HARVESON, R. M.*, and RUSH, C. M., Texas Agricultural Experiment Station, P.O. Drawer 10, Bushland, TX 79012. - The effect of Aphanomyces root rot and Rhizomania on sugar beet in a controlled environment.

An experiment was conducted to determine the effect of *Aphanomyces cochlioides* and beet necrotic yellow vein virus (BNYVV), the causal agents of Aphanomyces root rot and rhizomania, respectively, on sugar beets. The test was performed in a controlled temperature box that was maintained at 27 ± 2 C. Four treatments were employed, and consisted of soil containing Aphanomyces, BNYVV, both pathogens combined, and an uninfested control. Leaf weights and areas were taken twice during the test, at two and three months after planting. At harvest, tops were removed and the root profile was divided into equal 15-cm segments and washed. Roots collected from each segment were dried and weighed. At the time of the first reading for leaf weight and area, the control treatment was significantly different from the pathogen treatments. By the end of the test, significant differences were seen only between control and the treatment involving both pathogens. More damage was observed in dry top weight and taproot weight with the combined pathogen than with either one alone. Although the root rot rating for *A. cochlioides* was more severe than that of BNYVV, there was less weight reduction in the taproot. Root distribution was affected by pathogen treatments. In all segments, a greater amount of roots were recovered from uninfested controls than in all other treatments. In the middle segment, BNYVV produced more roots than *A. cochlioides*, but no differences were seen between the pathogen treatments in the bottom segment.