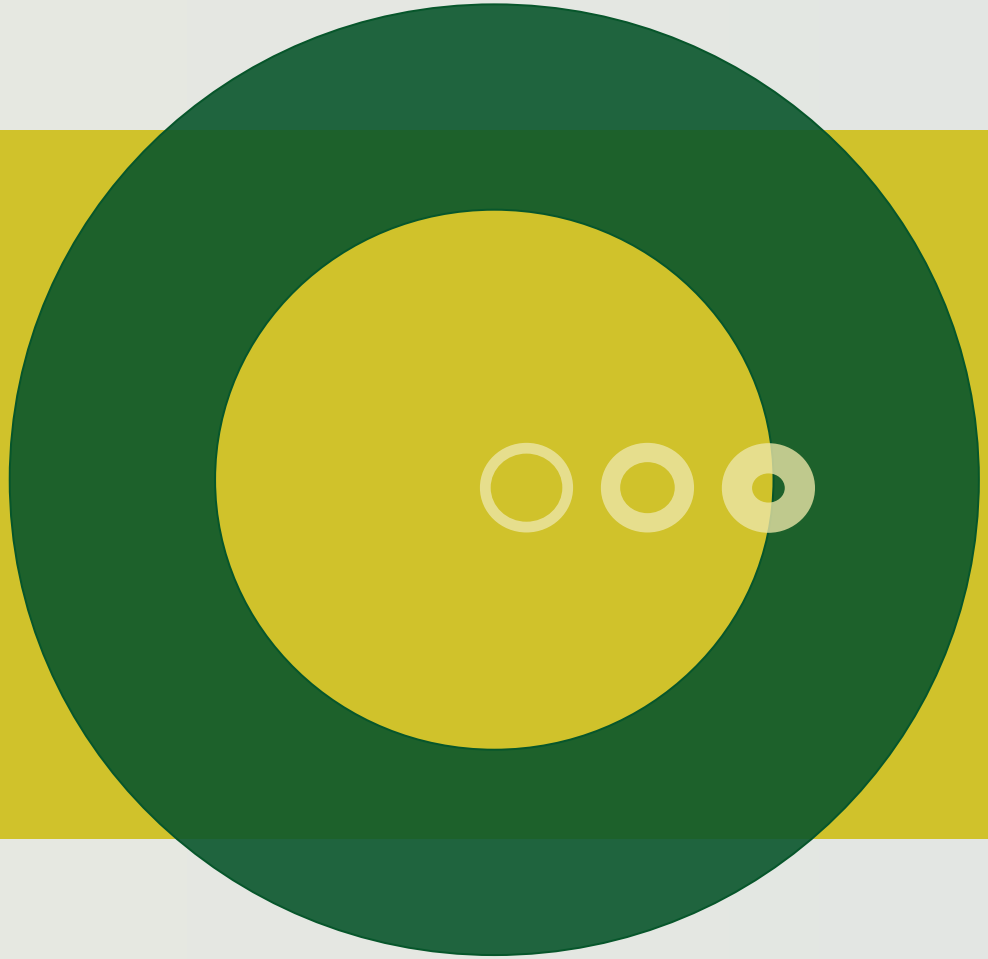
VIDENCENTRET FOR LANDBRUG

Forebyggelse af virus med olie og insekticider



PARTNER I
DLBR
DANSK
LANDBRUGSRÅDGIVNING

A Literature Review of Insecticide and Mineral Oil Use in Preventing the Spread of Non-persistent Viruses in Potato Crops

2010

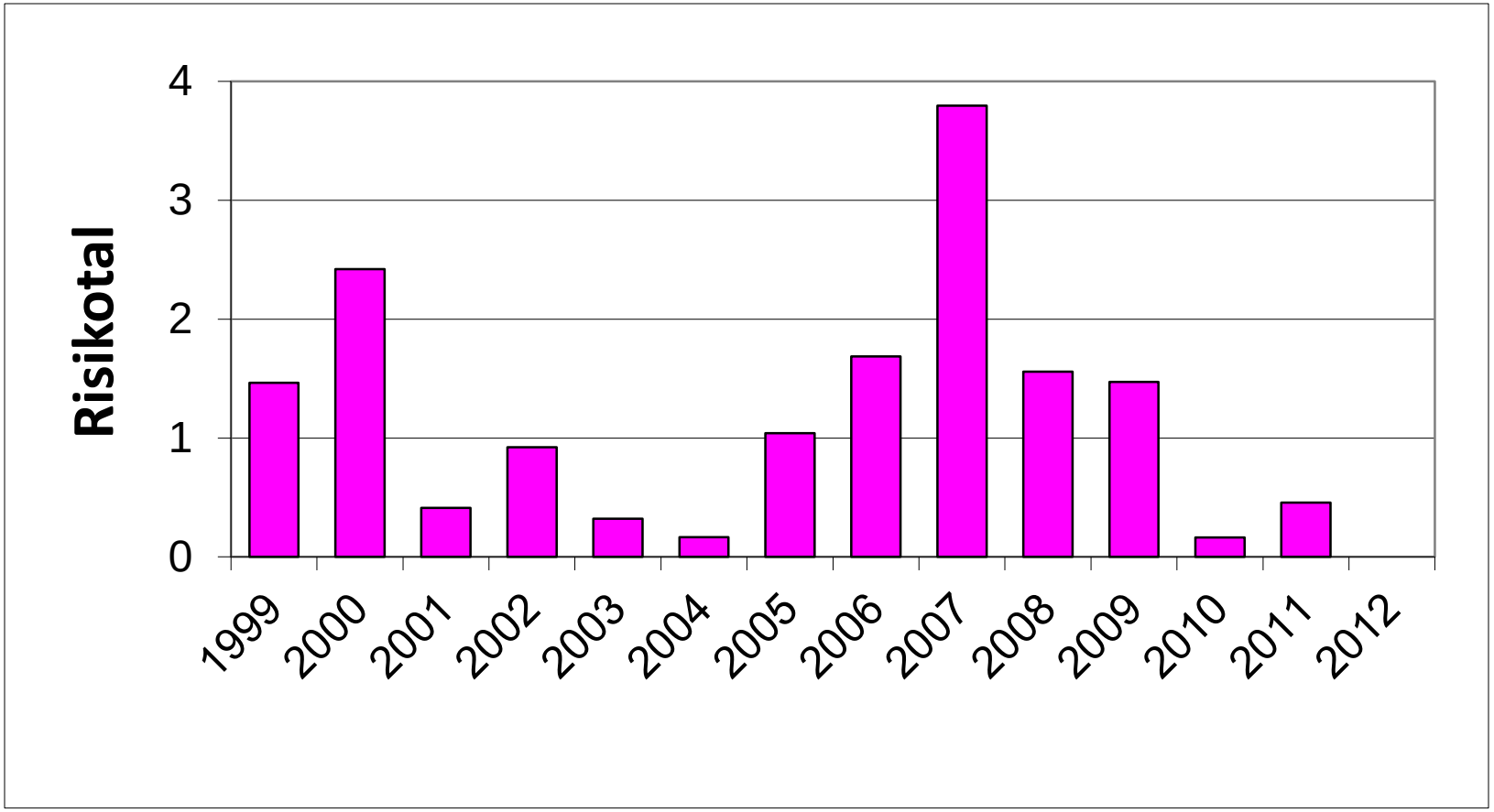
Report Authors: Ahmad Al-Mrabeh[1, 2], Eric Anderson[3], Lesley Torrance[1], Andy Evans[4] and Brian Fenton[1]

