

## **Abstract: NeSA202100oral-01: Efficacy of Pecan Husk and Shell Phenolic Extracts against Phytophthora Blight in Chile Pepper**

**Time: 1:00-1:12 PM**

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Phytophthora blight, caused by *Phytophthora capsici*, is detrimental to chile peppers (*Capsicum* spp.). In this study, phenolics extracted from pecan (*Carya illinoensis*) husk and shell, were foliarly applied to chile pepper (*Capsicum annuum* L., cultivar NM 6-4) to induce a resistance response against plant infection by *P. capsici*. Several pecan metabolite extractions were tested, and an acetic acid (2%) in aqueous methanol (80%) solution was the best extraction solvent, yielding total polyphenolic content of 290 mg/g dry weight from husk and 641 mg/g from shell. The phenolic extracts from husk and shell were applied as foliar sprays at different concentrations to chile plants inoculated with a virulent isolate of *P. capsici*. Chile plants treated with 1% phenolic husk or shell extracts or 0.1% salicylic acid remained alive throughout the study while plants subjected to all other treatments (including a water control treatment) died. Analyses of the extracts through spectrophotometry and high-performance liquid chromatography indicated that the phenolic content in the extracts was largely made up of proanthocyanidins also known as condensed tannins. Pecan byproducts may be used as additional options for management of Phytophthora blight.