

# Efficacy of fluazinam for control of potato late blight (*P. infestans*) in Danish field trials

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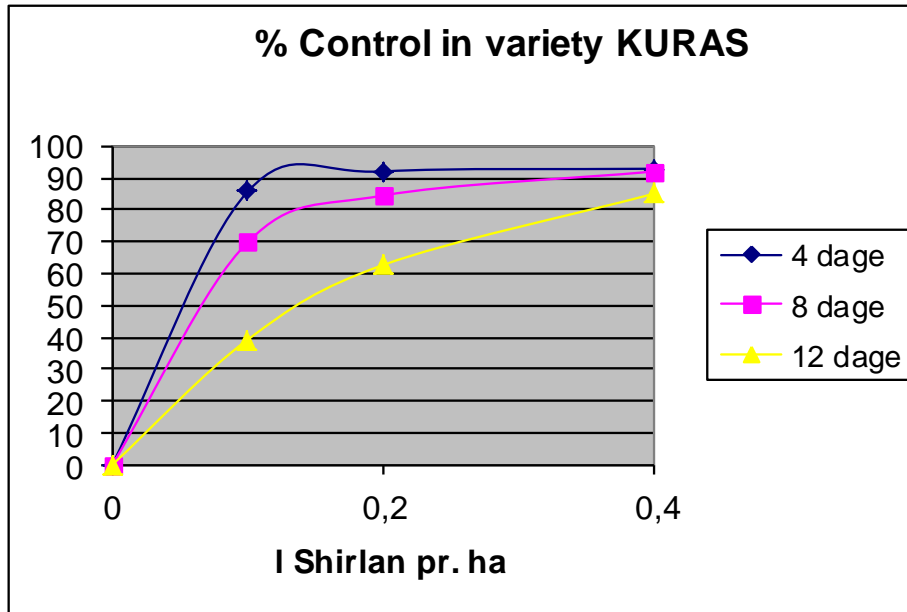
EuroBlight Workshop, Limassol, Cyprus 14<sup>th</sup> May 2013



