Recommended Practices Will Help Duplin County Farmers Toward A Better Crop Year

By L. F. WEEKS
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Duplin County tobacco growers now face the biggest challenge in their history.

Diseases, notably black shank, hit the flue-cured crop in Duplin County harder last summer than ever before. A large number of growers tried to get by with non-resistant varieties and in many cases the results were disastrous.

Even the black shank resistant varieties, such as Oxford 1, Oxford 1-181, and Dixie Bright 101, were damaged heavily by attacks of the disease in a few fields. Heavier damage was suffered by the moderately resistant varieties than by the three varieties carrying higher resistance.

As a result, many growers are asking:

"What next? Where do we go from here?"

Research is being continued, and every effort is being made to find varieties with good quality, good yields, and higher disease resistance. But because the problem is complex and such a large volume of work is required to develop even one acceptable variety, progress along these lines is slow at best.

Growers should not expect, in the very near future, varieties with higher resistance than is found in the varieties now available.

What, then, can be done?

The individual farmer can do much to help solve his own problem of tobacco diseases. He can follow practices which research and experience have shown will contribute to success with the crop.

We visited and observed a large number of tobacco fields in Duplin County last summer. We found black shank present in all thirteen townships.

We discovered that Dixie Bright 101 was the predominating black shank resistant variety used by growers, with some acreage planted also to Dixie Bright 102, Oxford 1, and Oxford 1-181.

In general, Dixie Bright 101 has performed very satisfactorily in that good yield, good quality, and satisfactory resistance are in evidence throughout the county. However, in a few instances Dixie Bright 101 as well as other black shank resistant varieties did not live satisfactorily.

In this county where about 800 growers used Dixie Bright 101, about 12 of them lost up to 50 per cent of their tobacco in certain fields.

These percentages of failure or partial failure, although severe in individual cases, were small when compared to the overall performance of resistant varieties.

Examination of fields where resistant varieties did not survive satisfactorily has led us to a number of conclusions. We present them here for the consideration of all growers.

1. No varieties available today can be counted on to live 100 per cent on soils heavily infested with black shank. This has been recognized all along.

However, proper rotation will support the resistance of varieties that are available and will contribute to the successful production of resistant varieties on disease-infested soil. A two-year rotation will help in many cases, but in badly infested soil and where other conditions are unfavorable for tobacco (nematodes, (root knot) wireworm, fertilizer injury, unfavorable weather), a three or four-year rotation will be required in many cases. In case after case this year, we have seen that both resistant and non-resistant varieties survived better in fields where rotation was practiced than in fields where tobacco followed tobacco.

2. In all instances where resistant varieties were found dying to any great extent and where a portion of the field was planted to tobacco after tobacco, there was a striking difference in plant survival as compared to the area in the field where tobacco followed corn. In some instances the same variety had died 50 to 90 per rest of the field, with tobacco following corn, the variety was standing up 90 to 99 per cent.

3. In almost every instance where the loss of a resistant variety was great, there was a heavy infestation of nematodes (root knot). The question arises immediately if the weakened plant with its root system damaged by nematodes is more susceptible and may become infected with black shank in an earlier stage if the plant and root system are healthy. The heavy infestation of the plant roots with nematodes was largely responsible for the rapid ripening and premature firing under the hot dry weather conditions late in the past harvest season.) At any rate, growers are urged to get some experience with soil treatment by treating at least a part of their acreage with DD or Dowfume W-40 where root knot or meadow nematode is bad .

4. With hot, dry weather prevailing during and following transplanting, there was more than the usual amount of fertilizer injury to the root system. Again the question arises whether a large percentage of the plants, even with resistant varieties, may have become infected with black shank as a result of a damaged root system and a weakened plant. Fertilizer should be applied in such way as to reduce injury to the root system to a minimum. This can be done by using a band placement distributor or making a split application.

5. There was more than the usual amount of wire-worm injury, and again there is a question of whether a large per cent of the plants will become infected with black shank where the roots and lower stalk are damaged by the wireworm or cutworm. Treatment for wireworm control will reduce difficulties caused by this pest.

6. Where resistant varieties failed to live satisfactorily, many of the plants appeared to be sick with black shank and seemed to be struggling to survive. Hot, dry weather seemed to be taking the moisture out of the plant faster than the damaged root system could replace it. This perhaps resulted in the death of many plants that otherwise might have recovered had the rainfall been better distributed and the temperature mild. Many growers noted that plants of resistant varieties which were sick from black shank made considerably recovery, if they were not too far gone, when a shower came. It is recognized that black shank spreads faster in rainy weather, but the very hot dry weather seemed to kill a larger percentage of the infected plants than would likely have been killed under conditions of more favorable growth.

7. Growers should avoid transpanting resistant varieties late in hot weather. Reasonably early transplanting is best.

8. Careful harvesting of uniformly ripe tobacco will do much toward eliminating undesirable characteristics of varieties criticized by the buyng companies.

Along with these suggestions, each grower should, of course, follow other good practices and proper management in order to offset or overcome as many of the unfavorable conditions as possible.

A work of caution is in order. When a variety is described as "Resistant," this does not mean that it is considered immune from attacks of black shank. Of the varieties available, only moderate resistance to black shank is offered by Dixie Bright 101, Oxford 1, Oxford 1-181, and most of the Vestas. Dixie Bright 102, Vesta 30, and Vesta 33 are more highly resistant.

Among the black shank resistant varieties, Dixie Bright 102 and 101 are producing the best cigarette quality tobacco under Duplin conditions. The yield of 101 generally is superior to other black shank resistant lines. The leaves of the variety are tender under conditions of rapid growth. It is susceptible to several of the leaf spot diseases and appears susceptible to nematodes. It has moderate resistance to black shank and high resistance to Granville wilt. The variety needs to become very ripe before priming—almost to the extent of beginning to fire at the tip. If 101 tends to cure too bright this can usually be partially overcome by allowing the leaf to become well ripened in the field and yellow in the barn.

Dixie Bright 102 is of high quality, produces moderate yields (Usually about 200 to 300 pounds less per acre than 101), is not as brittle as 101 but apparently is just as susceptible to leaf spot diseases. The 102 strain is highly resistant to both black shank and Granville wilt. It needs to be dried faster than other varieties during the leaf-curing process.

Dixie Bright 101 and 102 do not tend to button prematurely under dry weather conditions as do Oxford 1, Mammoth Gold, Gold Dollar and Vesta 30.

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Station Publishes Livestock Study

A new bulletin on "Livestock Marketing Agencies in North Carolina' has just been published by the North Carolina Experiment Station.

The publication covers types, number, and location of livestock marketing agencies; volume, seasonality, and type of livestock handled by type of market; source, disposition, and destination of animals; methods of transporting livestock to and from marketing agencies; physical facilities and practices of market agencies and public regulation of livestock markets.

The study was made by Walter P. Cotton, associate professor of agricultural economics. The bulletin is part of a long-range research program on livestock marketing by the experiment stations of several Southern states. The efforts are being coordinated through a Southern Regional Technical Committee in cooperation with the U. S. Department of Agriculture's Bureau of Agricultural Economics.

Some of the conclusions reached markets are too small, most sales by Cotton are that many of the are not made by grade, and shrink-