

soil has become depleted in the special demands of the Burley variety. Too many growers do not realize the importance of a short rotation of crops.

*Nature of seed beds and methods of establishment.*—There are more methods in vogue in regard to the establishment of seed beds than in any other branch of tobacco culture, and coupled with this we have a very varying degree of success. I might say that each grower has his particular method, scarcely two adjoining neighbours adopting the same.

The failures attending the rearing of plants are numerous, to say the least. A grower may prepare his beds in a particular way one year, and the following year take the same precaution and have no plants. Some particular seed, soil or manure used, the quantities of each used, or the too frequent establishment of the bed in the same place, may cause the grower a great deal of trouble.

The strongest and healthiest plants I found were grown in the bush, and are known as bush plants. The above were later in maturing than those reared in the hot-bed, but withstand unfavourable conditions of transplanting better, and adapt themselves to their new environment more easily.

The method commonly adopted in getting these plants is very simple. Late in summer or early in fall the area of ground which is generally on the south side of the wood lot, is cleaned up by burning brush or old logs on the selected ground. This practice kills all the weed seeds and insect pupæ, besides giving a nice ash bed, which is rich in potash. In the spring, as soon as the ground is warm enough to favour the growth, it is ploughed or thoroughly spaded up, a nice fine seed bed made and the seed sown. Some growers protect the bed with cotton by having stakes at intervals to support the cover, but the majority grow the plants in the open without any cover tops. Fewer failures attend this method than any other brought to my notice.

The common practice in establishing seed beds is to choose a convenient location in a well sheltered spot, then to remove the soil to a depth of from 4 to 8 inches, to put in a few inches of hog manure or a mixture of hog and hen manure and to replace the soil removed, to make a fine surface layer and to sow the seed. In many cases the latter is mixed with dry sand or ashes in order to get a more even distribution in sowing. In following this method, probably the first year there will be a good stand of plants, and it may be that the beds prepared in a like manner will give fairly good results the second year. But, as far as I could learn, in nine cases out of ten, the grower could not get strong plants if the system was followed during a third season, particularly if he were trying to rear White Burley plants. Numerous failures, where the leaves turned yellow, developed dark roots and finally died, were due to the rigid following of this method. This system would be more satisfactory in growing the cigar-type plants, but the White Burley plants should not be grown longer than one year in the same bed without change of soil. It seems to me that a large number of the failures in rearing plants are due to this simple practical error.

In a few cases the warm bed was used rather than the half warm bed mentioned above. In establishing this bed pure horse manure was made use of rather than hog or hen manure. This system, where judiciously practised, seemed to give fair results, the plants being obtained quite early.

However, I found that when well rotted manure was applied in the fall that the best results, at all events, the least varying results, were obtained. By covering the already prepared soil with a thick layer of well rotted hog manure, or a mixture of hog and cattle manure, and allowing it to leach down through the soil, the ingredients of the manure become incorporated in this medium. Very often finely cut tobacco stalks were added to the above preparation. In the spring the manure was thoroughly mixed with the soil, or, if there was too much coarse material, it was raked off, then the soil was spaded up and the seed sown. In rare instances the growers have added to the surface of the common clay loam a thin layer of bush virgin soil. In watering,