

Supplemental Data for:

Water Irrigation Scheduling and Nutrient Management Strategies for Cutflower Production in Small and Urban Farms

2025 ePLUS Report

Table 1. Summary of ANOVA for significance of sources of variation (irrigation scheduling, nutrient management, and sampling time) on Soil Plant Analysis Development (SPAD), total and marketable stem number, and quality.

Source	SPAD reading	Marketable yield (stems/m ²)	Unmarketable yield (stems/m ²)	Total Stem yield (stems/m ²)	Stem caliber (mm)
	<i>P-values</i>				
Irrigation scheduling (IS)	0.04**	0.03**	0.24 ^{ns}	0.14 ^{ns}	0.01**
Nutrient management (NM)	0.01**	0.06*	0.61 ^{ns}	0.82 ^{ns}	0.01**
Sampling date (SD)	<.0001**	<.0001***	<.0001***	<.0001***	<.0001***
IS*NM	0.77 ^{ns}	0.56 ^{ns}	0.14 ^{ns}	0.37 ^{ns}	0.67 ^{ns}
IS*SD	<.0001**	0.08*	0.97 ^{ns}	0.39**	0.96 ^{ns}
NM*SD	0.04**	0.29 ^{ns}	0.99 ^{ns}	0.89 ^{ns}	0.15 ^{ns}
IS*NM*SD	0.74 ^{ns}	0.71 ^{ns}	0.86 ^{ns}	0.86 ^{ns}	0.14 ^{ns}

*, **, *** and ns are significant at $p \leq 0.1$, $p \leq 0.05$, $p \leq 0.01$ and non-significant, respectively. Marketable stems (≥ 46 cm stem length, straight with no curvature, properly developed raceme and no visual damage); Unmarketable stems - (< 46 cm stem length, culled, exhibited curvature, malformed blooms, or other visual damage from insects or disease)

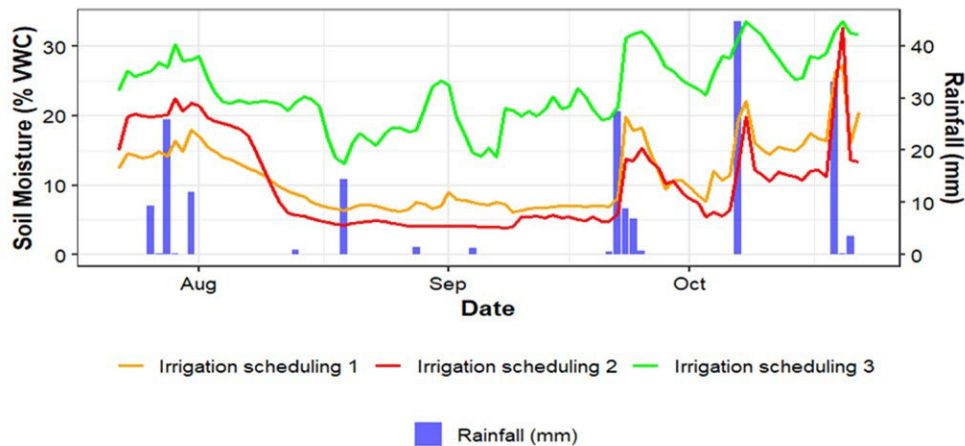


Figure 1. Daily rainfall (mm) and soil volumetric water content (%) at 12” depth measured during the snapdragon trial growing season (July 22 – October 22, 2025) using Watchdog Weather Station coupled with soil sensors.

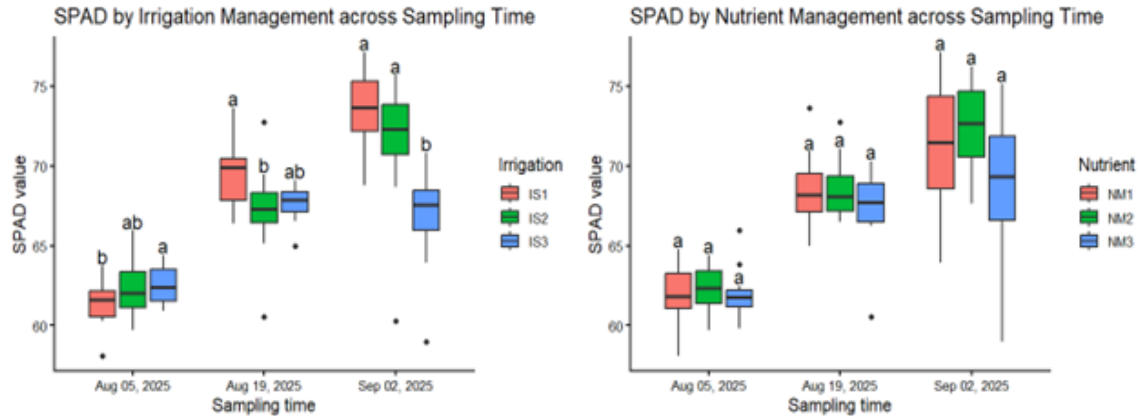


Figure 2. Effect of irrigation management (A) and nutrient management (B) on SPAD readings of Snapdragon at multiple sampling times. IS1= Systematic irrigation, IS2= Crop Water Demand, IS3= Soil Water Status. NM1= Compost only, NM2= Compost only +Water Soluble Fertilizer, NM3= Control (No additional Nutrient input). *Plots having different superscripts differ significantly ($P<0.05$).