AARHUS UNIVERSITY

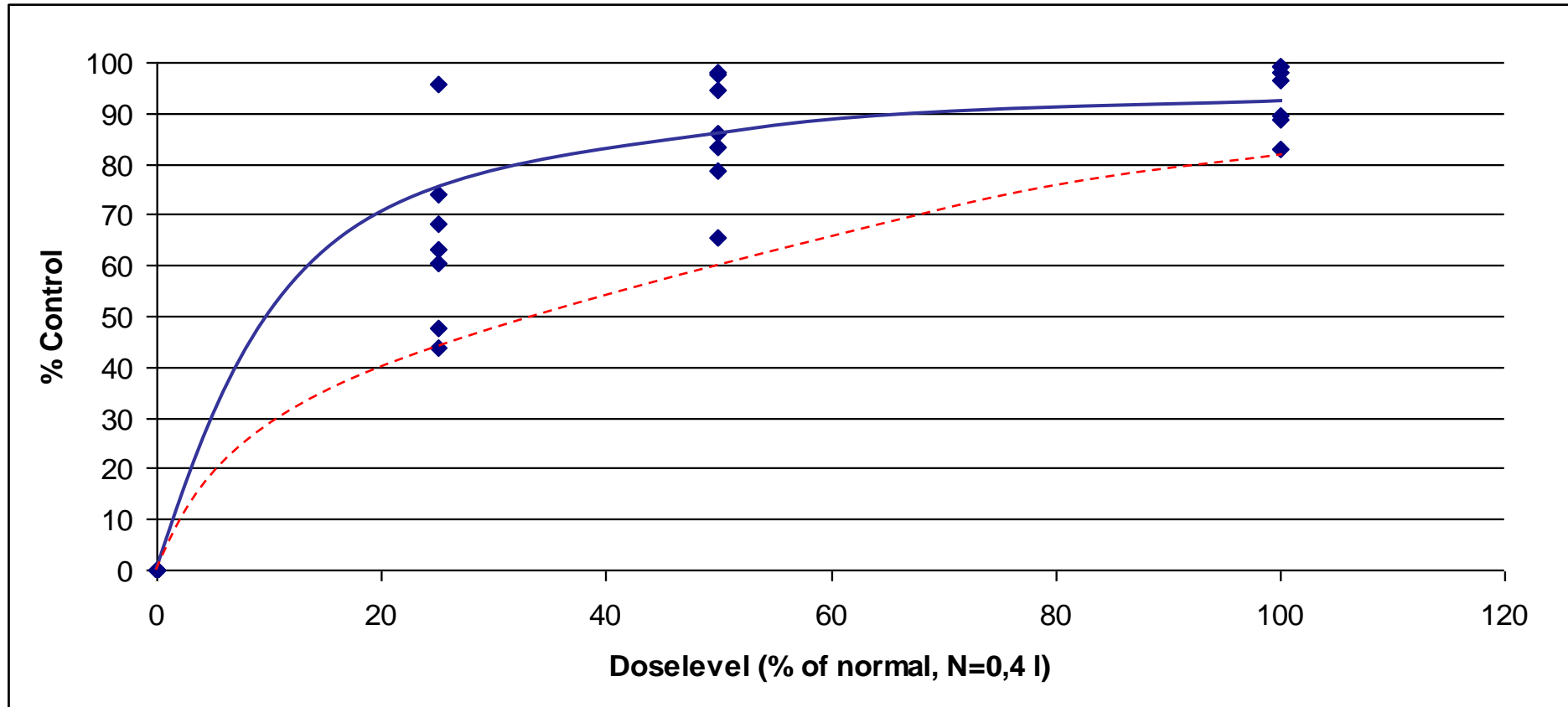
Department of Agroecology

# Situation < 2006



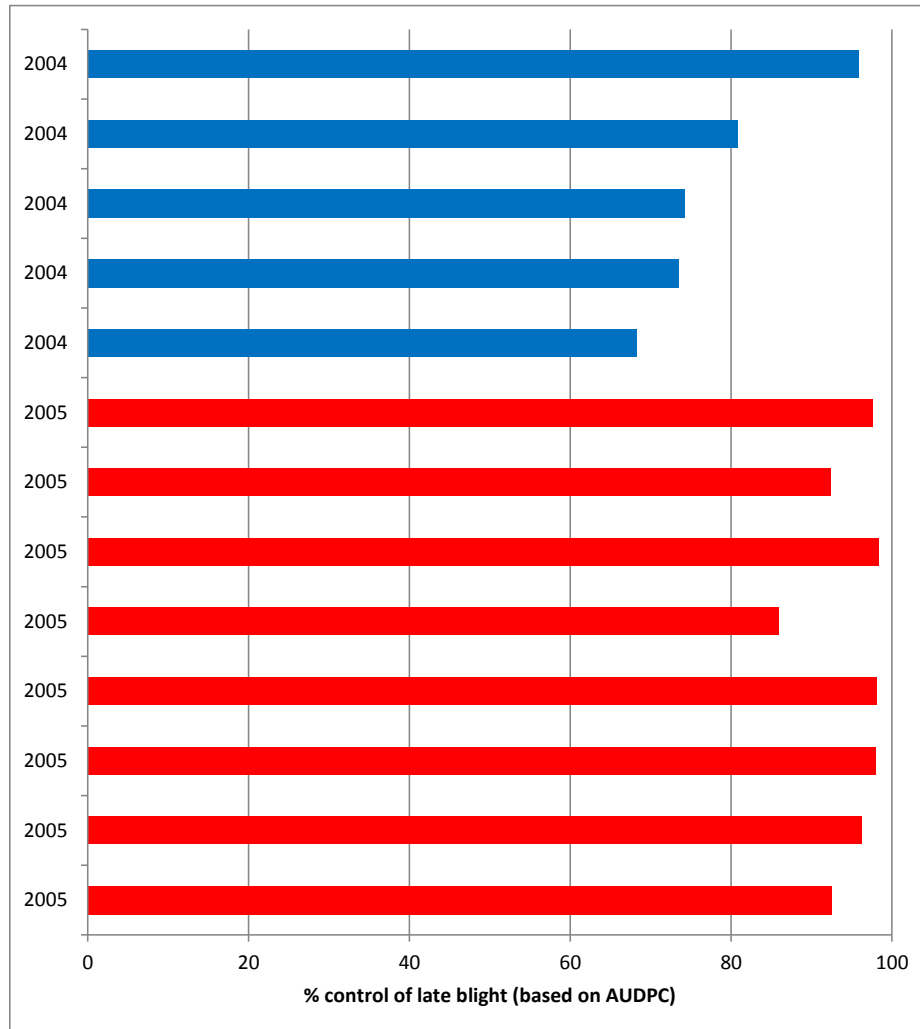
- Shirlan (0,4 l/ha) and Dithane (mancozeb) main products on Danish potato market
- High effect against LB of Shirlan

