NC STATE UNIVERSITY

Achievement

College of Agriculture and Life Sciences

Fighting Tomato Spotted Wilt Virus

A plant disease called tomato spotted wilt virus has increasingly become a problem for tobacco growers and other North Carolina farmers in recent years. The virus did an estimated $44.4 million worth of damage to the state's flue-cured tobacco crop in 2002, the worst loss North Carolina growers have ever experienced from a disease. The virus also attacks tomatoes, peppers, peanuts and potatoes along with a number of other plants. The virus is particularly difficult to deal with because it changes frequently and appears as a number of different strains. And there are no pesticides available to control it. The incidence of the disease has increased in recent years, and agricultural scientists and farmers are concerned it will continue to increase unless ways to manage the disease are found.

Dr. George Kennedy is working to find ways to manage tomato spotted wilt virus.

Dr. George Kennedy, William Neal Reynolds professor of Entomology, is working with colleagues in the College of Agriculture and Life Sciences at North Carolina State University to learn as much as possible about the disease and the way it infects crops and other plants. Tomato spotted wilt virus overwinters in weeds, and is spread to nearby crops each spring by flying insects called thrips.

Kennedy and other NC State scientists are working to better understand all the conditions that allow the virus to infect crops. They have determined, for example, that jimsonweed, while very susceptible to tomato spotted wilt virus infection, is a poor host for thrips and likely to be of limited importance in spreading the virus. Buttercup and chickweed, on the other hand, play an important role in spreading the virus to tobacco in the spring. Controlling specific weeds at specific times of the year may be one way to control the virus. At the same time, scientists are exploring the genetic makeup of the virus along with a range of other factors that affect the spread of the disease. As scientists develop a more complete understanding of the disease, they should be able to devise strategies to help North Carolina farmers protect their crops.