Nitrogen fertilizer methods and rates were evaluated in a new field of highbush blueberry (Vaccinium corymbosum L. `Bluecrop"). Treatments included four application methods (split fertigation, continuous fertigation, and two non-fertigated controls) and four rates of N application (0, 50, 100, and 150 kg/ha of N). Fertigation treatments were irrigated by drip and injected with dissolved ammonium sulfate fertilizer; split fertigation was applied as a triple split from April to June while continuous fertigation was applied weekly from leaf emergence to 60 d prior to the end of the season. Non-fertigated controls were fertilized with granular ammonium sulfate and irrigated by drip or microsprays. Canopy cover, which indicates the relative size of young plants, was significantly affected by the rate of N fertilizer application during the first year after planting. The interaction between N application method and rate was also significant. In general, continuous fertigation produced the lowest canopy cover among treatments at 50 kg/ha of N and the highest canopy cover at 150 kg/ha. Apparently, the other methods required less N to produce their canopy but were less responsive than continuous fertigation to additional N fertilizer applications. In fact, up to half the plants died when they were fertilized at 150 kg/ha with granular fertilizer. This occurred whether plants were irrigated by drip or microspray. Alternatively, none of the plants died when they were fertigated continuously. Reduced growth and plant death was associated with high electrical conductivity in the soil solution (>3 dS/cm). The first year results indicate that fertigation is actually less efficient (i.e., less plant growth per unit of N applied) than granular fertilizer application but is also safer (i.e., less plant death) when high amounts of fertilizer is applied.

Bryla, D.R., Machado, R. 2007. Nitrogen fertigation is less efficient but safer than granular fertilizer application in newly-planted blueberry. HortScience. 42:1021.