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Agricultural irrigation equipment — Guideline on the implementation of pressurized irrigation systems —

Part 2: Drip irrigation

Matériel agricole d'irrigation — Lignes directrices relatives à la mise en œuvre des systèmes d'irrigation sous pression —

Partie 2: Irrigation goutte à goutte

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Contents

Page

Foreword

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This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

A list of all parts in the ISO 24120 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Dwindling vital natural resources, such as land and water, and rising world population, pose a constant threat that can develop into a future food and water crisis. Given the limited availability of water and land resources, the amount of food grown today needs to be increased to meet the demands of tomorrow. Reduction of available water for human consumption needs to be addressed. As direct consumption of fresh water by populations cannot be decreased, the amount of water consumed by agricultural uses needs to be reduced and allocated for domestic or industrial use.

Drip irrigation addresses water scarcity and other environmental considerations. Its use can save large amounts of water (over 50 % of water can be saved for certain crop types) and increase yields.

Drip irrigation not only addresses the need to reduce water consumption and increase yield, but also requires less labour and energy for operation, leading to lower costs to farmers due to reduced usage of labour, fertilizers and other chemicals.

Drip irrigation relates to sustainability agriculture issues, and can be used in dry areas, in saline soil with saline water, and in steep-sloped topographies, where other irrigation methods cannot be practiced without using pressure compensated units.

Drip irrigation is easy to handle and operate once installed. It is suitable for automation and remote operation by computer or mobile phone. The system's simplicity makes it easy to install, operate, maintain and repair.

Other than irrigation, the drip irrigation method is used as a delivery system for fertilizers and other agrochemicals. Drip irrigation's advantage as a delivery system is its ability to optimize fertilizer usage, and distribute it exactly where needed, in the root zone, while minimizing its release to the environment.

Adoption of drip irrigation can help achieve sufficient fresh water availability for domestic use and sufficient food quantity and quality and quality for reasonable pricing, while increasing farmers' income with yield increases and cost reduction, and ensuring food security.

Drip irrigation systems also have limitations mainly related to high investment costs and extensive maintenance requirements necessary to achieve and maintain the irrigation system performance. Maintenance routines include water filtration, field inspection, maintenance of driplines, main line flushing, and chemical water treatment.

The purpose of this document is to provide a guideline on the implementation of drip irrigation.