This article was listed in Forest Nursery Notes, Summer 2007

110. Susceptibility of Fraser fir to *Phytophthora capsici*. Quesada-Ocampo, L. M., Fulbright, D. W., and Hausbeck, M. K. Phytopathology 97(7)Suppl:S95. 2007.

ginseng seedlings was observed during 2005 and 2006. Isolations from affected tissues yielded mainly *Fusarium oxysporum*. Mycelial growth in culture was highest at 25–30°C and pH 5.7–6.8. Pathogenicity tests conducted *in vitro* and in the greenhouse resulted in root tip decay and discoloration of ginseng roots. Sequence analysis of an EF-1 alpha gene region placed isolates of *F. oxysporum* from ginseng within the *F. oxysporum/F. redolens* cluster which included isolates originating from other hosts. The fungus was detected on blossoms, berries and seed of ginseng collected from several farms. Seed transmission is a likely source of inoculum for seedling infection by *F. oxysporum*, resulting in the previously undescribed symptoms of root girdling.

Population dynamics, growth and seed transmission of *Fusarium equiseti* in ginseng

Z. K. PUNJA (1), C. A. Wan (1), M. Rahman (1), R. S. Goswami (1)
(1) Simon Fraser University, Burnaby, BC, Canada
Phytopathology 97:S95

Fusarium equiseti is prevalent in ginseng soil, straw mulch and ginseng root tissues in British Columbia. Inoculum levels in fields were highest at 0–5 cm soil depth compared to 15 cm. Barley or wheat straw added to soil significantly increased population levels. Mycelial growth in the laboratory was highest at 28–30°C and at pH 7.2–7.5. Spore monitoring studies revealed air-borne inoculum of *F. equiseti* during June-August, 2006. Samples of flowers and berries, and harvested seed, contained DNA of *F. equiseti* detected using a *Fusarium*-specific DNA array. A high degree of genetic variation in the EF-1 alpha gene sequence was present among 52 isolates of *F. equiseti* from ginseng fields. At least 9 clades were identified. Inoculum dispersal from straw mulch used in ginseng gardens can result in seed contamination by the fungus.

Conceptual model supporting 4-day temperature evaluation in fire blight risk assessment

P. PUSEY (1), T. J. Smith (2)
(1) USDA-ARS, Tree Fruit Research Laboratory, Wenatchee, WA, USA; (2) Washington State University, Wenatchee, WA, USA
Phytopathology 97:S95

Erwinia amylovora colonizes stigmas of apple and pear blossoms during warm dry conditions, and rain or heavy dew facilitates its downward

Susceptibility of Fraser fir to *Phytophthora capsici*

L. M. QUESADA-OCAMPO (1), D. W. Fulbright (1), M. K. Hausbeck (1)
(1) Michigan State Univ, East Lansing, MI, USA
Phytopathology 97:S95

Phytophthora blight limits production of Fraser fir, an important Christmas tree, causing losses up to 75%. *Phytophthora capsici* affects primarily vegetable crops worldwide. Crop rotation is limited by the long-term survival of oospores and uninfested fields are difficult to find. Studies to determine new hosts may increase crop rotation efficacy. Fraser fir seedlings were inoculated (no wound or 1- or 3-mm-diameter wound) with *P. capsici* OP97 and were incubated in growth chambers at 20 or 25°C. Four isolates of *P. capsici* representative of its diversity were used to inoculate seedlings (no wound or 1-mm-diameter wound) incubated at 25°C. Experiments were conducted twice and controls were included. Seedlings were evaluated by calculating the percentage of branches with bronzing. All *P. capsici* isolates caused disease in non-wounded and wounded seedlings. Wounded seedlings developed symptoms sooner than non-wounded, but after 5 weeks seedlings incubated at 25°C died. Symptoms developed slower in seedlings incubated at 20°C, they died after 7–8 weeks. The pathogen was reisolated from symptomatic seedlings and the phenotype (mating type and mefenoxam resistance) was confirmed. To our knowledge, this is the first report of *P. capsici* infecting Fraser fir. This study suggests that planting Fraser fir in fields infested with *P. capsici* could result in infection.

Management of early blight and basal stalk rot of celery

R. N. RAID (1)
(1) University of Florida
Phytopathology 97:S95

Florida celery growers have made great strides in recent years in controlling their most important foliar disease, early blight (EB), caused by *Cercospora apii*, using reduced spray programs. Concerns remain however about basal stalk rot (BSR), incited by *Rhizoctonia solani*. An experiment evaluating 8 fungicide treatments for management of EB and BSR was conducted in Belle Glade. Treatments included a broad spectrum protectant, a sterol inhibitor, two strobilurins, three strobilurin/sterol inhibitor premixes, and a strobilurin/boscalid fungicide premix. A total of five fungicide applications were made at