8.3. Discussion

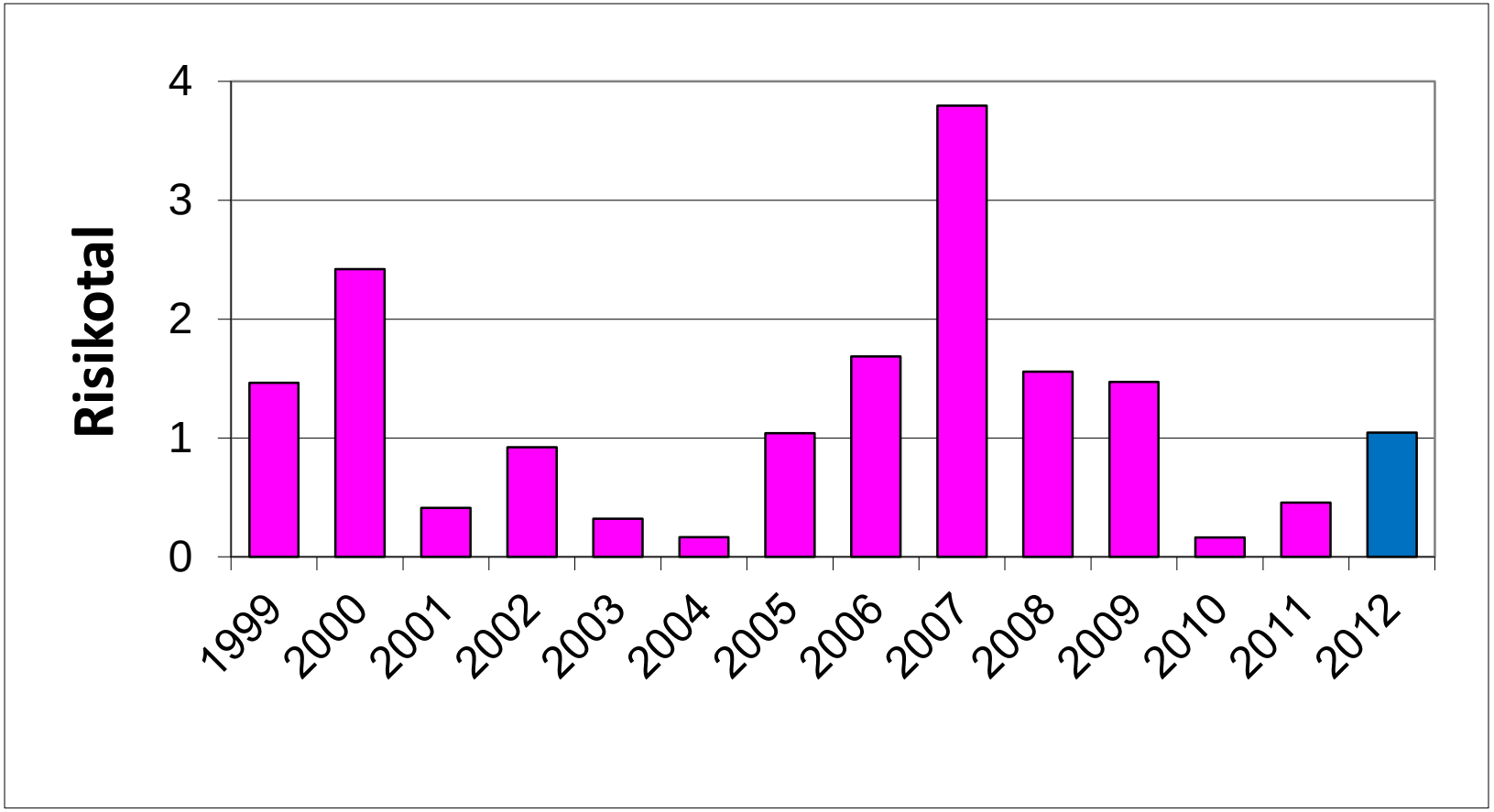
Controlling non-persistent viruses in potato crops using insecticide or mineral oil sprays is difficult. The total numbers and diversity of aphid vectors which can participate in the transmission process, along with the lack of information about the exact mechanism of transmission, are just some of the factors which compound this problem. There is no single highly effective insecticide or mineral oil which completely suppresses vector transmission in the field. Weidemann (1988) concluded that different control methods should be combined to interrupt the PVY^N epidemic cycle, as any single method will have limited effect on its spread. Mature plant resistance can decrease PVY^N spread later in a growing season, thus pre-sprouting potato seeds and early planting combined with early burn down will be effective in decreasing PVY^N incidence in potato crops. In agreement with Weidemann (1988), we conclude that there are many reported strategies for decreasing virus transmission, but none completely prevent it. It is difficult to conclude from the literature which is the best current strategy as contradictory data exist. This conflict can be attributed to the experimental conditions and that they were conducted in different countries and at different times. Even in the same country, many factors affecting virus transmission can change over a 50 year period. For example, it has been reported by Hollings

