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THE POSITIVE EFFECT ON THE ENVIRONMENT OF OSMOCOTE® CONTROLLED RELEASE FERTILIZERS IN ORNAMENTAL HORTICULTURE

Joan VERHOEVEN
Scotts Professional, Netherlands

International Fertilizer Industry Association
NEW AG INTERNATIONAL

The positive effect on the environment of Osmocote® Controlled Release Fertilizers in Ornamental Horticulture

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Miami, 23 March

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Introduction

The positive effect on the environment of Osmocote® controlled release fertilizers

- Current application methods of fertilizers in Ornamental Horticulture
- Research Methodology & Partners
- Results Research & Field Experiments 2005-2009
- Conclusion: Limited Leaching and greater fertilizer efficiency with the use of Controlled Release Fertilizers

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Introduction

The application methods for fertilizer used in Ornamental Horticulture do vary…

Greenhouse
Mainly Water Soluble Fertilizer programs (based on water quality)

- Drip irrigation
- Overhead sprinkling
- Ebb & Flood systems

Outdoor Nursery
Mainly CRF Use

- Incorporated
- Topdress
- Plant hole dibbling




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Background

Intensified research by Scotts to prove fertilizer efficiency

- Osmocote® has been used close to 50 years in Ornamental Horticulture
- Major steps are gained with efficient and enhanced fertilization due to CRF optimal release patterns and WSF programs based on water quality
- But even more fe. water regulation institutes demand hard data to prove efficiency of fertilization and limited impact on the environment
- Scotts has intensified CRF efficiency research during 2005-2010

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Research Methodology & Partners

Joint research & methodology with leading universities/institutes to prove fertilizer efficiency

Methodology

- Compare CRF use with WSF/Liquid use
- Compare the effect of application methods
- Compare different pot sizes
- Capture nutrient runoff
- Measure plant growth and quality

Partners in Research:

- Cornell University North America
- Oregon State University North America
- Ornamental Hort Institute "Bad ZwishenAhn" Germany
- LVG Hannover-Ahlem Germancy
- PPO Lisse (WUR/Wageningen University)
- PCS Destelbergen Belgium

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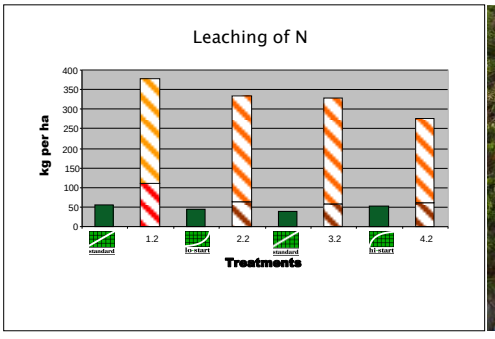
Results

CRF incorporated into growing media resulted in about 7x less leaching



Bad ZwischenAhn

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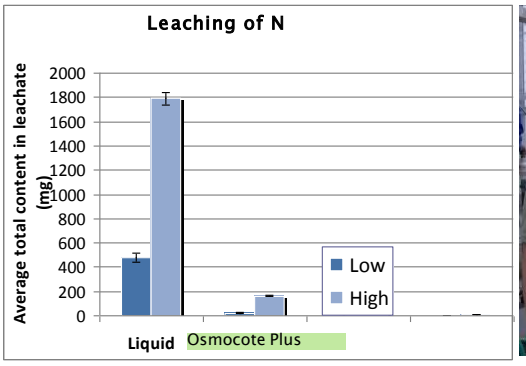
Results

US Greenhouse trials: A 9x decrease of Total N in leachate with CRF vs. liquid fertigation



Mattson @ Cornell 2009

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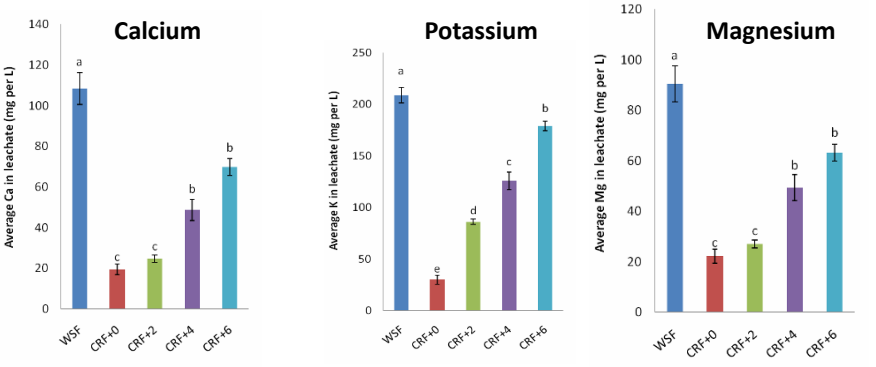
Results

Also a much higher efficiency with Calcium, Potassium and Magnesium



Bridgen & Mattson @ Cornell 2008

Letters represent mean separation comparison using Tukey's HSD, alpha=0.05

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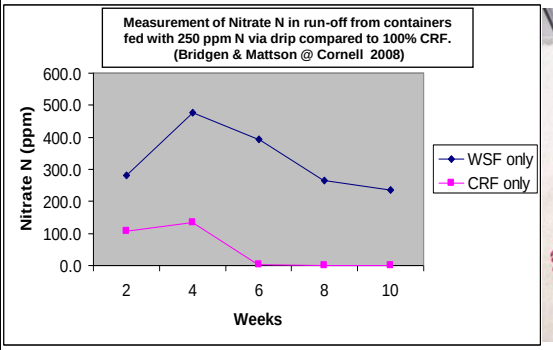
Results

Scotts Osmocote® reduced leachate in runoff vs. WSF (Garden Mum Production)



Bridgen & Mattson @ Cornell 2008

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Conclusion

With fertilizer programs and CRF the industry shows environmental stewardship

- Controlled release fertilizers can reduce leaching about 7x-8x compared with Liquid/WSF overhead use
- In outdoor nursery conditions a 100 % fertilization with CRF show the best results for fertilizer efficiency: plant growth and reduced leaching
- Fertilizer efficiency and plant growth/quality seem optimal in a mix of 75 % CRF and 25 % WSF in greenhouse conditions
- Scotts Professional will proceed and is prepared to share the results and execute additional research where-ever

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