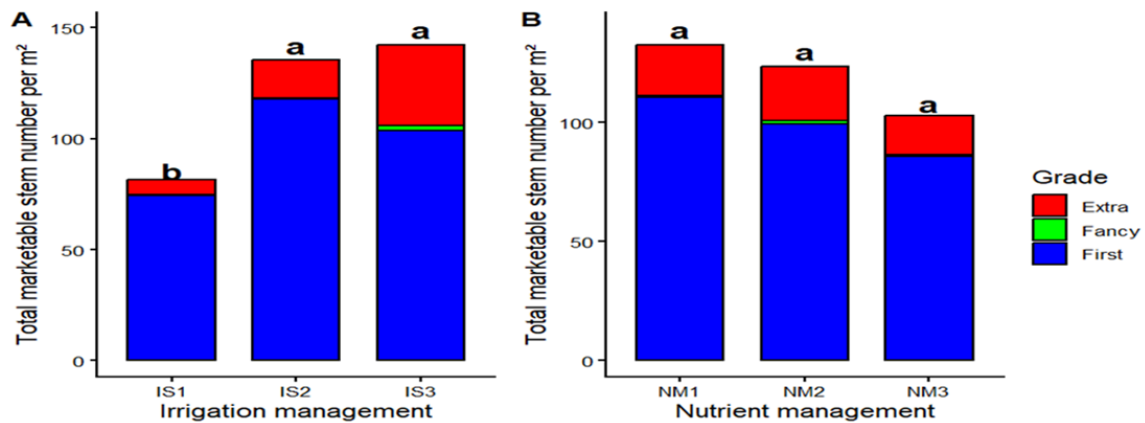


Figure 3. Effect of nutrient management (A) and irrigation management (B) on marketable stem category of Snapdragon. IS1= Systematic irrigation, IS2= Crop Water Demand, IS3= Soil Water Status. NM1= Compost only, NM2= Compost only + Water Soluble Fertilizer, NM3= Control (No additional Nutrient input). Marketable stems (≥ 46 cm stem length, straight with no curvature, properly developed raceme, and no visual damage) - 'First' category (46-60 cm stem length), 'Extra' (61-75 cm stem length), 'Fancy' (76-90 cm stem length). *Plots having different superscripts differ significantly ($P<0.05$).

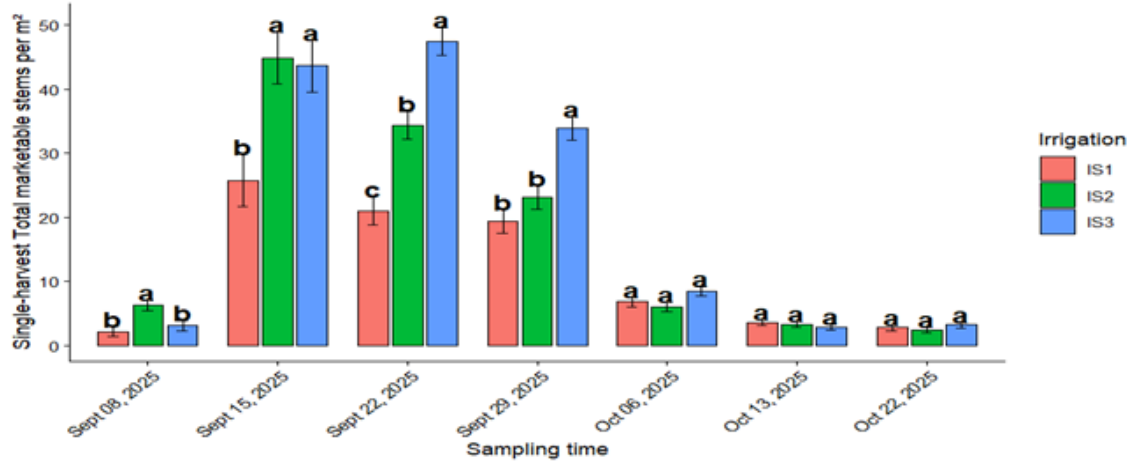


Figure 4. Effect of Irrigation scheduling by Harvest time on Total marketable stems of Snapdragon. IS1= Systematic irrigation, IS2= Crop Water Demand, IS3= Soil Water Status. *Plots having different superscripts differ significantly ($P < 0.05$).

