

**Title: Antibiotic resistance in the bacterial spot pathogen of stone fruit in PA**

**Abstract:**

Bacterial spot of stone fruit (caused by *Xanthomonas arboricola* pv. *pruni* [*Xap*]) is the most important bacterial disease of peach and nectarine in the eastern United States where the disease severely limits yield as well as profit. In Pennsylvania and in other eastern states that grow stone fruit, bacterial spot is routinely managed with frequent applications of the antibiotic oxytetracycline throughout the growing season (May through August). Repeated antibiotic use exerts a strong selective pressure on bacterial populations to support the growth of antibiotic resistant bacteria. With preliminary reports of resistance in Michigan stone fruit orchards, antibiotic resistance in PA would devastate the stone fruit industry that is currently recovering from the successful efforts made to eradicate plum pox. This project will be used to determine the current risk of oxytetracycline resistance in *Xap* populations in PA commercial stone fruit orchards. It will also determine what tetracycline resistance genes conferring resistance to oxytetracycline exist in PA stone fruit orchards. Most importantly, this project will focus on current management strategies that contribute to antibiotic resistance as well as ways to mitigate the risk of resistance in PA.