# Dose-response curve for Shirlan (before 2007)



----- Dose-response curve for Dithane NT

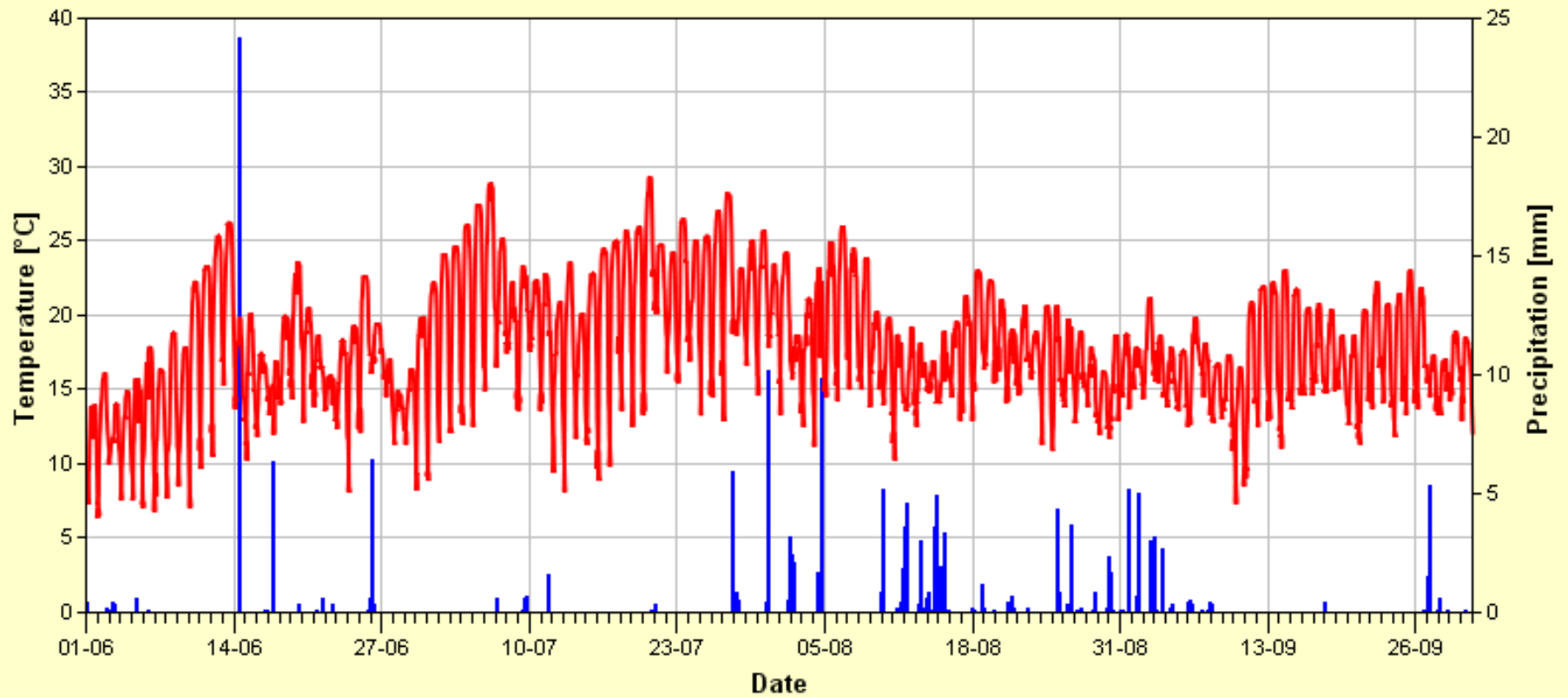
# Effect of Shirlan (0,4 l/ha) field trials < 2006



- Field trials in susceptible starch varieties
- Most trials at Flakkebjerg Research Centre
- Artificial inoculation in spreader rows
- 12 sprayings/season
- 7 days intervals

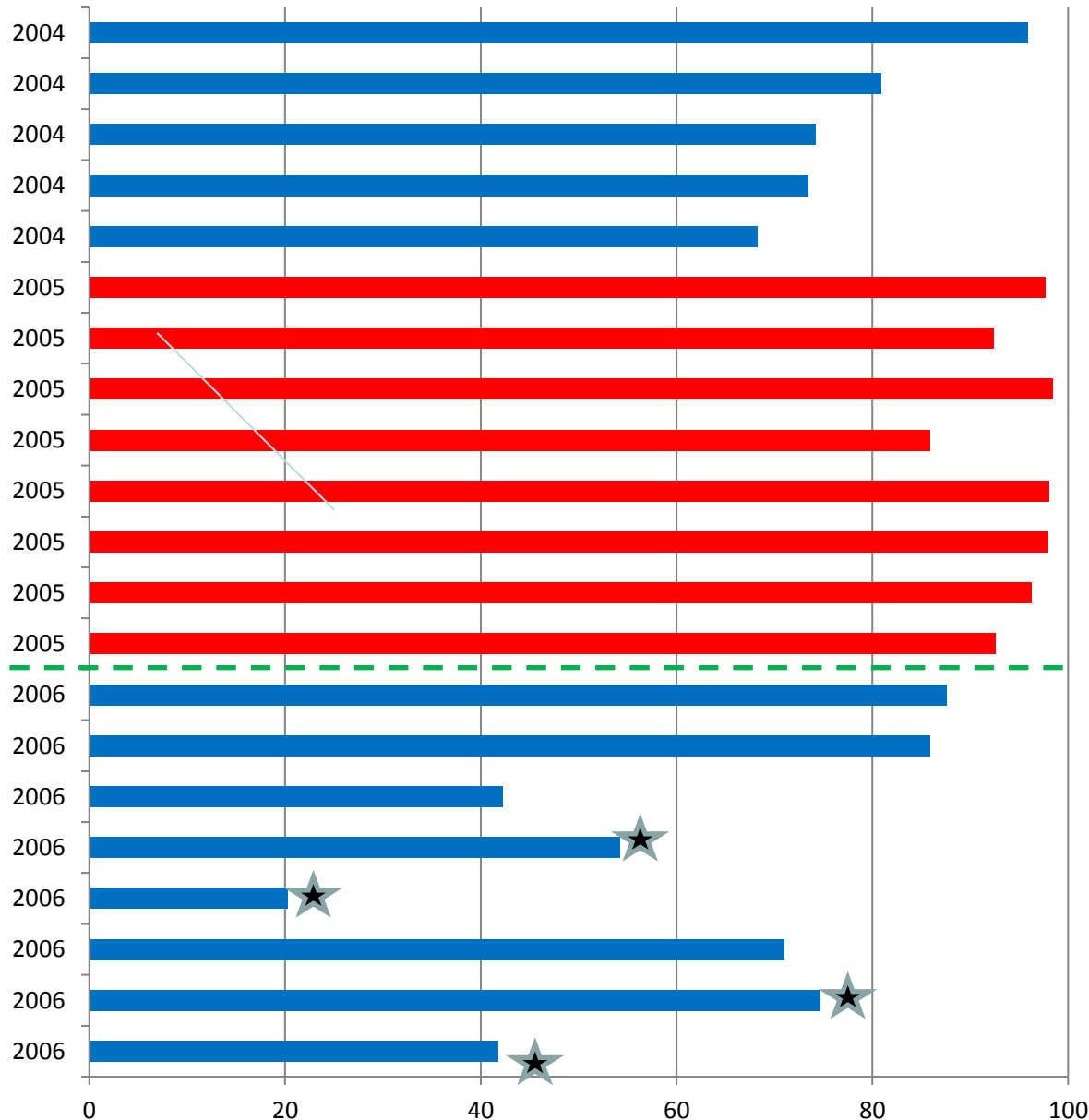
Calculation of pct. control based on AUDPC values

