

**NBR Nordic Beet Research Foundation**



**„Désherb“ avenir II“  
2011 May 13<sup>th</sup>**

Weed control with tight limitations  
and the way forward

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Weed control with tight limitations

Picture of **today**



Picture of today



**Weeds**

Broadleaf: POL spec. CHEAL,  
MAT spec. GALAP,  
GER spec. SOLNI,  
AETCY, CIRAR,  
BRANA, Bolters

Grass weed minor importance:  
Poa annua, Elymus Repens



Picture of today



**Weed control:**

Post emergence	> 98%
Over all spray applications	> 98%
Number of applications: 3-4	> 90%
Mechanical - row cleaning before row closure	30% - ?
Difficult years, spraying finish to early then	? >50%



Picture of today 

**Application technique:**

Nozzles: Flat fan or low drift

Liquid: 100 ltr – 150 ltr/hectare

Speed: 6 – 8 km/h

Improvements: to reduce drift



Picture of today 

**Sprayers**

Lift mounted or Trailers	12 - 36 m
Few Air assisted	<10%

Improvements made on:

- Capacity and boom stability
- Liquid system
- Intelligence systems

Filling and cleaning equipment **mandatory** –  
(filling and cleaning in the field or concrete places with collection tanks  
wastewater sprayed in the field or collected) (DK)



Picture of today 

So far, we are very much alike other countries



Picture of today 

<b>Herbicide Regulation</b>	Annual	application
Phenmedipham:	6 ltr	-
Phen+Des:	1,8 ltr	0,6 ltr
Metamitron	3 ltr	1 ltr
Safari	20-30 g	10-15 g
Ethofumesate	0,142 ltr	-
Clopyralid	0,25 ltr	4 <sup>th</sup> year



Picture of today 

<b>Herbicide Regulation</b>	Annual	application
Phenmedipham:	<b>Bandspray only</b>	
Phen+Des:	1,8 ltr	0,6 ltr
Metamitron	6 ltr	3 ltr
Safari	120 g	30 g
Cloridazon	7 kg	4 kg
Clopyralid	Spot treatment	

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Picture of today  

**Herbicide Regulation**

What we have not shown

We do not have access to

Differences  
e.g. approach to water environment  
Natural conditions sets the agenda

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Weed control..... **the way forward**

Picture of **tomorrow**





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Picture of tomorrow 

**Short term 3-5 years**

Other active ingredients	No
New advanced formulations	Option
Herbicides + Mechanical solutions	Option

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Picture of tomorrow



**Middle term 5-10 years**

- Sensor technique - Intelligent systems!
- Advancements in application technique!
- New herbicide options?
- Biological systems – growing technique?



Picture of tomorrow



**Long term 10?-50 years**

- Individual target systems
- Intelligent boom systems
- New herbicide options
- Advancements on autonomic systems
- Ground vehicles managed by helicopters



Picture of tomorrow



**Demand**

- Support highest possible productivity
- Cost effective in all conditions
- High efficiency in all weather conditions
- High capacity and precision
- Compatibility with other row crops




**Integrated weed control**







**How to go?** →

**Normal way** →

**We know!**




**How to go?** →

**Green way** →

**We don't know yet?**




**How to go?** →

**Green way** →

**Glyphosate application in early spring**

- a) Overall spray with reduced dosages
- b) Band spray in row – new technique + band spray inter row
- c) Band spray in row – new technique + mechanical weeding – new technique



**Picture of tomorrow**




**Adaptive Surveying and Early Treatment of Crops with a Team of Autonomous Vehicles**






Picture of tomorrow



**Thank you for your attention**

Pictures: Hardi International, Frank Poulsen Aps, ASETA, NBR

