Growing Better Tobacco

Proper application of knowledge concerning the nutritional requirements of tobacco is an important factor in the production of better crops.

J. E. McMurtrey, Jr.

Tobacco is grown commercially in certain well defined areas where the soils and climate have been found to produce the desired quality of product. The varieties grown, as well as the cultural and handling procedures (9, 11), must be adapted to give a cured leaf tobacco which is acceptable to the trade. There is possibly no other field crop grown which requires a higher degree of specialization. The small seedling requires special attention from germination to the transplanting stage. Field culture must follow the cropping system best adapted to the plant, and the fertilizers to be used require the right composition, method, rate and time of application to produce a satisfactory and profitable crop. Curing procedures vary with the type of leaf grown and should be understood by the grower to give leaf tobacco of good quality.

It has become increasingly difficult in recent years (1, 14) to produce an abundant supply of healthy tobacco seedlings for transplanting. There are many factors involved, among which is the prevalence of several diseases, notably blue mold (Peronospora tabacina) and sometimes bacterial leaf spots (Phytomonas tabaci and P. angulata). Due partly to these diseases and to scarcity of suitable wooded areas, seedbeds have been located, in increasing numbers, in open fields on soils which have a low moisture, fertility and organic matter content. There is usually little or no protection from chilling winds, and there is a greater potential weed hazard.

A permanent seedbed is desirable from many standpoints, for a suitable location can be provided with water and wind-breaks. This type of location necessitates some form of sterilization of the soil to control weeds and diseases, and it has been found possible to maintain a bed for 30 years in the same location, using steam sterilization (13, 14) by the inverted pan method. Steaming with buried tile (1) has also given good results. Since steam boilers are not commonly available, substitute procedures have been sought, and it has been found that certain chemicals can be used for a period of five years in the same location, at least on good sandy loam soils.

These chemicals, calcium cyanamide (1, 3) and urea at 1 pound, or a combination of ½ pound of the former and 1 pound of the latter, per square yard of seedbed area, have given good control of weeds, while urea alone and in combination with the cyanamide has controlled root knot (Heterodera marioni) and black root rot (Thielaviopsis basicola). These chemicals have not always given satisfactory results on heavy soils, nor is it evident that they can be used successfully on a permanent seedbed location continuously. They are being used widely at present time on light soils on temporary sites with good results as to weed control.

Effective control of blue mold (2, 7) has been found to be possible by the use of ferric - dimethyl - dithiocarbamate (Fermate) or other materials in a syste-
Fig. 1 (Upper). Chlorine injury to tobacco plants in seedbed. Note glossy leaf surface with the margins rolled inward. Leaves are thick, the plants stunted, until chlorine has been leached out by heavy rainfall.

Fig. 2 (Lower). Tobacco seedlings grown where two pounds of 4-8-3 fertilizer per square yard were applied prior to seeding, urea as the only source of nitrogen on the left, tankage as the source on the right.