### Weather data from Flakkebjerg



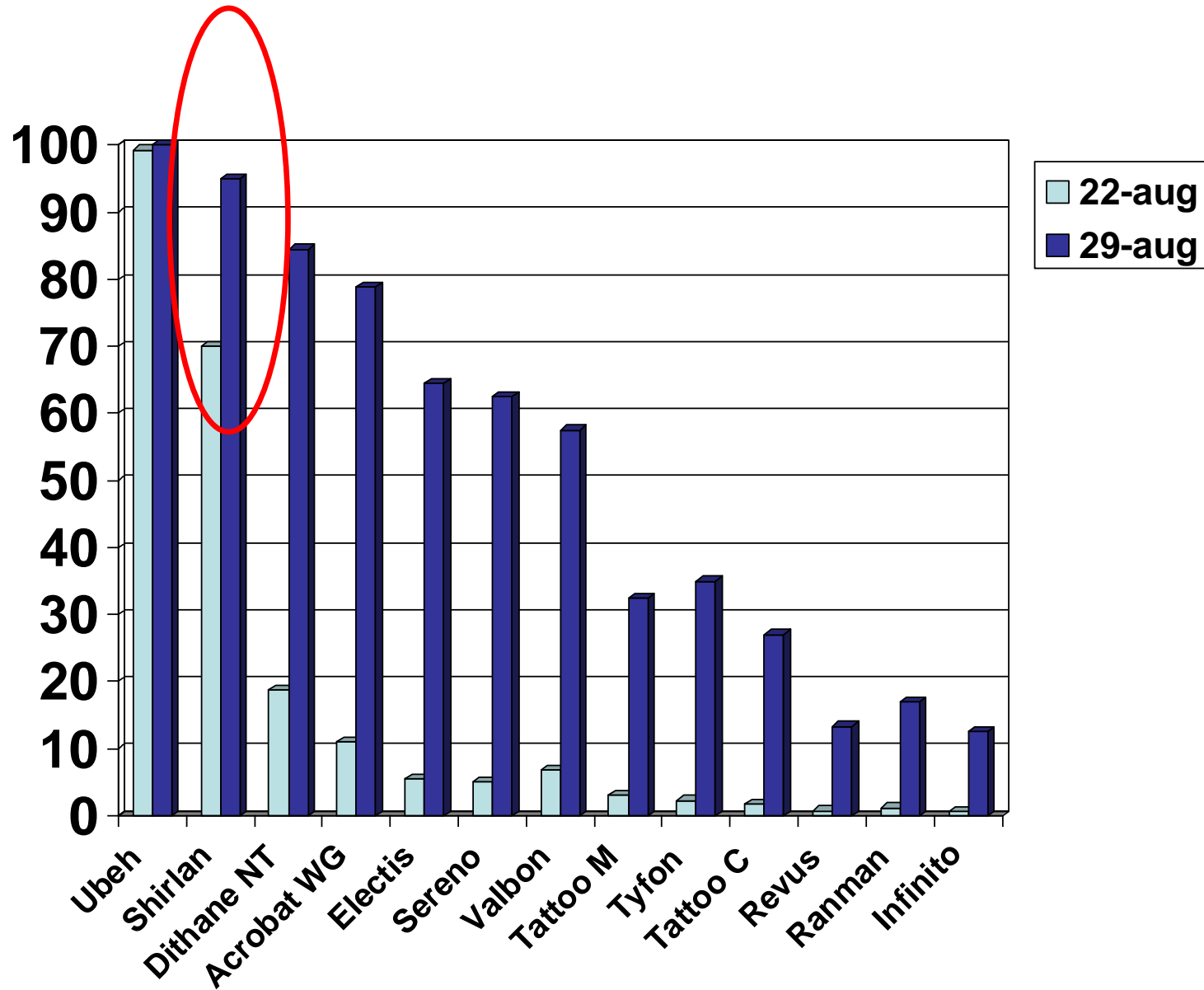
■ Temperature observed    ■ Temperature forecasted    ■ Precipitation observed    ■ Precipitation forecasted