Ugentlig risikotal for PVY

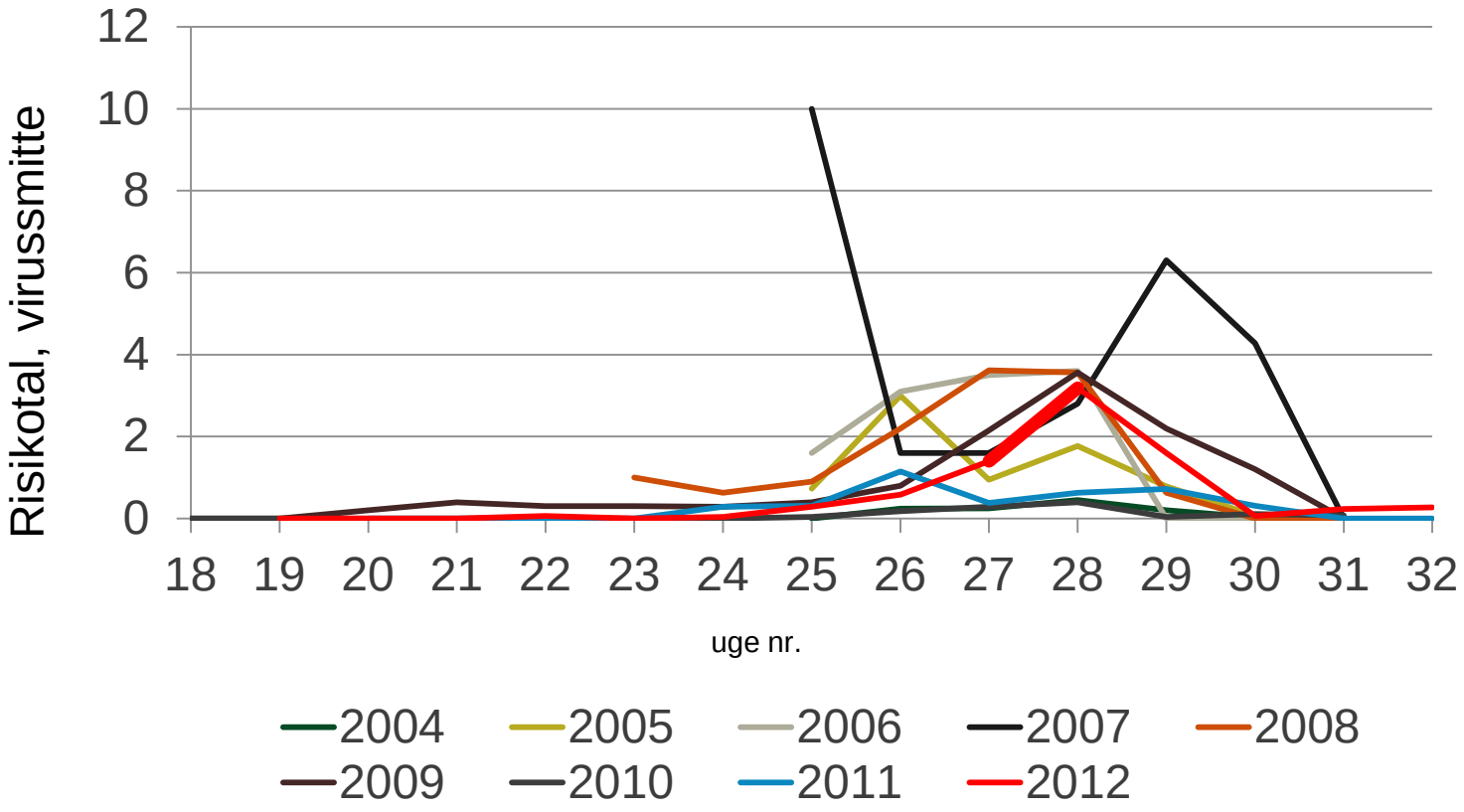
Gennemsnitlige innfektionsrisiko



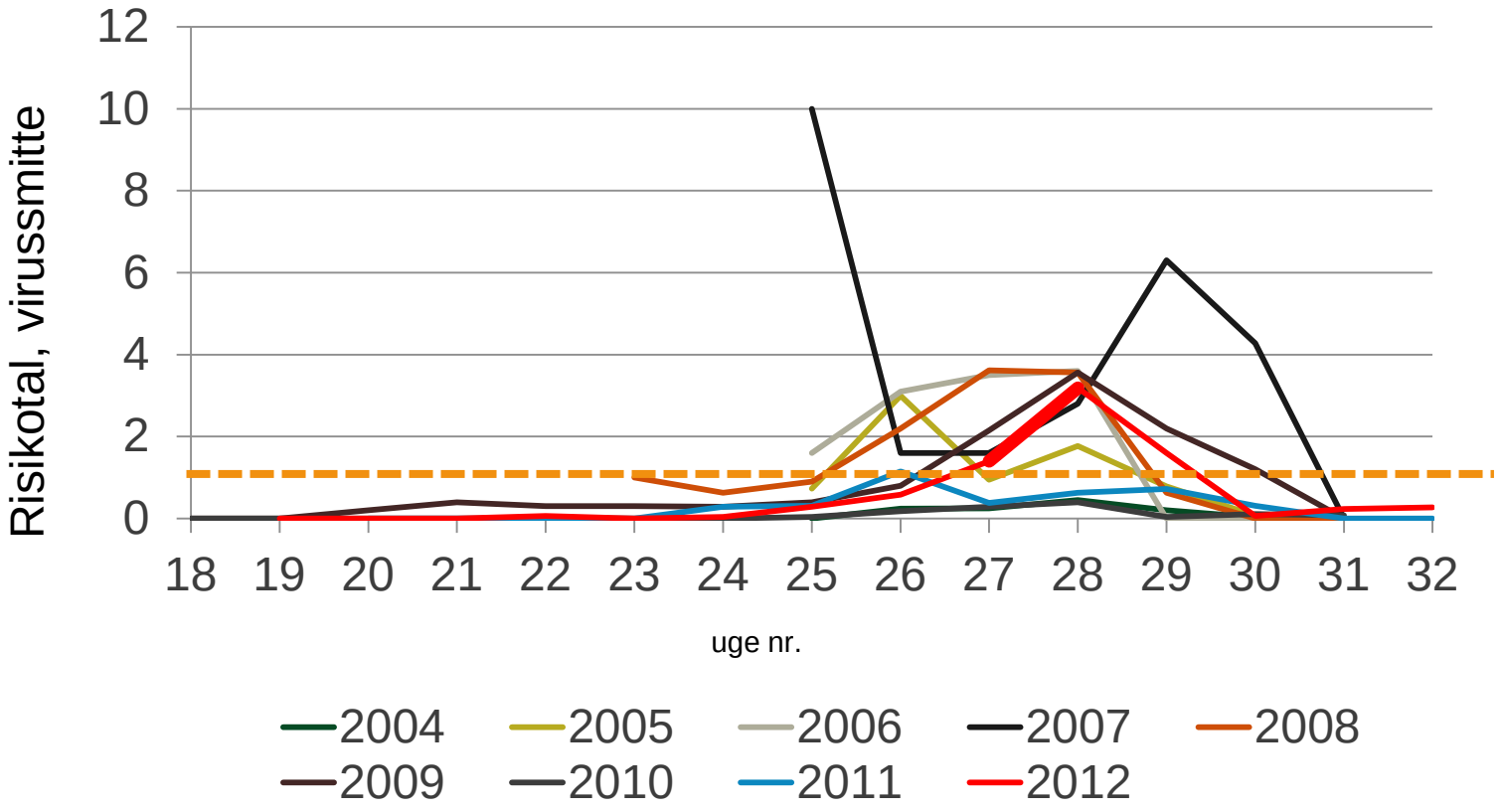
Gennemsnitlige innfektionsrisiko



