Water for Profit

FLUSHING OF MICRO-IRRIGATION SYSTEMS

WATERFORPROFIT

Flushing is an important part of a preventative maintenance program of a micro-irrigation system.

Introduction

Flushing is necessary to remove build up of sediment, iron and algae within the pipelines. It helps to remove 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 to prevent blockages of emitters.

How often should I flush?

The interval between flushing is closely related to the quality of water being used (Table 1). However, flushing of the mains and submains should be conducted at least once a 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). Flushing should be undertaken in conjunction with effective chlorine and acid treatments. Determine the concentration of acid needed to lower the pH to a desired value by adding concentrated acid to a 200L drum of the irrigation water until the desired pH is reached.

How long should I flush?

Flushing velocities need to be at least 0.5-0.6 m/s, 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 discharge.

Best practice information has been obtained from 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 Growcom on 07 3620 3844.

Table 1: recommended flushing interval

Irrigation quality	Nature of problem	Treatment
Good	• Municipal supply	12 months
	• Bore water with no presence of iron or magnesium	6 months
Average	• Rivers, creeks or canals which are slow flowing	4 months
	• Dams or lagoons in a cold climate where the pumping point is properly placed, taking winds and the possibility of sedimentation into account	4 months
	• Effluent water after effective sedimentation and complete biological treatment	4 months
Poor	• Bore water which is drawn from a poor quality aquifer	Monthly
	• Rivers, creeks or canals in hot climates with increased biological growth and no chemical treatment	Monthly
	• Dams or lagoons in a hot climate. Poor placement of pumping in the direction of winds with little or no sedimentation or a soluble content that enables the development of a high organic load	Monthly
	• Effluent water after effective sedimentation with little or no biological treatment	Monthly
Very Poor	• Bore water with a high load of iron or magnesium	2 weeks
	• Rivers, creeks or canals affected by flood flows and lacking sedimentation facilities	2 weeks
	• Dams or lagoons where the water source has been mixed with effluent or flood waters and the pumping point is poorly placed	2 weeks
	• Effluent water without sedimentation due to water flow and oxygen added	2 weeks

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