# Effect of Shirlan 0,4 l/ha field trials 2004-2005-2006

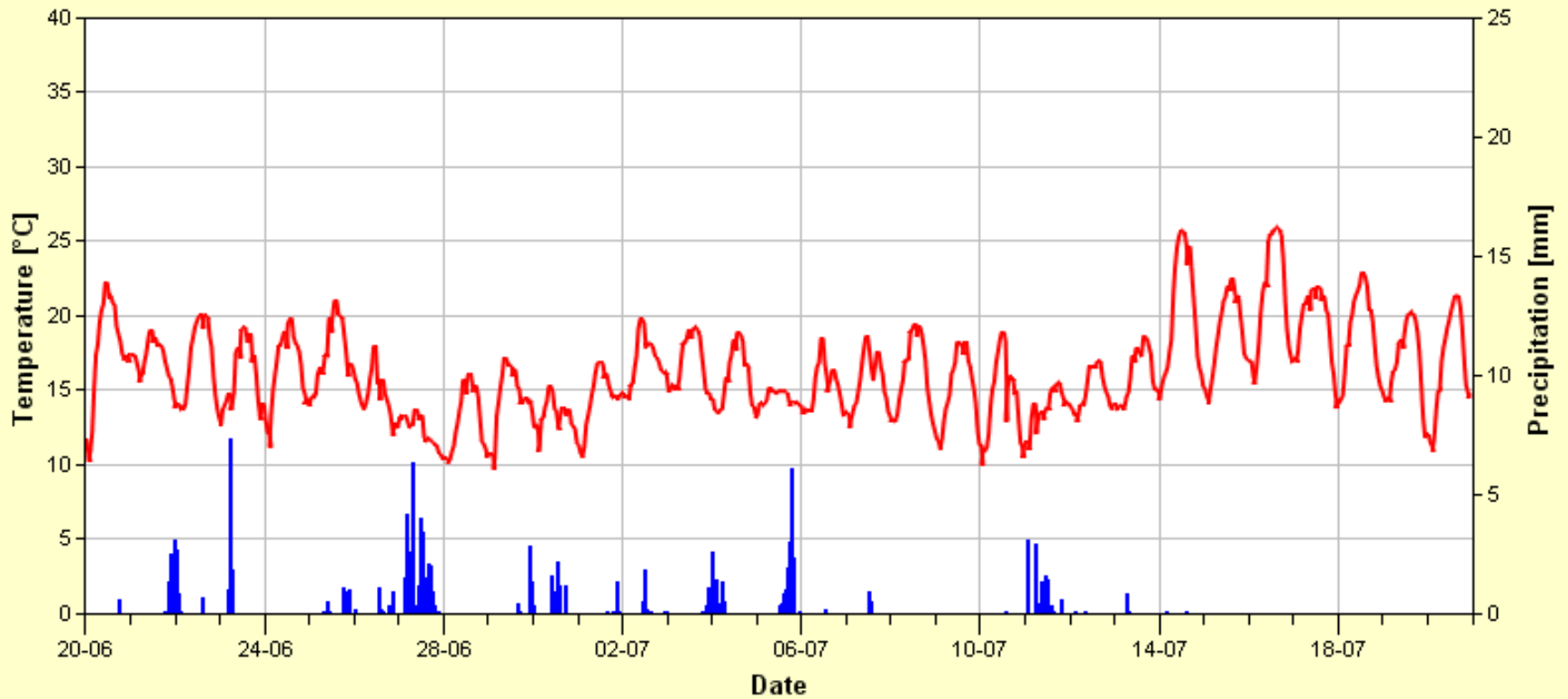


- Low effect (20-54% control) observed **2006** in 4 trials
- Most trials at Flakkebjerg Research Centre ★
- Artificial inoculation in spreader rows
- 12 sprayings/season
- 7 days intervals