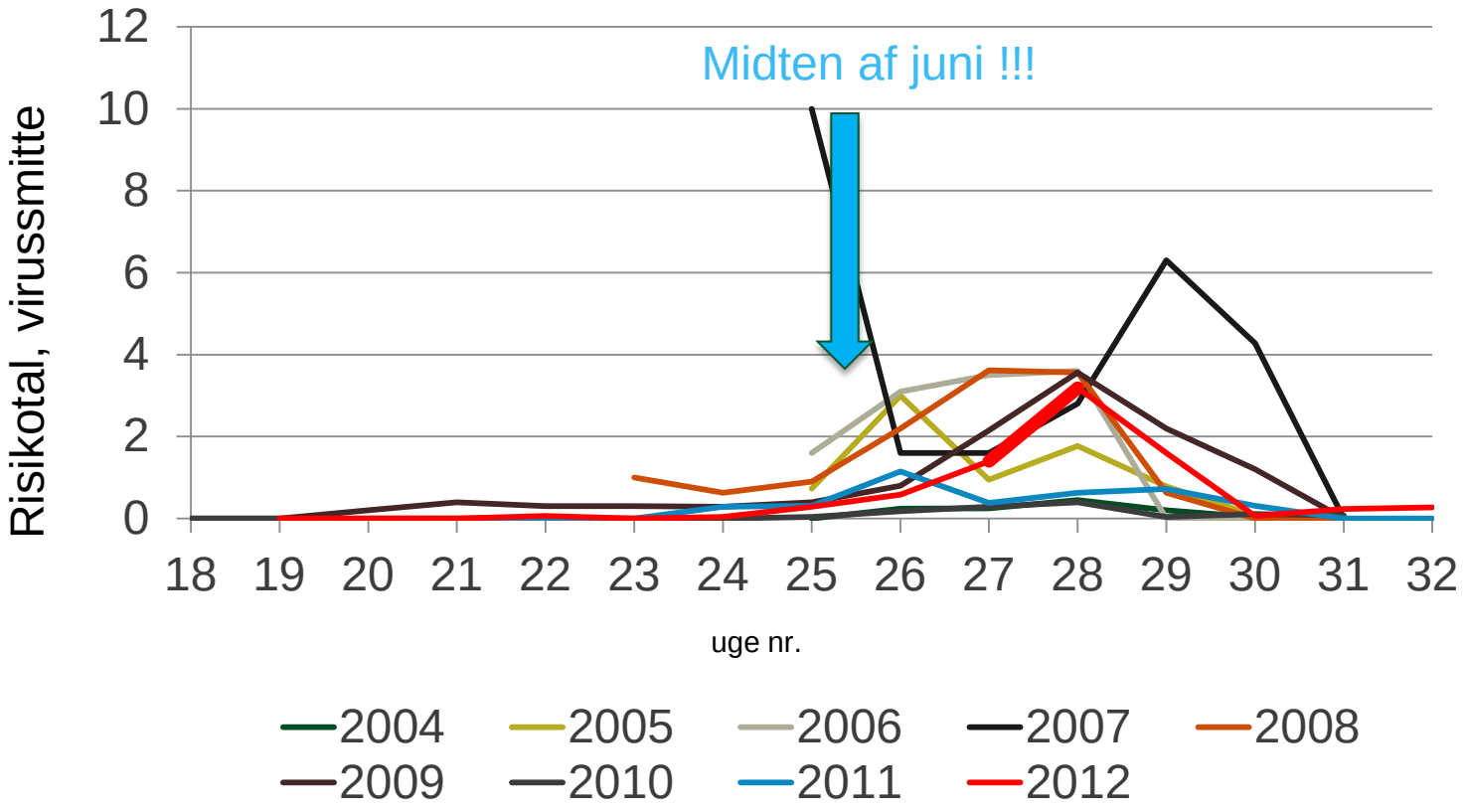
Infektionsrisiko i løbet af sæsonen



Risiko > 1 ⟹ Gør noget!



Gør noget!!


Midten af juni !!!
Risikotal, virussmitte
12
