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## MODERN TOBACCO GROWERS



News and events about the tobacco industry...from the grower's point of view.

### **TOBACCO GROWS BEST ON A HIGH ROW RIDGE**

by: W. K. Collins

The growth of flue-cured tobacco is best when grown on a high row ridge. Tobacco is a shallow-rooted plant and its roots suffocate from lack of oxygen when the soil is saturated with water for an extended period of time.

A high row ridge aids good drainage encouraging water to drain away from sensitive roots so that they have a better chance of survival. A large root system is a must for the production of good yields of medium-bodied tobacco with good flavor and aroma as well as desirable nicotine content.

The site of nicotine synthesis is in the root system. Poorly developed root systems synthesize less nicotine than if they were more developed. Tobacco plants with poorly developed root systems can be expected to produce neutral-type cured leaf.

The best time to start a high row ridge is before transplanting. An early row ridge is particularly needed when a chemical is used to help control weeds and grass and the number of cultivations is reduced. A normal practice is to push soil towards the row when cultivation is done. An added advantage of the high row ridge on coarse textured soil is the rooftop effect of the row ridge, which helps reduce leaching of nitrogen and potassium from the row by diverting runoff water to row middles and away from the fertilized zone.

Good drainage is most crucial immediately after transplanting, since the first month's growth of tobacco is primarily root development. Good drainage also enables the soil to become warm in the spring, which helps plant growth.

High row ridges are a must for growers who harvest their crops with mechanical harvesters. Poor surface drainage makes it impossible for mechanical harvesters to move through the fields.

Fumigants offer better control on high row ridges than on low ridges. Fumigation chemicals rise up from below the row as they vaporize.

A high row ridge provides the benefits of subsoiling without the costs or risks. Some growers have tried subsoiling to provide room for tobacco roots to grow. Subsoiling in dry weather may be beneficial on certain soil types, but if roots grow into the subsoiled area in wet weather, they may drown.

When roots drown, root hairs and sometime large roots are killed. This injury makes it possible for disease-causing organisms to enter the plant roots.