

**Comparative performances of phenolic extract derived from pecan shell and husk and commercially available synthetic fungicides, biofungicides and host plant defense inducers against *Phytophthora capsici* on chile pepper**

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The use of commercial fungicides, biofungicides and plant-derived secondary metabolites to induce disease resistance in plants has been well documented. In this study, total secondary phenolics were extracted from shell and husk of pecan (*Carya illinoensis*). Then, under greenhouse conditions, extracts were foliarly applied along with three commercially available plant defense inducers and one commercially available synthetic fungicide labeled for chile pepper (*Capsicum annuum* L., cultivar NM 6-4). All treatments were then compared on their ability to induce resistance in chile pepper and reduce development of crown and root rot when inoculated with a virulent isolate of *Phytophthora capsici*, a fungal-like microorganism that is a pathogen of a wide array of vegetable crops. Chile plants treated with total phenolic extracts from pecan husk or shell or 0.1% salicylic acid remained alive throughout the study. Those plants treated with commercially available products had mixed results while plants treated with only water died. Total phenolic extracts derived from pecan byproducts can be used as elicitors to induce resistance response and can be implemented within an integrated pest management program for vegetable crops against plant pathogens such as *P. capsici*.

**Keywords:** chile pepper, *Phytophthora capsici*, secondary metabolites, plant defense inducers