Cucurbits are among the most important vegetables grown worldwide for human consumption. Most of the cucurbits cultivated worldwide belong to the genera *Cucurbita* L., *Cucumis* L., *Citrullus* L., *Lagenaria* L., and *Luffa* L., in the family *Cucurbitaceae*. They produce fruits of various shapes and sizes used for a variety of purposes, including as an important source of essential nutrients for a balanced diet. Among the different types of cucurbits cultivated, watermelons occupy the largest acreage worldwide and are widely consumed as edible fruit. Like other crops, cucurbits are also susceptible to a wide range of pests and pathogens. Among them, bacterial fruit blotch (BFB), caused by *Acidovorax citrulli* (Ac) has emerged in recent years as a threat to sustainable production of cucurbits (Hopkins and Walcott 2009). In the US, for example, BFB has become a serious constraint to the production of watermelons, causing crop losses reaching 90% and millions of dollars of income lost to commercial growers. The recent BFB epidemics worldwide have drawn greater attention for a better understanding of the bacterial pathogen and its epidemiology to deploy science-based management strategies for mitigating crop losses. BFB is seedborne and cotyledons of seedlings from infected seeds can serve as an initial source of inoculum in secondary spread of BFB in fields (Chalupowicz et al. 2015). Seed infection of BFB can occur by two pathways, through stomata of ovary pericarp leading to accumulation of bacteria in the perisperm-endosperm layer of seed and infection of embryo mediated by pollen tube. Each pathway of infection determines the specific localization of bacteria within seeds, but does not influence the rate of seed infection (Dutta et al. 2015). The knowledge of seed infection provides avenues for exclusion of the bacterium during seed production. Due to the lack of resistance to BFB in commercial cultivars, use of pathogen-free seed is the first line of defense in preventing the spread of the bacterial pathogen. The seedling grow-out assay and PCR-based detection are used for testing seed to ensure planting clean seed (Feng et al. 2013). Several factors, including agronomic practices, can contribute to the secondary spread of BFB in the field (Walcott 2008). The presentation will provide an overview of BFB, including our current understanding of the epidemiology and integrated management approaches for preventing its spread and mitigating crop losses.
References:


