Table 1. Filtration options for greenhouses and nurseries (reprinted with permission from Ratus Fischer)

WHAT TO FILTER OUT		SCREEN/MESH FILTRATION		MEDIA FILTRATION			MEMBRANE FILTRATION			
		4 – 50 U.S. Mesh (5000 – 300 µm)	50+ U.S. Mesh (<300 µm)	RAPID SAND	SLOW SAND/ BIO-FILTER	PAPER/ FABRIC 5–50 µm	MICRO 1 – 0.1 µm	ULTRA 0.1 – 0.01 µm	NANO 0.01 - 0.001 µm	REVERSE OSMOSIS <0.001 µm
INORGANIC PARTICLE	Debris	++	++	++ Small load only	Not intended for large amounts of solids. Excess solids will clog bio-active zone	++	Particles other than intended for a specific membrane will shorten its life span, or destroy it. Proper pre-treatment of the water is essential.			
	Sand	+	++	++ Small load only		++				
	Silt	–	++	++ Small load only		++				
ORGANIC PARTICLE	Debris	++	++	++ Small load only		++				
	Soil Particles	+	++ Small load only	++ Small load only		++				
	Algae, Biofilm	–	++ Small load only	++ Small load only		++	Will clog membranes			
	Pathogens	–	–	Minor effect	+ in small amounts	Minor effect	+ Except viruses	++	++	++
DISSOLVED INORGANICS	Salts , Iron	–	–	–	++	–	–	–	–	++
	CaCO3 (Hard Water)	–	–	–	–	–	–	–	++	++
DISSOLVED ORGANICS	Humic acids	–	–	–	–	–	–	–	++	++
	Pesticides Herbicides	–	–	–	–	–	–	–	++	++
NOTES		Mainly pre-filtration. Drippers, nozzles need 120+ U.S. Mesh	Substantial dirt loads require back-flush systems	Back-flush standard. Not for heavy dirt loads.	Low flow only. Pre-filtration for heavy dirt loads	Handle heavy dirt loads in one step	Require lower pressure than reverse osmosis. Membranes are tailored to specific applications. Rejection rates (discharged portion of the feed water carrying concentrated waste) generally smaller than for reverse osmosis.			Removes almost everything. Typically back-blended with supply water.

Dimensions: 1 µm = 1micron = 1000 nm = 1/1000 mm = 0.00004 inches.
Legend for efficacy: ++ indicates good, + fair, and – not effective filtration.

Table 2. Key physical water quality measurements available from water testing laboratories

Measurements	Significance	Target range
Total Suspended Solids	Indicates need for additional filtration. High TSS clogs emitters and reduces efficacy of sanitizing agents.	<20mg/L for reuse on non-edible crops <5mg/L for edible crops
Turbidity and UV Transmission	Indicates efficacy of ultraviolet light for water sanitation.	<two nephelometric turbidity units (NTU) or >75% UV transmission
Particle size distribution	Indicates filter pore size required to remove suspended solids	