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Effect of Label and Sublabel Rates of Metam Sodium in Combination with *Trichoderma hamatum*, *T. harzianum*, *T. virens*, *T. viride* on Survival and Growth of *Rhizoctonia solani*

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This work was undertaken to determine the effects of *Trichoderma* spp. combined with label and sublabel rates of metam sodium on survival of *Rhizoctonia solani* in soil. Soils were infested with wheat bran preparations of *Trichoderma hamatum* Tri-4, *T. harzianum* Th-58, *T. virens* Gl-3, and *T. viride* Ts-1-R3. Soil was also infested with sterile beet seeds that were colonized with *R. solani*. Beet seeds were later recovered, plated onto water agar plus antibiotics, and the growth of *R. solani* was recorded. Preliminary experiments showed that *T. hamatum* and *T. virens* reduced survival and saprophytic activity of *R. solani* when the biocontrol fungi were incorporated into soil at 1.5% (w:w) or greater. Based on these data, biocontrol fungi in subsequent experiments were incorporated into soil at 2%. Metam sodium at label rate killed all biocontrol fungi and *R. solani*. At 1:2 and 1:5 dilutions, metam sodium reduced survival of *R. solani* and all *Trichoderma* spp. When biocontrol fungi plus the label rate of metam sodium and 1:5, 1:10, 1:50 or 1:100 dilutions of the label rate were tested together, there were no interactions between any biocontrol agent and the fumigant with respect to colony diameter, reflecting that all *Trichoderma* isolates tested reacted similarly to increasing concentrations of metam sodium. At the label rate of metam sodium, all *Trichoderma* spp. significantly reduced colony diameter, but not growth rate, of *R. solani* from beet seed. For the levels of metam sodium tested in combination with *Trichoderma*, it does not appear feasible to use a reduced rate of metam sodium to control *R. solani*. However, the combination of *Trichoderma* with metam sodium does reduce growth of *R. solani* in comparison with that provided by metam sodium at the label rate.
KEY WORDS: Biological control; biocontrol; *Trichoderma hamatum*; *Trichoderma harzianum*; *Trichoderma virens*; *Trichoderma viride; Rhizoctonia solani*; metam sodium.

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