# Attack of late blight 22/8 and 29/8 2006.



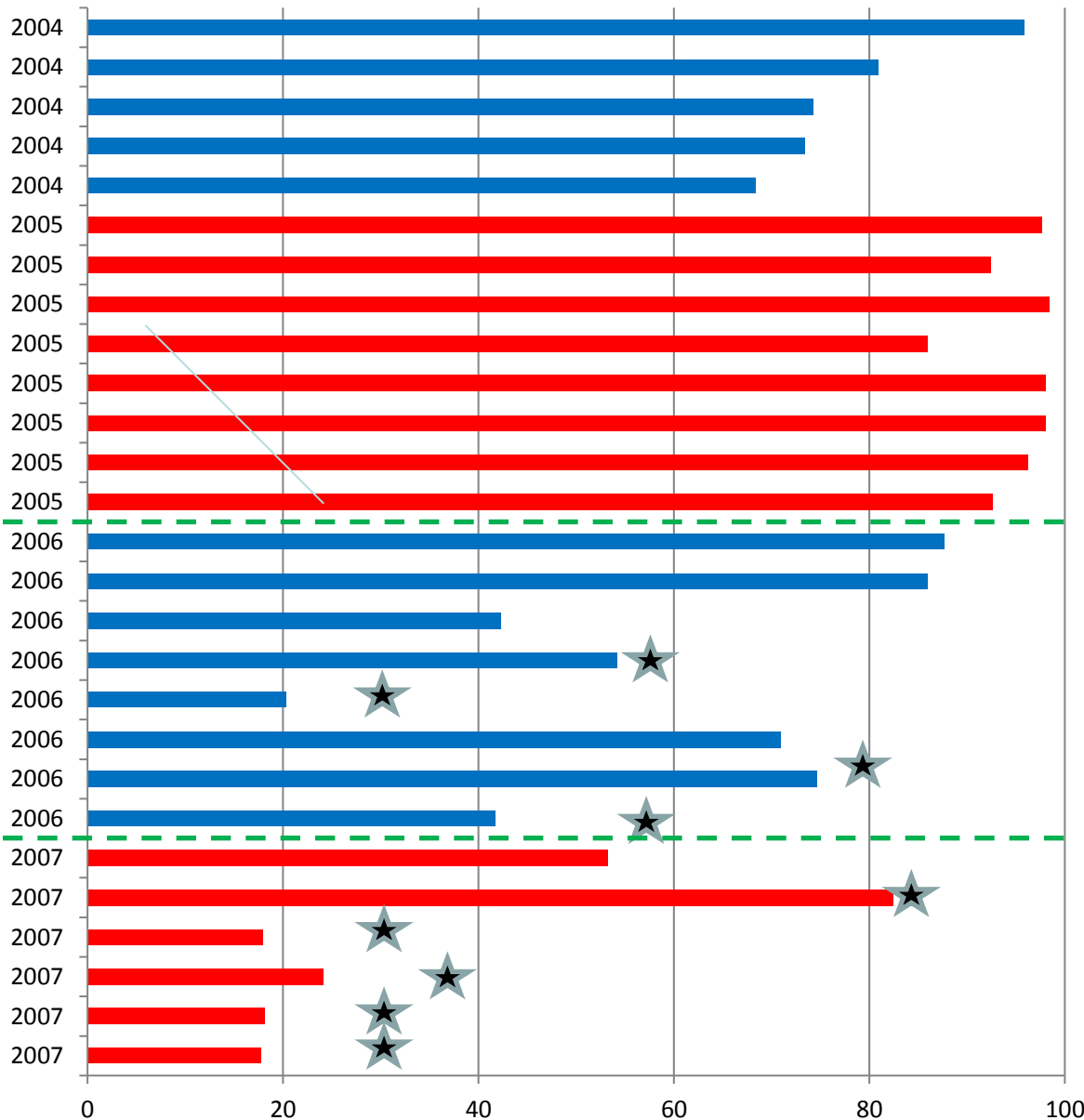
### Weather data from Flakkebjerg



■ Temperature observed   
 ■ Temperature forecasted   
 ■ Precipitation observed   
 ■ Precipitation forecasted

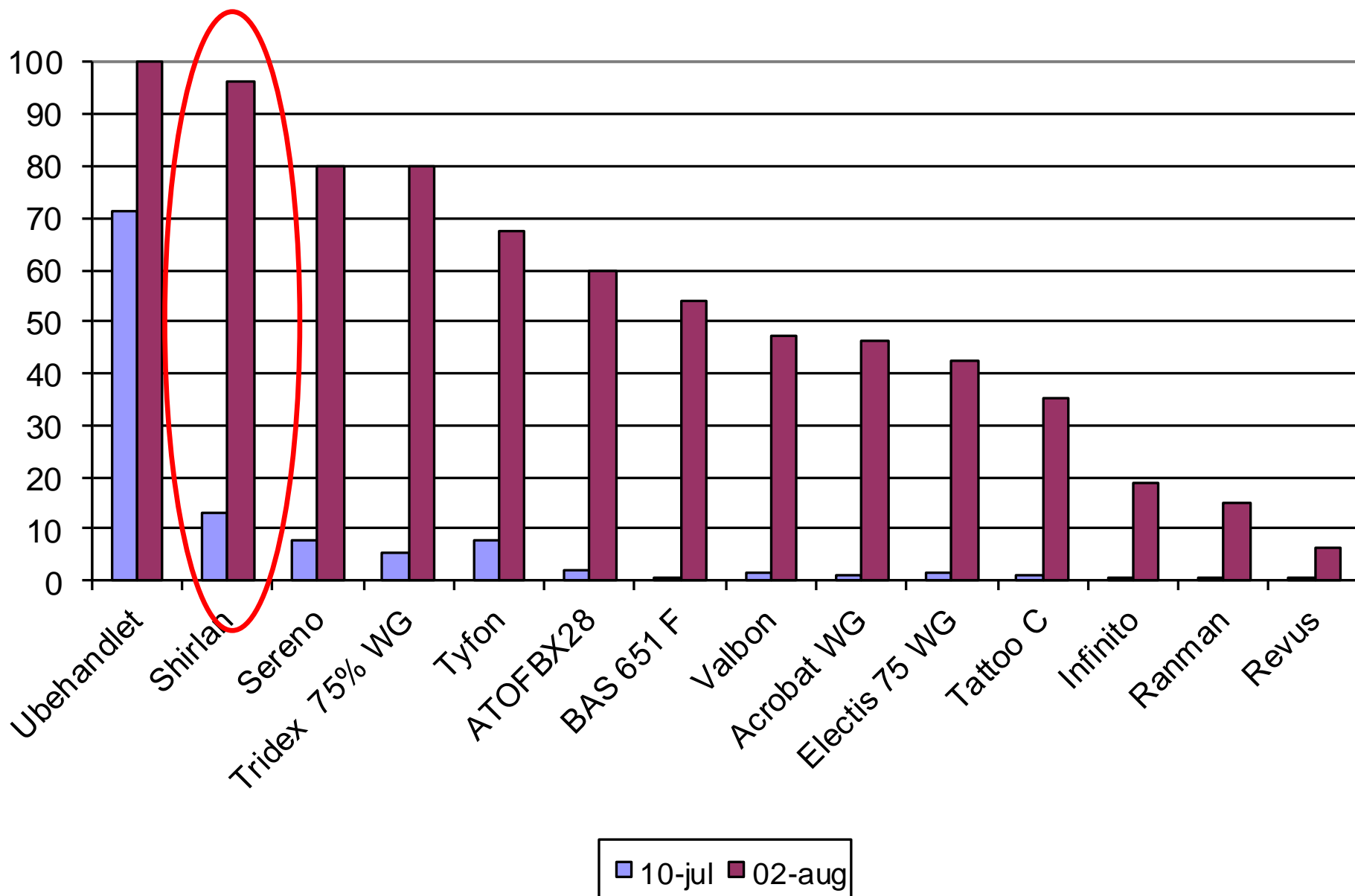


# Effect of Shirlan (0,4 l/ha) field trials 2004-2007



- Low effect (18-53% control) observed **2007** in 5 trials
- Most trials at Flakkebjerg Research Centre ★
- Artificial inoculation in spreader rows
- 12 sprayings/season
- 7 days intervals

