



K+S KALI GmbH

17. Tagung Arbeitskreis Blattdüngung, Dülmen

Quality enhancing effects of foliar fertilizers on
vegetables and arable crops in Belgium

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- Areal in Belgium
- Requirements
 - Specificities: cauliflowers and leek
- Our position
- Field research (summary)
- Topics and problems for the horticulturists

Statistics for the Benelux

- **Belgium**

- ± 95 % of the areal (40000 ha) = open field vegetables
- < 5 % = green houses

- **The Netherlands**

- ± 50000 ha and 25000 ha of onions (arable crop)
- ca 4600 ha green houses

K+S Benelux bv / K+S KALI GmbH

Areal in Belgium



Vegetables in the open field (in ha)	Belgium
Fresh market, Deep-freeze and cannery	40000
asparagus	90
beans	6075
Brussels sprout	3000
cauliflowers	4350
carrots	3000
Chicory (Brussels endive)	3200
leek	4000
peas	9375
spinach	3500
onions	
Vegetables in green houses (in ha)	1126
cucumber	
peppers (paprika)	95
cabbage lettuce (salad)	257
tomatoes	523





- Very important for deep-freeze industry
- Some specific problems and of course specific solutions...



- **Worldwide production of 30.000 ha**

- France = most important producer (6000 ha) followed by Belgium (4000 ha)

- (typical is 5 or 6 ha per exploitation)

- (business for specialists)



- **Sales in the Benelux area**

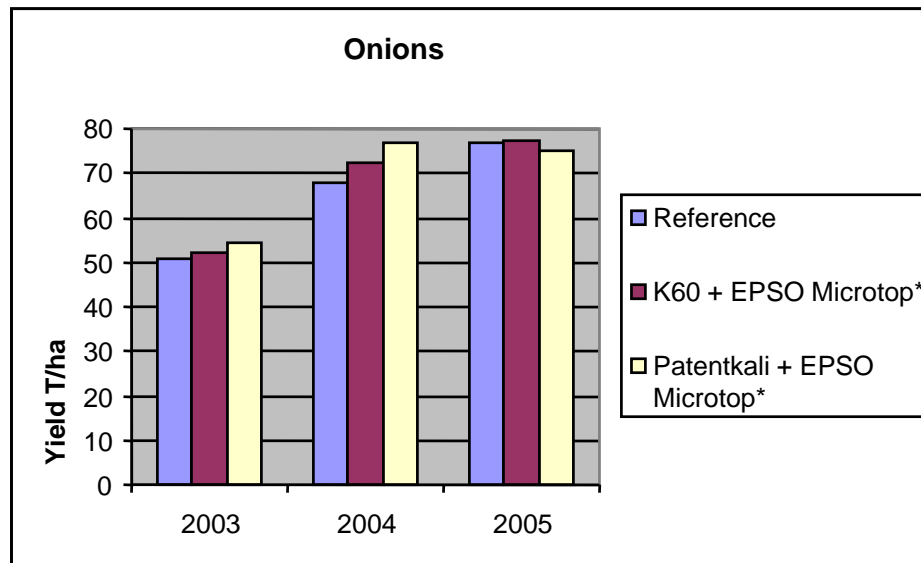
- Patentkali & ESTA Kieserit
- EPSO Microtop (15 % MgO, 31 % SO₃, 1 % B, 1 % Mn)
- EPSO Top (16 % MgO, 32 % SO₃)

(in The Netherlands, EPSO Top mainly for green houses)



- Results of 3 year based trials

- Onions:



- Results of 3 year based trials on quality parameters.
- **Cauliflowers:** 2 applications with EPSO Microtop (2 x 25 kg/ha)

Cauliflowers

	Leafmass*	Leafmass*	Leaf colour**	Class I (%)	Class II (%)
	26/04/2005	6/05/2005	9/05/2005		
Reference	6,5	6,5	6	79	19
EPSO Microtop	8	8	6,5	87	12

* 1 = few

** 1 = light-coloured

* 9 = very much

** 9 = dark-coloured

- Results of 3 year based trials

Spinach: 3 applications with EPSO Microtop: 1 x 10 kg/ha & 2 x 15 kg/ha)

Treatment	Leaf colour *	Leaf colour*	Leaf colour*	Yield in kg/are	Class I (%)	Class II (%)
	19/04/2005	26/04/2005	9/05/2005	9/05/2005	9/05/2005	9/05/2005
Reference	5,3	5	5	156	0	100
EPSO Microtop **	6	7	7	187	38,3	61,8

* 1= light coloured

* 9 = dark
coloured



Untreated



Treated with 3 x 10 kg EPSO

Microtop

Observation: yellow colour on the margin of the leaf



- **Open field cultures**

- Reduction of fertilizers with respect to the norms
- Strong belief in soil analyses
- Increase of organic sources and bioconverted effluents
- Slow release fertilizers and adapted fertilizers



- Price evolution

Tomatoes: production price (=1,25 - 3,5 €/kg) is often below consumer price

Leek: consumer price = 0,3 -0,4 €/kg

Industrial vegetables: a slight increment in producer prices

- Limited nitrate levels in the soil (not exceed 90 kg nitrate N/ha)
- Restriction of nitrogen and phosphate



- Focusing on quality parameters (vitamins in vegetables are actually an issue!)
- Upcoming 'niche' crops such as baby leaf, rucola and courgettes



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- Thank you for your attention !

(many thanks to Luc De Rooster, Proefstation Groenteteelt, in providing some of the general pictures)