

**EFFECT OF SELECTED FUNGICIDES AND OTHER TREATMENTS
ON COTTON ROOT ROT SUPPRESSION**

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Phymatotrichopsis omnivora causes substantial losses in cotton lint yields on many soils of the Southwest. Validation of field observations through soil sample analyses indicated that at least two plant nutrients, Fe and Magnesium (Mg), and possibly others including Zinc (Zn) and Nickel (Ni) may be present in short supply in these problem soils. Surveys of the soil-plant ecosystems in cotton fields exhibiting *Phymatotrichopsis* root rot (PRR) on cotton and those having a history of no PRR suggested a relationship between soil particle size distribution and soils being suppressive or supportive of this pathogen, *Phymatotrichopsis omnivora*. Field studies on *Phymatotrichopsis* root rot (PRR) were conducted evaluating various nutritional and chemical methods for their effects on disease suppression. Some of the promising methods in suppressing PRR on cotton included seedrow and stem drench placements of a synthetic Fe chelate and propiconazole (fungicide). Additional materials evaluated in the field included Topsin, Bayleton, and Quadris fungicides, and elemental sulphur. Iron chelate (Fe-EDDHA) applied in the seedrow reduced plant kill substantially, while foliar sprays with NiCl₂ together with soil applied Mg and K sulphates also reduced disease incidence. High rates of powdered elemental S decreased soil pH substantially and reduced plant mortalities from PRR. Controlled-release formulations of propiconazole had the greatest effect on plant mortalities followed by Topsin. Starter N fertilizer granules (slow release) appeared to be better carriers of controlled release formulations of fungicides than clay granules. Additional definitive research is needed in evaluating controlled release formulations of fungicides for suppression of this important cotton disease problem.