

**TRICKLE IRRIGATION SYSTEM DESIGN WORKSHEET**  
(Reference page 7-72, NEH Section 15, Chapter 7, Trickle Irrigation)

Land user \_\_\_\_\_ Field Office \_\_\_\_\_  
Job description \_\_\_\_\_  
Location \_\_\_\_\_  
Planner \_\_\_\_\_ Date \_\_\_\_\_ Checked by \_\_\_\_\_ Date \_\_\_\_\_

**LAND AND WATER RESOURCES**

Field area (A) \_\_\_\_\_ acres  
Average annual effective rainfall (Re) \_\_\_\_\_ inches  
Residual stored soil moisture from off-season precipitation (Ws) \_\_\_\_\_ in  
Water source desc. \_\_\_\_\_  
Reliability of water source \_\_\_\_\_  
Minimum water supply rate (Q) \_\_\_\_\_ gpm  
Water quality measurements: (ECw) \_\_\_\_\_ mmhos/cm  
(SARadj) \_\_\_\_\_  
Other water quality considerations \_\_\_\_\_

**SOIL AND CROP**

Crop to be irrigated \_\_\_\_\_  
Soil description \_\_\_\_\_  
Soil limitations \_\_\_\_\_  
Effective plant root depth (RZD) \_\_\_\_\_ ft  
Available water capacity (total in root zone) (AWC) \_\_\_\_\_ ft  
Management allowed deficit (MAD) \_\_\_\_\_ %  
Plant spacing (Sp) \_\_\_\_\_ ft x (Sr) \_\_\_\_\_ ft  
Percent area shaded (Ps) \_\_\_\_\_ %  
Average daily consumptive use--use rate for the month of greatest overall water use (ud) \_\_\_\_\_ in/day  
Seasonal total crop consumptive use rate (U) \_\_\_\_\_ in  
Leaching requirement (LRt) \_\_\_\_\_ ratio

**SYSTEM**

Emitter description \_\_\_\_\_  
Number of outlets per emitter \_\_\_\_\_  
Pressure at emitter (h) \_\_\_\_\_ psi  
Rated emitter discharge @ h (q) \_\_\_\_\_ gph  
Discharge exponent (x) \_\_\_\_\_  
Coefficient of variability (v) \_\_\_\_\_  
Discharge coefficient (kd) \_\_\_\_\_  
Connection loss equivalent (fe) \_\_\_\_\_ ft

**COMMENTS:** \_\_\_\_\_  
\_\_\_\_\_

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**TRIAL DESIGN**

Trial 1 description \_\_\_\_\_  
 Trial 2 description \_\_\_\_\_  
 Trial 3 description \_\_\_\_\_

	Trial Number		
	1	2	3
Emission point layout type .....	_____	_____	_____
Emitter spacing (Se x S1) = ft x ft.....	_____	_____	_____
Emission points per plant (e') = no.....	_____	_____	_____
Percent area wetted (Pw) = % .....	_____	_____	_____
Max. net depth of application (Fmn)= in.....	_____	_____	_____
Avg. peak transp. rate (Td)= in/day.....	_____	_____	_____
Max. allowable irr. interval (If)= days .....	_____	_____	_____
Design irrigation interval (If) = days .....	_____	_____	_____
Net depth of application (Fn) = in.....	_____	_____	_____
Emission uniformity (EU) = % .....	_____	_____	_____
Gross water application (Fg) = in .....	_____	_____	_____
Gross volume of water required/plant/ day F(gp/d) = gal/day .....	_____	_____	_____
Time of application (Ta) = hr/day .....	_____	_____	_____

**FINAL DESIGN**

Time of application	(Ta)	_____	hr/day
Design irrigation interval	(If)	_____	days
Gross water application	(Fg)	_____	in
Average emitter discharge	(qa)	_____	gph
Average emitter head	(ha)	_____	ft
Allowable pressure head variation	(Hs)	_____	ft
Emitter spacing	(Se x S1)	_____	ft x ft
Percent area wetted	(Pw)	_____	%
Number of stations	(N)	_____	
Total system capacity	(Qs)	_____	gpm
Seasonal irrigation efficiency	(Es)	_____	%
Gross seasonal volume	(Vi)	_____	
Seasonal operating time	(Qt)	_____	hr
Total dynamic head	(TDH)	_____	ft
Actual uniformity	(EU)	_____	%
Net water application rate	(Fn)	_____	in/hr