10
8
6
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2004
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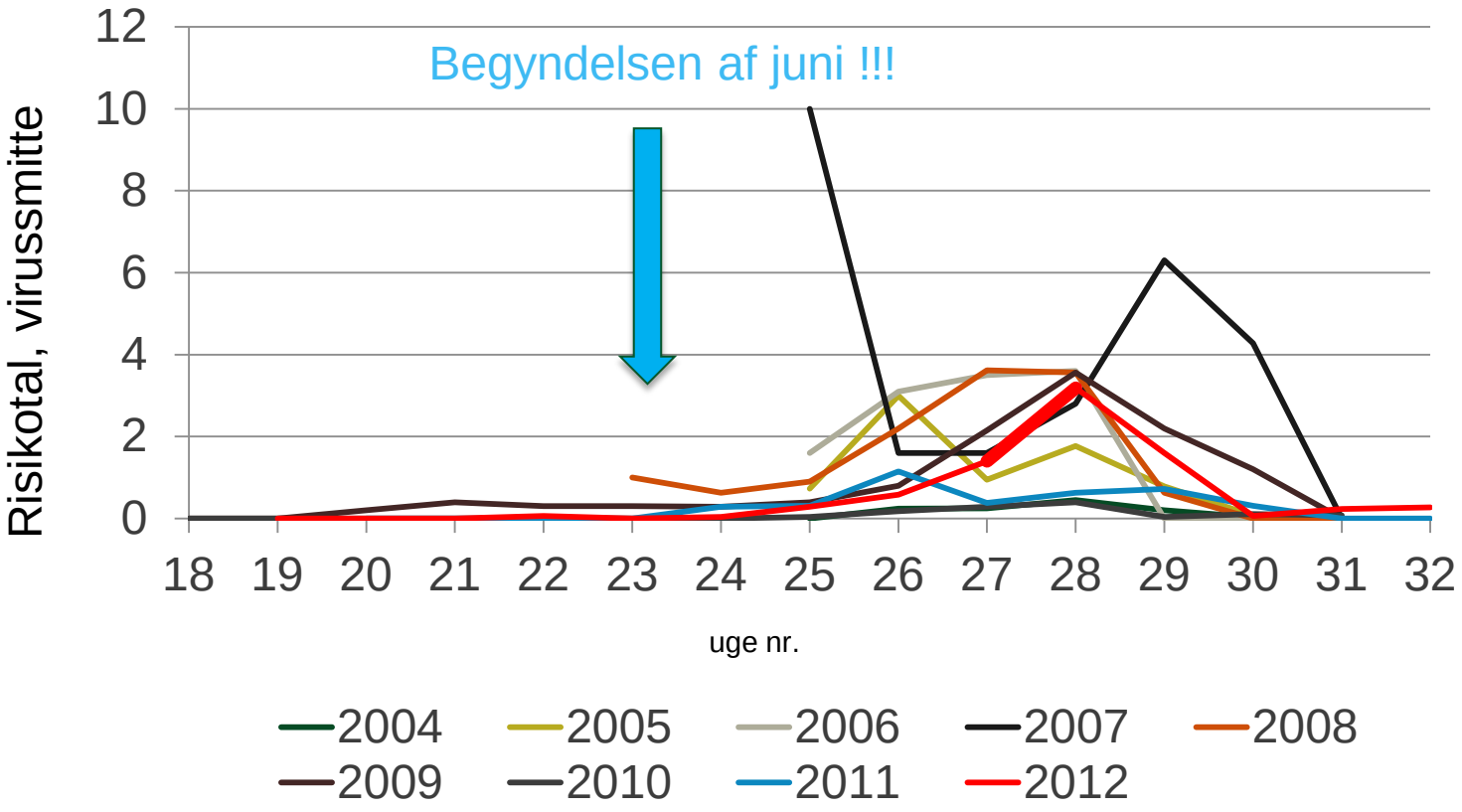
Gør noget!!


