Abstract:

Fruit rot is a major problem for cranberries. Several fungicide applications are necessary during the growing season to prevent significant losses, especially for cranberries cultivated in Massachusetts and New Jersey where field rot is a major concern. Cholorothalonil (Bravo) is one of the widely used fungicides to control cranberry fruit rot. However, application of cholorothalonil has been reported to cause damage on the flowers, reduction in fruit set and yield. Recently a natural lipid, lysophosphatidylethanolamine, has been shown to improve fruit ripening, enhance storage life and protect membrane degradation. We investigated the potential use of LPE to reduce undesirable effects of cholorothalonil on cranberry (Vaccinium macrocarpon 'Stevens') fruit. For this purpose 1 m x 2 m plots were established in cranberry beds with five replications of each treatment at four separate locations. Plots were sprayed at the rate of 6 L·ha^{-1} of Bravo and LPE (100 and 200 mg·L-1) combinations at 20 and 80% bloom. Cranberry fruits and flowers on the upright shoots were counted from an area in the plot to determine the fruit set. Flooded plots were harvested with a hand rake to determine total yield and other fruit quality parameters. Bravo applications resulted in reduction in fruit set and yield, while adding LPE prevented fruit set and yield decline by Bravo. Applications of LPE alone showed 20% and about 7% greater fruit set compared with Bravo alone and the untreated control, respectively. The results of the present study show that: (1) applications of LPE can improve fruit set, and yield when applied at the time of flowering; (2) application of LPE together with Bravo can mitigate injury by Bravo.