

Guidelines for Healthy Vegetable Transplants

As we approach gardening season, the following information from John Damicone, Extension Plant Pathologist, might help in avoiding common pitfalls of seedling startup.

The use of infected vegetable seed and transplants is a common way that some damaging vegetable crop diseases are introduced into the garden or onto the farm. Bacterial diseases such as bacterial spot of tomato and pepper, bacterial speck of tomato, and bacterial canker of tomato; and virus diseases such as tomato spotted wilt virus or TMV can occur on vegetable transplants and can become stubborn problems for growers to deal with.

Transplants become infected by pathogens carried on the seed or by spread from other sources during transplant production. While only a small percentage of seed may be contaminated, greenhouse conditions are conducive to the development and spread of diseases because plants are often crowded together. Furthermore, bacteria may survive and spread on leaf surfaces without causing symptoms until after transplants are set. Standard recommendations are to “plant disease free seed” or “use disease free transplants”. In reality these recommendations are not very practical because there are few if any independent certification programs that check for pathogens on seeds and transplants. Large seed companies have plant pathology programs that inspect seed fields and test seed for common seed borne pathogens. Quality control from smaller seed companies and transplant growers who supply retailers with plants and seeds is less rigorous. Vegetable crop growers should develop some level of their own certification program to avoid importing disease problems into their operations.

An obvious first step is to inspect plants to ensure they are free of obvious disease symptoms and insect problems. Avoid purchasing plants that have leaf spots, wilt, stunting, or leaf deformities that are symptoms of disease problems. Similarly, plants infested with thrips or aphids may develop virus diseases because these insects carry and spread viruses.

Another choice is to grow your own transplants from high quality seed or seed treated to minimize the chances for introducing seed borne disease. Seed sanitation is especially important for growers who save their own seed. Producing healthy transplants can be accomplished by practicing good greenhouse sanitation, using fresh, heat- pasteurized soil mixes, and cleaning saved seed in a 20% household bleach(1 qt bleach plus 4 qts water plus ½ tsp dish soap). Use treated seed as soon as possible.

Maintain adequate temperature to ensure rapid seed germination and seedling growth, and monitor humidity levels to discourage damping-off. Please feel free to stop by or contact me if I can be of assistance.

John Holman, Extension Educator Ag/Youth Development

“The Oklahoma Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.”