Begyndelsen af juni !!!
Risikotal, virussmitte
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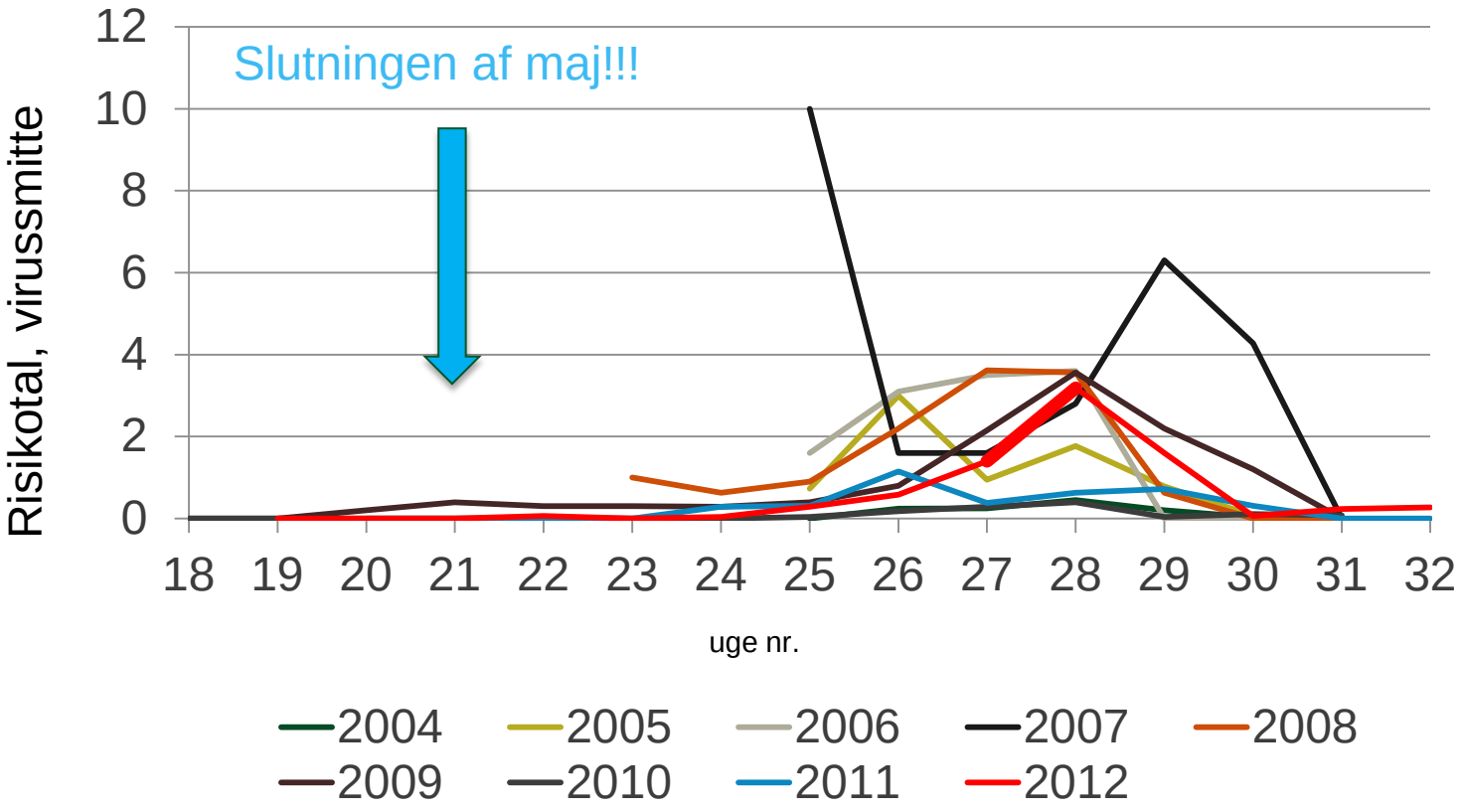
Gør noget!!


Slutningen af maj!!!
Risikotal, virussmitte
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uge nr.
2004
2005
2006
2007
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2009
2010
2011
2012

Forsøgsplan

Støttet af KAF - NA

1. Ubehandlet
2. Insekticid
3. Mineralsk olie
4. Insekticid + mineralsk olie

Mospilan = acetemaprid (Neonicotinoid)

Teppeki = flonicamid (Pyridinecarboxamid)

Forsøgsplan

Forsøgsplan												
Behandling	**12-jun**	**20-jun**	**28-jun**	**05-jul**	**13-jul**	**20-jul**	**25-jul**	**01-aug**	**10-aug**	**06-aug**	**04-aug**	**11-aug**
1	Ubehandlet										Reglone	Reglone
2	Mospilan		Teppeki			Teppeki		Mospilan			Reglone	Reglone
3	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Reglone	Reglone
4	Olie+ Mospilan	Olie	Olie+ Teppeki	Olie	Olie	Olie+ Teppeki	Olie	Olie	Olie+ Mospilan	Olie	Reglone	Reglone

Forsøgsplan

Forsøgsplan												
Behandling	**12-jun**	**20-jun**	**28-jun**	**05-jul**	**13-jul**	**20-jul**	**25-jul**	**01-aug**	**10-aug**	**06-aug**	**04-aug**	**11-aug**
1	Ubehandlet										Reglone	Reglone
2	Mospilan		Teppeki			Teppeki		Mospilan			Reglone	Reglone
3	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Olie	Reglone	Reglone
4	Olie+ Mospilan	Olie	Olie+ Teppeki	Olie	Olie	Olie+ Teppeki	Olie	Olie	Olie+ Mospilan	Olie	Reglone	Reglone