# Attack of late blight 10/7 and 2/8 2007





# Flakkebjerg

Artificial inoculation of one single plant per plot or spreader rows



OLEVA

BINTJE

BINTJE

OLEVA



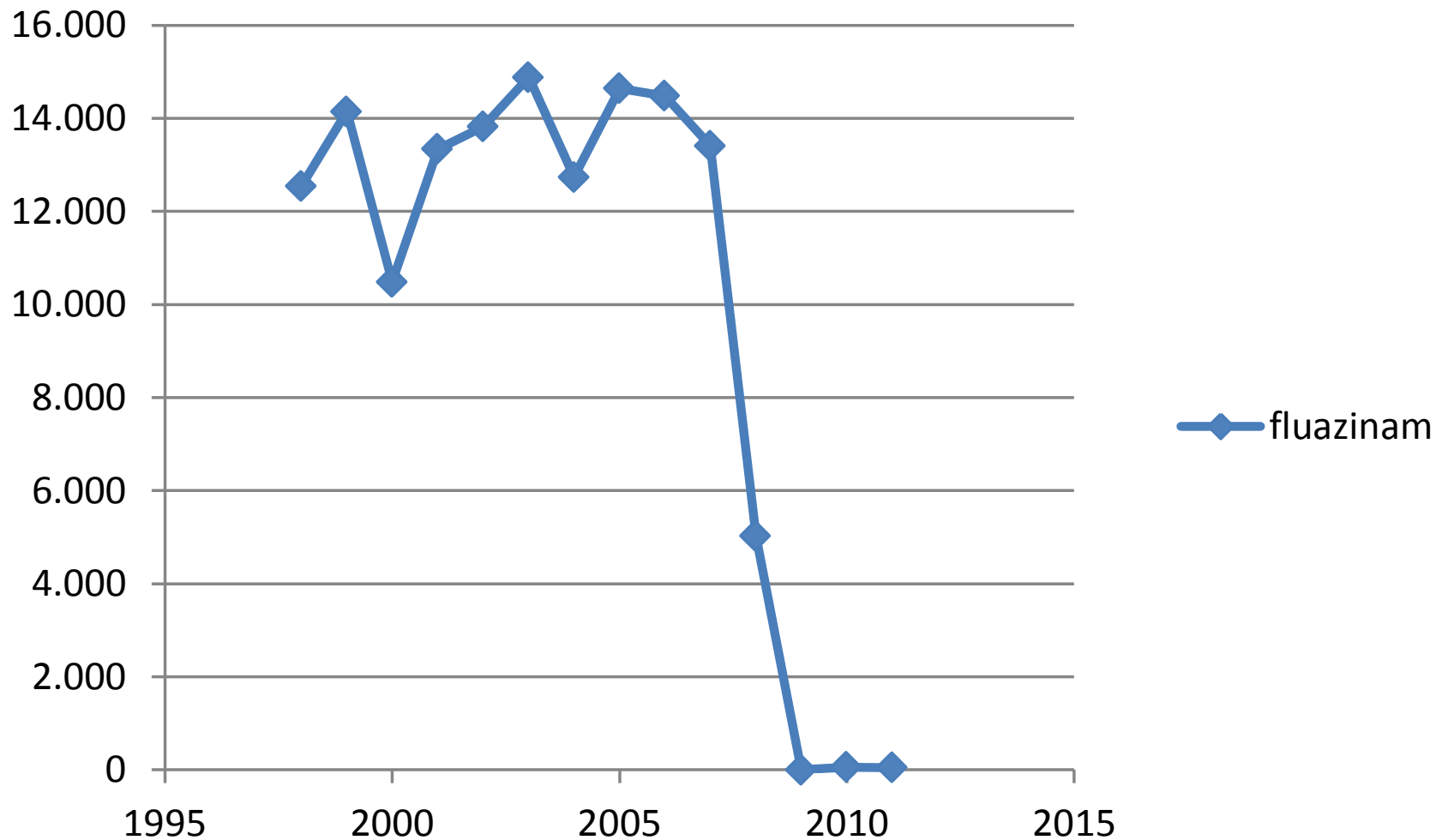
# Isolates used for field inoculations

isolate	2004	2005	Used as inoculum in field trials at Flakkebjerg						
			2006	2007	2008	2009	2010	2011	2012
From 2003	x	x							
From 2003	x	x							
Bintje 05-2			X	X					
Bintje 05-3			X	X					
Bilbo 05-1a			X						
Alpha 05-1a			X						
Wiesent 05-2b				X					
Kardent 05-1a			X	X					
Kuras 05-2			X						
Producent DK 05-1c			X						
Dianella 05-03			X						
07562-1-312					X				
07562-1-107					X				
07562-1-203					X	X	X	X	X
07562-1-305					X				
Bintje -M- mark Jynde vad					X			X	X
Q-mark-Wiesent Jynde vad					X	X	X	X	X
LM 2 Jynde vad					X	X	X	X	X
DK08-32						X			
DK08-93						X	X		X
DK08-118						X	X	X	X
DK09-21							X	X	X
11-PI-03 Hartvig									X
11-PI-04 Dianella									X

