

SOYBEAN CYST NEMATODE DEVELOPMENT ON PURPLE DEADNETTLE UNDER SELECTED WINTER TEMPERATURE REGIMES. J. Earl Creech, Andreas Westphal, and William G. Johnson, Graduate Research Assistant, Assistant Professor, and Associate Professor, Purdue University, West Lafayette, IN 47907.

Some soybean cyst nematode (SCN) juveniles have been documented to infect purple deadnettle roots too late to reach maturity in the fall. However, the fate of these juveniles is unknown. These purple deadnettle plants could be serving as a trap-crop for SCN if freezing winter temperatures kill the juveniles. On the other hand, if SCN enters a diapause as soil temps drop, growth and maturation could resume in the spring as soon as soil temperatures permit. The objective of this research was to assess the ability of SCN to survive cold temperatures then complete a lifecycle when favorable temperatures return. Purple deadnettle was planted in SCN infested soil and placed in a 20°C growth chamber for 20 days to allow SCN to penetrate and establish a feeding site inside the root. After the infection period, pots were transferred to 20, 15, 10, 5, and 0°C growth chambers where they were maintained for 10 or 20 days. Pots were then returned to the original 20°C growth chamber for 0 or 20 days of post-treatment growth. Plant and nematode development was measured following the completion of each post-treatment growth period. The experiment was arranged as a randomized complete block with 5 replications and was repeated twice. Nematode reproduction and purple deadnettle growth were reduced by cold temperature regimes. However, SCN development and cyst production was able to proceed to completion once pots were returned to a favorable temperature level. Thus, weed management programs that disrupt the purple deadnettle lifecycle in either the late fall or early spring may be necessary to prevent over-wintering SCN to reproduce in the spring.