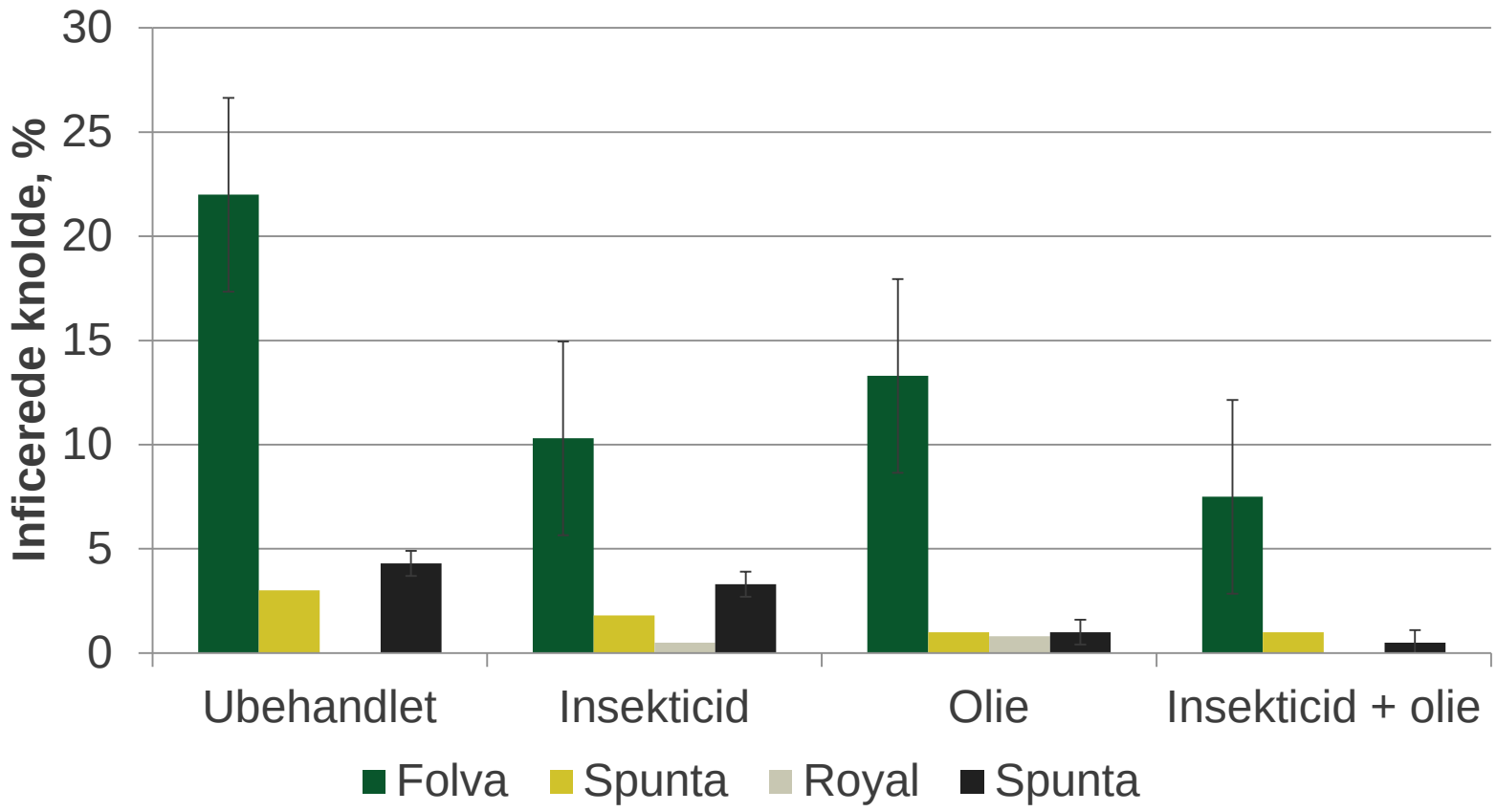
Forsøgsparceller
480-512 m^2

Første behandling med olie og insekticider

Mark	År	Dato
Spunta	2011	3. Juni
Folva	2011	7. Juni
Spunta	2012	6. Juni
Royal	2012	12. Juni

