

## Effectiveness of Vapam (metam sodium) at reducing root rot symptoms and improving yield in Ontario processing tomatoes

Cheryl Trueman<sup>1</sup> and K. Conn<sup>2</sup>, <sup>1</sup>University of Guelph, Ridgetown Campus, Ridgetown, ON N0P 2C0, and <sup>2</sup>Southern Crop Protection and Food Research Centre, Agriculture and Agri-Food Canada, London, ON N5V 4T3. [ctrueman@ridgetownc.uoguelph.ca](mailto:ctrueman@ridgetownc.uoguelph.ca)

Symptoms of root rot were first reported in Ontario processing tomatoes in 2009 and are associated with premature defoliation, poor vine development, yield reduction, and the presence of several soilborne fungi in tomato roots including *Pyrenochaeta terrestris*, *Pyrenochaeta lycopersici* (corky root rot), *Colletotrichum coccodes* (black dot), *Rhizopycnis vagum*, and *Fusarium* spp. The effectiveness of Vapam (metam sodium) in reducing symptoms of root rot and vine decline, and increasing tomato yield, was explored in 2010 and 2011 using greenhouse pot studies, outdoor microplots, and field trials. In one greenhouse experiment, tomatoes transplanted into infested soil treated with Vapam (0.36 mL kg<sup>-1</sup> soil) had higher dry root weight and fewer root lesions than the nontreated control. The number and weight of tomatoes harvested from the high Vapam rate treatment (0.36 mL/kg soil) in the outdoor microplot experiment in 2010 was 44 and 47 per cent higher than the nontreated control, but there was no difference in the number of lesions per cm of root among these treatments. Field applications of Vapam (281 L Ha<sup>-1</sup> and 562 L Ha<sup>-1</sup>) did not increase yield or reduce the number of lesions per cm of root at the commercial site in 2010. Preliminary results suggest that Vapam may reduce root rot symptoms or increase yield when applications are made under ideal conditions, but may not be effective using current commercial application practices. In order to confirm results from the 2010 field season, the experiment in the commercial field was repeated at the same location in 2011 and at one additional site using a strip trial plots. Microplot experiments were also repeated in 2011 using soil from both field trial sites and the soil collected and fumigated in 2010.