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Xanthomonas Spot of Cucurbits: An Emerging Disease in the World

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Xanthomonas spot of cucurbits, caused by *Xanthomonas cucurbitae*, is an emerging disease in the United States (US) and other cucurbit growing areas of the world. The pathogen can infect all cucurbit crops, but its major hosts are pumpkins and winter squash. Leaves and fruits of cucurbits are infected by *X. cucurbitae* at all growth stages. Infected fruits are usually colonized by opportunistic fungi and bacteria and rot. Our surveys in the North Central Region of the US showed that 159 of 180 and 71 of 79 of pumpkin and squash fields, respectively, had fruits infected with *X. cucurbitae*. The average incidence of fruits with bacterial spot in all pumpkin and squash fields surveyed was 25 and 19%, respectively. We identify the pathogen based on the colony morphology on yeast dextrose agar (YDC), polymerase chain reaction (PCR) test using RST2/RST3 primers, and pathogenicity test on susceptible pumpkin 'Howden'. *X. cucurbitae* survived in infected leaves and fruits in the field for more than 24 months. Also, *X. cucurbitae* survived longer than 18 months in the seeds at 4 and 22°C and remained viable. We eradicated the pathogen in the naturally-infected and artificially infested seeds by hot-water treatment at 55°C for 15 min and HCl treatment at 0.5% concentration for 40 min. Also, in our field trials, copper oxychloride + copper hydroxide (Badge X2 DF), copper sulfate (Cuprofix Ultra 40 DF), copper sulfate pentahydrate (Phyton-016B), copper hydroxide (Kocide-3000 46.1 DF) plus acibenzolar-s-methyl (ActiGard 50 WG), Kocide-3000 46.1 DF plus famoxadone + cymoxanil (Tanos 50D WG), an extract from *Reynoutria sachalinensis* (Regalia), and *B. subtilis* (Serenade ASO) were effective in reducing incidence and severity of bacterial spot on both leaves and fruits compared to controls. Currently, we are evaluation cultivar resistance of cucurbits to *X. cucurbitae*, and effects of cropping rotation and a newly identified biocontrol agents for managing *Xanthomonas* spot of cucurbits.

Biography:

Mohammad Babadoost received his M.S. in plant pathology from Washington State University and Ph.D. in plant pathology from North Carolina State University. In 1999, he joined the faculty of the University of Illinois at Urbana-Champaign, and he is now a Professor of Plant Pathology and Extension Specialist. Mohammad conducts research and extension programs on the biology and management of vegetable and fruit crops diseases, and teaches "Plant Disease Diagnosis and Management" and "Outreach Education Skills." He has served as an editor of the APS-FNT and ASHS HortTechnology and as a reviewer for more than 20 journals. He has published 1 books, 4 book chapter, 1 monograph, 10 bulletins, 58 refereed articles, 88 articles in proceedings, 97 abstracts, and 182 article in newsletters. Dr. Babadoost has developed a profound commitment to sharing his expertise in developing countries to advance the science of plant pathology and establishing food security in the world.