

tobacco and in a regular rotation rather than immediately before it. As a rule the supply of humus had best be maintained by ploughing under cover crops of rye and sods of timothy and red top grass.

The rotation should be so planned that there is always a crop on the land in winter. This prevents leaching of plant food out of the soil during winter and blowing in the spring. Rye is one of the best winter cover crops for this purpose on flue-cured tobacco lands.

On soils possessing good physical qualities for the production of flue-cured tobacco, but having too great a tendency to produce a rather large, coarse tobacco due to high content of readily available plant food, it would be best to follow tobacco immediately after corn. Corn is a gross feeder and removes large quantities of ammonia that often cause a dark, coarse tobacco.

Soils that are diseased with root rot should not have clover and certain other legumes grown on them as the disease lives on the clover roots as easily as on tobacco roots, but it is not able to live on the roots of the grasses and grains. Rotations in which grasses and grains enter help to keep up the humus supply, and prevent disease.

A four-year rotation of (1) corn, (2) tobacco, (3) grain, and (4) grass would be satisfactory. In this rotation rye should be sown after both corn and tobacco and turned under in the spring in order to keep up the humus supply of the soil. The tobacco would be fertilized with a commercial fertilizer. Manure would be applied to the young grass in the fall after the grain had been harvested.

An excellent rotation in the sections producing early tomatoes would be (1) tobacco, (2) tomatoes, (3) corn, the tobacco to be fertilized with commercial fertilizers and the tomatoes with commercial fertilizers and manure. The corn following the tomato crop would feed on any coarse material left of the manure, and remove any excess of ammonia in the soil leaving it in excellent shape for the tobacco crop. Rye should be sown in the fall after each crop and turned under in the spring. Vetch could be sown with the rye following the tobacco and tomato crops with good results. The three crops recommended being clean cultivated the soil should always be in good tilth and free from weeds.

A three-year rotation for the soils very light in colour and low in humus would be (1st year) tobacco, land manured and fall ploughed and seeded to rye; (2nd year) rye turned under, corn grown, fall ploughed, rye sown; (3rd year) rye turned under, grain spring sown, land fall ploughed, and rye sown. In this rotation the tobacco crop should be fertilized with commercial fertilizer. Rye could be used as a winter cover crop each year, and turned under in the spring provided the grain was to be used for feed. In case of wheat being grown after corn in the rotation it could act as a winter cover crop leaving the rye to be grown for two winters as a cover crop. The objection to rye being fall sown and turned under in the spring before spring sown grain is that it is very hard to kill out all of the rye, and any remaining plants head out and are harvested with the grain. If the grain was used for feeding purposes this would not be a serious objection, but it would not be satisfactory for seed grain. If the rye is not present in too great quantity, it could be pulled out at heading time.

FERTILIZERS FOR FLUE-CURED TOBACCO.

The flue-cured tobacco soils respond readily to fertilizers, and fertilizers give very good returns in increased yields of tobacco if properly balanced and used in sufficient quantity.

A complete fertilizer—that is one containing each of the three materials, ammonia (nitrogen), phosphoric acid, and potash, is needed. These can be bought ready mixed, or the ingredients can be bought and mixed at home.

Broadly speaking, each of these elements has a special effect on the quality of the leaf, and in limiting the yield. Too much ammonia if used with an insufficient amount