

Water for Profit

Flushing of micro-irrigation systems



WATERFORPROFIT

Introduction

Flushing is an important part of a preventative maintenance program of a micro-irrigation system. Flushing is necessary to remove build up of sediment, iron and algae within the pipelines. Flushing also removes air that may accumulate and become trapped, especially in laterals, due to slight undulations in the grade of the line. Flushing of mains, submains and laterals should be carried out regularly to reduce partial blocking of pipelines and prevent blockages of emitters.

How often should I flush?

The interval between flushing is closely related to the quality of the water being used (Table 1). However, flushing of mains and submains should be conducted at least once each season and

flushing of laterals should be undertaken at least monthly in most systems. Where poor quality water is used, flushing should be conducted more frequently (e.g. weekly). In all cases, flushing should be undertaken in conjunction with effective chlorine and acid treatments.

How long should I flush?

Flushing velocities need to be at least 0.5-0.6 m/s and preferably >1.5 m/s to effectively scour sediment and remove air from pipelines and laterals. Hence, for a 300 m length of lateral with a flow velocity of 1 m/s, the water should be allowed to flush for at least 300 seconds (five minutes). Where shorter periods are used, the scouring velocity may dislodge sediment within the lateral which may subsequently lodge in the emitter orifice blocking the discharge.

Table 1: recommended flushing interval

Irrigation quality	Water source	Flushing interval
Good	<ul style="list-style-type: none"> Municipal supply Bore water with no presence of iron or magnesium 	12 months 6 months
Average	<ul style="list-style-type: none"> Rivers, creeks or canals which are slow flowing Dams or lagoons in a cold climate where the pumping point is properly placed, taking winds and the possibility of sedimentation into account Effluent water after effective sedimentation and complete biological treatment 	4 months 4 months 4 months
Poor	<ul style="list-style-type: none"> Bore water which is drawn from a poor quality aquifer Rivers, creeks or canals found in hot climates with increased biological growth and no chemical treatment Dams or lagoons in a hot climate. Poor placement of the pumping in the direction of the winds with little or no sedimentation or a soluble content that enables the development of a high organic load. Effluent water after effective sedimentation with little or no biological treatment 	Monthly Monthly Monthly
Very Poor	<ul style="list-style-type: none"> Bore water with a high load of iron or magnesium Rivers, creeks or canals affected by flood flows and lacking sedimentation facilities Dams or lagoons where the water source has been mixed with effluent or flood waters and the pumping point is poorly placed. Effluent water without sedimentation due to water flow and oxygen added. 	2 weeks 2 weeks 2 weeks 2 weeks

Best practice information has been obtained from the Agriculture WA, Hardie Micro-irrigation Design Manual by Michael J Boswell, Fertigation by C Burt, K O'Connor and T Ruehr and the Netafim Australia Drip Irrigation Maintenance Manual and are gratefully acknowledged.

For more details contact the Growcom members access line on 1800 654 222. Disclaimer: This information is provided as a reference tool only. Seek professional advice for irrigation specifics.



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