A Small-Scale Intensive Vegetable Production System for the Farmers’ Market

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**Purpose:** Supplying product to a farmers’ market requires successive harvests in manageable quantities. We designed and tested an irrigation system that could be used with organic or conventional fertilizer systems using locally available components.

**Results:** Fresh weight mustard green weights ranged from 39.6 to 40.8 pounds per 12-foot in the irrigation experiment. Weights ranged from 29.2 to 30.8 pounds per 12-foot in the fertilizer experiment. There were no statistical differences in mustard green yield as a result of fertilizer source or irrigation treatments. An adult panel of taste testers could not discern the taste of prepared mustard greens, between the fertilizer treatments, but were able to discern the taste of the non-fertilized mustard control \((P > 0.001)\).

**Discussion:** We showed that an inexpensive irrigation system can produce large enough quantities of a horticulture crop on 12-foot lengths to supply sequential harvests needed to supply a farmers market. Highest yields (40.8 pounds) were achieved with the nitrogen injection system with two tapes per row.

**Methods:** An irrigation manifold was constructed for under $250. Row lengths were 12 feet long. Irrigation was scheduled using a Fieldscout TDR 100® with 8-inch probe rods calibrated for sandy soils, when readings approached 8. A fertilizer injection system was built, operated from a 12-volt battery, to deliver nitrogen to the irrigation experiment. Irrigation treatments were: \(\frac{1}{2}\), 1, and 1.5 times the recommended rate. Fertilizers compared under the same nitrogen rate were: Black Kow®, rosin-coated urea, ammonium nitrate. ‘Florida Giant’ mustard yield and consumer discernment was tested.

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