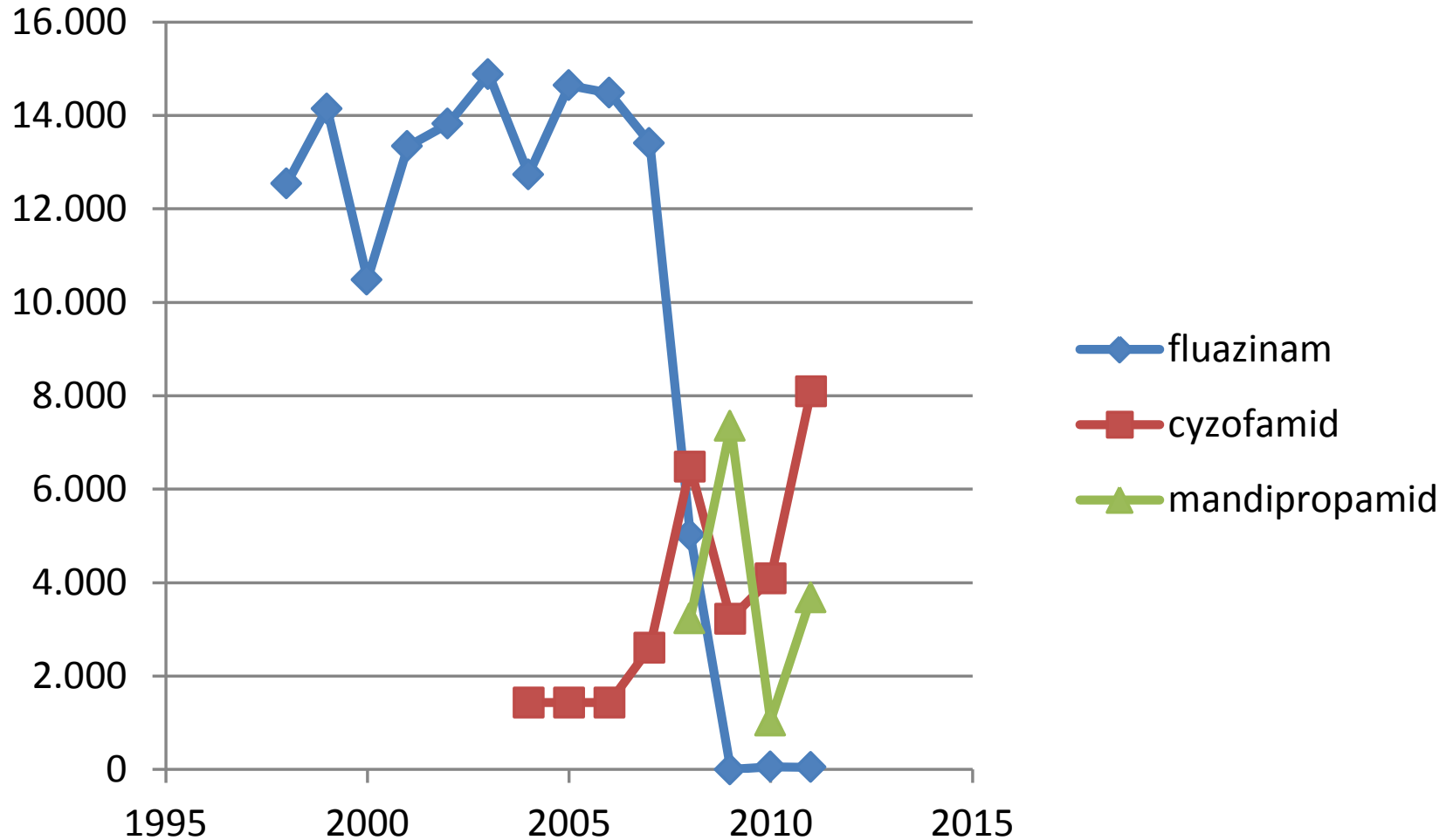
Isolates from Flakkebjerg 2007 tested by Syngenta: No signs of reduced sensitivity (high end of normal range)

 Genotype test by Geert Kessel, Wageningen and David Cooke (Hutton Institute): No green33 or blue13

# Sales of fluazinam in DK 1998-2011



# Sales of LB fungicides in DK 1998-2011



Source: [www.middeldatabasen.dk](http://www.middeldatabasen.dk)



# **Conclusions *fluazinam***

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- Stable and high effect before 2006
- Low-medium effect in many trials 2006-2007
- Mainly in inoculated trials at Research Centre Flakkebjerg
- Variation in effect 2008-2011 (low-moderate high)
- High effect 2012

# Conclusions *fluazinam*

- Inoculated trials
  - New inoculum 2006-2007
  - New (different) again from 2008
  - No signs of reduced sensitivity (Syngenta test)
  - No green32 or Blue13
- Continuous and high disease pressure at Flakkebjerg
- Problems in susceptible varieties with rapid growth at start of *P.i.* epidemic
- Changes in recommendations
  - No use in high risk periods and periods with active new growth

