

Lu, X.H.; Hao, J.; and Liu, X. 2010. Competitive ability of iprovalicarb-resistant mutants of *Phytophthora capsici*. *Phytopathology* 100:S74.

Iprovalicarb is a compound that inhibits plant pathogenic oomycetes, but its application may be limited by resistance in the pathogen. Iprovalicarb-resistant mutants of *Phytophthora capsici* were developed in the laboratory, and four of them (R2-1, R2-2, R1-3, and R1-7) were used to evaluate their competitiveness. Zoospore suspensions of resistant and sensitive isolates were mixed at ratios of 1:9, 3:7, 5:5, 7:3 and 9:1, respectively, inoculated on Petri plates containing carrot agar (CA), and incubated at 25°C. After production of sporangia, zoospore suspensions were prepared and spread on CA medium amended with or without iprovalicarb (5 µg/ml), to determine the frequency of iprovalicarb-resistant subpopulation. Zoospores were concomitantly transferred to CA plates to initiate a new cycle of growth. After five cycles, R2-1 and R2-2 were nearly non-detectable, but R1-3 and R1-7 were dominant. In the greenhouse, sweet pepper (*Capsicum frutescens*) seedlings were inoculated by pouring zoospore suspensions in the rhizosphere. After three days, *P. capsici* was isolated from the stem tissues of 20 infected seedlings, assayed for competitiveness, and inoculated on plants for five cycles of infection. Regardless of initial ratios of the resistant to sensitive isolate, R2-1 and R2-2 were dominant, and R1-3 and R1-7 were less competitive than the sensitive isolates at last. Thus, some iprovalicarb-resistant isolates may survive competitively under contain conditions.