivations should be more shallow as the plants develop, because deep cultivation will cause damage by cutting off many of the small roots. The number and frequency of cultivations will depend on soil and

climate. Cultivation should cease when the leaves spread sufficiently between the rows to obstruct the free passage of the cultivator or the labourer.

TOP DRESSING WITH NITROGENOUS FERTILIZERS

Backward and more anaemic plants may be given a dose of nitrate of soda as a top dressing at the rate of 100 lb. per acre.

PRIMING

When the plants are twelve inches high, all the sand leaves are removed. Sand leaves are of no value and their removal induces the more rapid growth of the plant by allowing a free circulation of air at the base of the plant. This operation may also check the spread of the frog-eye in the field. A second priming should be done just before topping. The sand leaves should be destroyed by burning.

TOPPING

Topping is the name given to the operation by which the terminal bud is removed. The proper stage for doing this, and where to do it are points requiring careful judgment and experience. The height at which a plant is topped has an important bearing on the quality of the leaf and it is advisable to top slightly higher for flue-curing than for air-curing. The height at which a plant should be topped naturally depends on the growth of the plant and its development of leaves. A robust plant will carry more leaves than a smaller one. A well-developed plant should carry about sixteen to eighteen leaves. If the plant grows coarse and rank, do not top at all or, if the growth is coarse but not very coarse, topping may be done, but suckering should not be carried out. Topping should be done while the stem of the plant is still soft and juicy and should never be delayed till the flower heads develop. Topping may have to be done several times on the same field as all the plants do not develop their flower heads at the same time.

SUCKERING

Suckering is the removal of young shoots which appear in the axils of the leaves after topping. About ten days after topping suckers will appear in the axils of the leaves and it is essential that these be removed as soon as possible as they drain the food store from the older leaves, leaving them thin and papery. A tobacco crop for flue-curing has to be suckered

about two to three times before harvest. If, on the other hand, a period of wet weather comes at the harvest time the suckers may be allowed to grow temporarily.

CLIMATE

Both quality and yield of cigarette tobacco are greatly influenced by climatic conditions. For producing the best quality of cigarette tobacco rainfall should be moderate. The rain should be well distributed throughout the growing period of the crop, there should be light showers during the ripening and the harvesting period. There should also be plenty of sunshine during the growing period. Cigarette tobacco of the best quality can only be produced in seasons of normal rainfall and temperature.

SOILS

Tobacco can be grown on any soil, provided it is well-drained and the climatic conditions are favourable, but for profitable cigarette-tobacco-growing the right type of soil must be selected. The ideal soils for growing cigarette tobacco are light, infertile sandy loams.

COST OF CULTIVATION OF AN ACRE OF LAND

	Description	Labour: Men	Labour: Women	Labour: Boys	Cost. Rs. c.	No. of Units
1.	Preparation of nursery, &c.	10	—	½	5 32	10½
2.	Ploughing and harrowing	4½	—	—	2 94	4½
3.	Levelling and draining	7	½	3	4 93	10½
4.	Marking and pegging	3	—	3½	2 92	6½
5.	Shading	3½	1	4½	3 87	9
6.	Transplanting and supplying vacancies	7½	—	11	8 22	18½
7.	Watering	11½	—	4	7 46	15½
8.	Weeding	6	11½	6½	8 96	24
9.	Cost of fertilizers, manuring and cultivation	20½	—	14	15 88	34½
10.	Pest and disease works	7	—	19	11 01	26
11.	Priming, topping and suckering	5	—	4	4 10	9
12.	Harvesting and curing	22½	1	6½	14 18	30
13.	Grading	5	½	½	2 78	6
14.	Tying tobacco into hands and bulking	4	—	½	2 10	4½
15.	Uprooting of tobacco stumps	6	—	—	3 0	6
	Total	123	14½	77½	97 67	215