
Driptape clogging and poor irrigation performance: the patented dripline providing a solution allowing durable supply uniformity even in the case of low filtration.

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Abstract

The world's demand for clean water for human consumption is increasing exponentially, relegating lower quality water for agricultural applications. The widespread use of drip irrigation systems has increased annually in an attempt to reduce water use and improve yield. This does not come without the challenges faced using dirty water. Traditional drip tape does not have a high resistance to dirty water and it is easily clogged, resulting in poor irrigation performance. Also filters are often not used due to the added expense, or are simply not available to the farmer.

eXXtreme tapeTM is the Irritec-patented unstoppable light dripline with continuous flowpath and with the most extended filtration surface in the world. It is an evolution of the world renowned Irritec tape especially designed for "difficult waters", as it allows irrigation with less purified or less filtered water. It has two continuous filtering barriers along each side of the flowpath, allowing the filtered water to flow through the two continuous lateral supply channels. These interconnected channels, common to all emitters, distribute filtered flow with constant uniformity, regardless of the position of the emitter.

Since its filter is 20 to 50 times longer than traditional drip tape, the risk of clogging is proportionally reduced and the product works uniformly, until the complete occlusion of the filters.

Therefore, perfect emission uniformity is achieved until the end of the season.

During laboratory testing carried out by the Center for Irrigation Technology, Fresno, CA, 70 mesh sand media was applied to eXXtreme tapeTM and it did not experience any occlusion. Therefore, we can say that 120 mesh filtration may be sufficient for eXXtreme tape, rather than 150 mesh filtration applied to traditional tape. Also, the product potentials have been confirmed during customer tests carried out in Italy and in Peru.

The higher plug resistance of this dripline guarantees the performance of the irrigation system avoiding the decline of perfect functionality at the end of the season. At the end of summer when the water coming from public irrigated consortia or private storage tanks is reduced

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in availability and quality (very often richer in algae and mucilage as well as silt) the use of eXXtreme tapeTM is particularly useful. Its plug-resistance even with water with a high number of suspended particles allows to reduce filtration, i.e. the backwashing operations of the automatic filtration systems with consequent water saving. eXXtreme tapeTM is particularly recommended for irrigation of small plots typical of the African villages where water is scarce and not very clean and there is a lack of energy for the perfect operation of automated filtration systems.

Considering it has durability and resistance to plugging, in many cases eXXtreme tapeTM may be reused for more than one season. Last but not least, the longer life eXXtreme tapeTM compared to the traditional product allows a 28% reduction in the amount of plastic laid on the field and a reduction of approximately 0.34 kg of CO₂ emissions per hectare of cultivated land due to the plastic reduction.

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