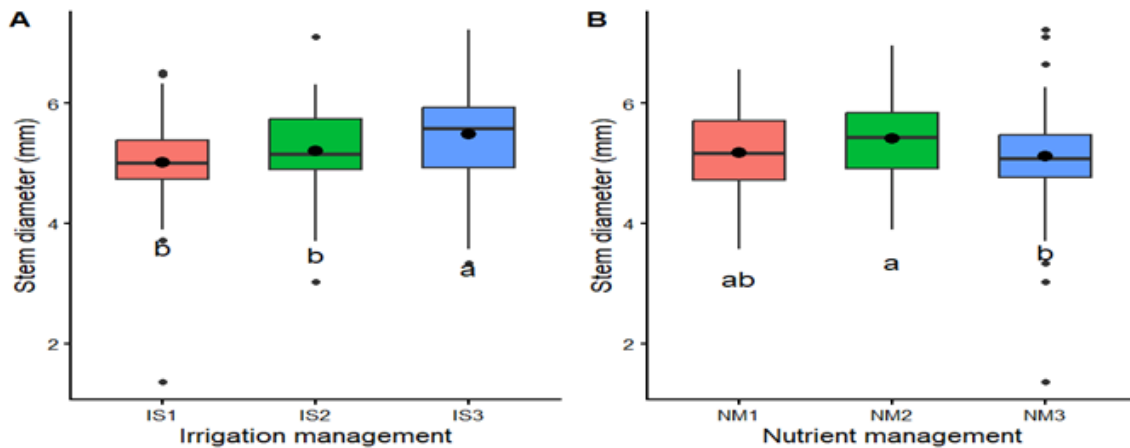


Figure 5. Effect of irrigation scheduling (A) and nutrient management (B) on stem caliper (mm) of Snapdragon. IS1= Systematic irrigation, IS2= Crop Water Demand, IS3= Soil Water Status. NM1= Compost only, NM2= Compost only +Water Soluble Fertilizer, NM3= Control (No additional Nutrient input) *Plots having different superscripts differ significantly ($P < 0.05$).

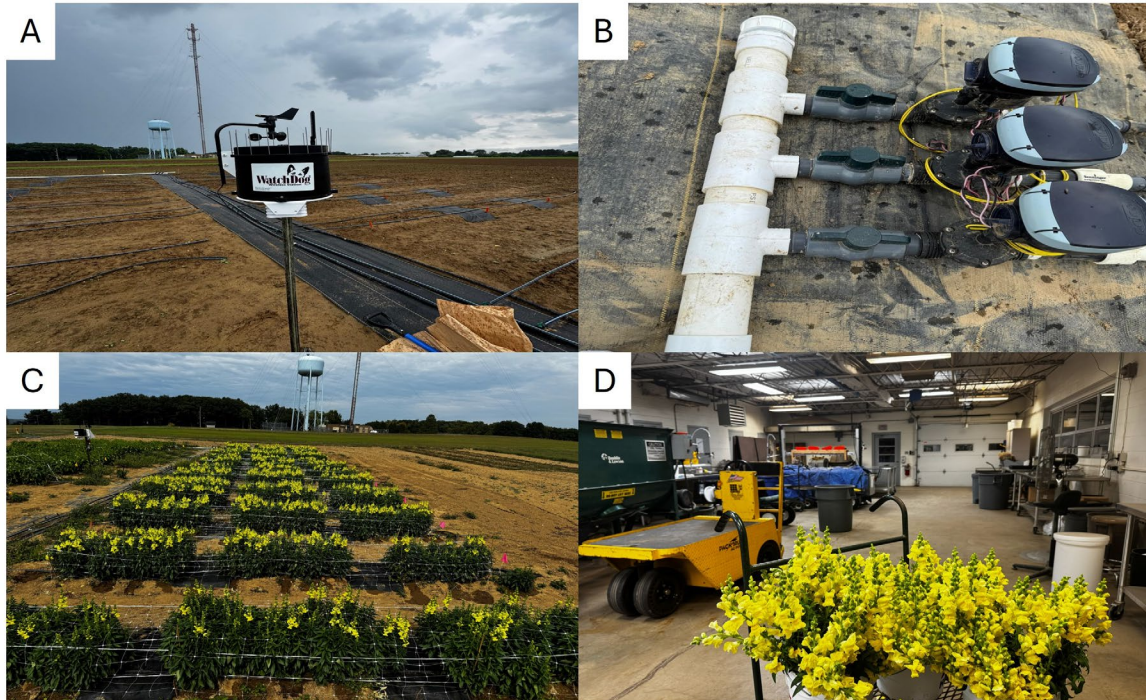


Figure 6. (A) Watchdog weather station coupled with soil sensors installed in the experiment for rainfall and soil moisture monitoring. (B) Galcon Bluetooth irrigation valves for irrigation automation. (C) Trial field view at Hort unit 1, CFAES Wooster Campus. (D) Snapdragon harvest.

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