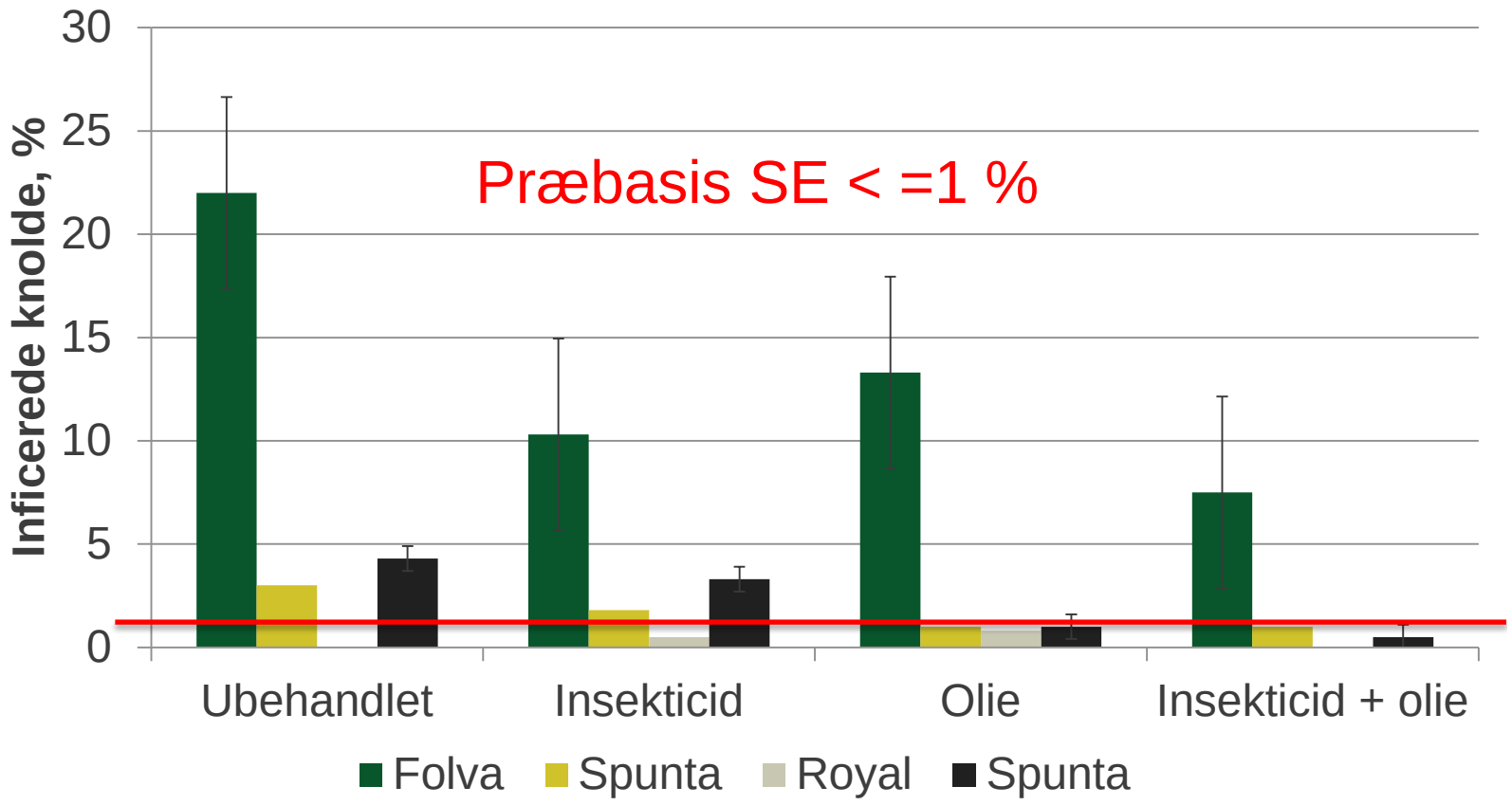
Procent inficerede knolde

4 forsøg, 2011-2012



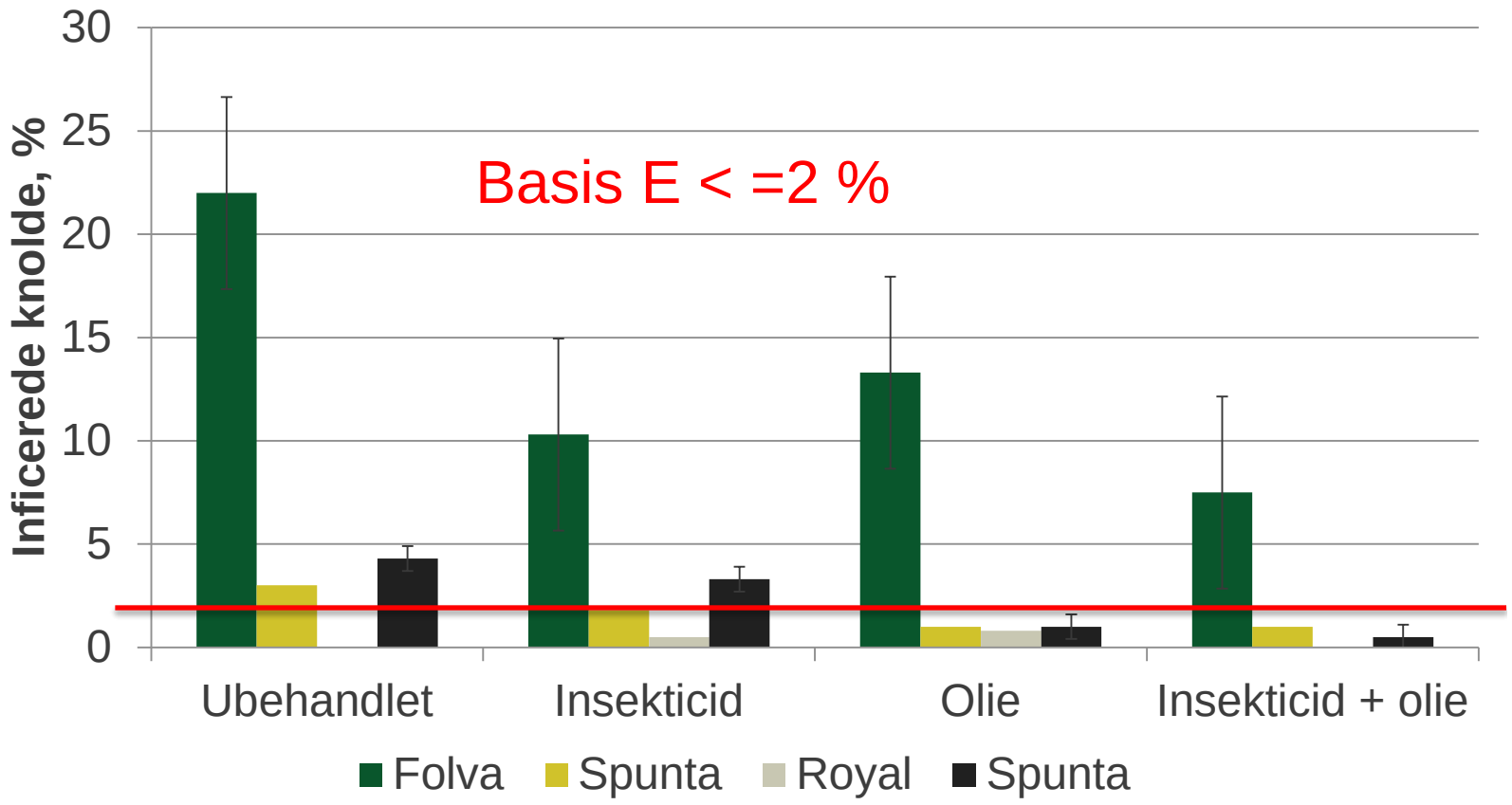
Procent inficerede knolde

4 forsøg, 2011-2012



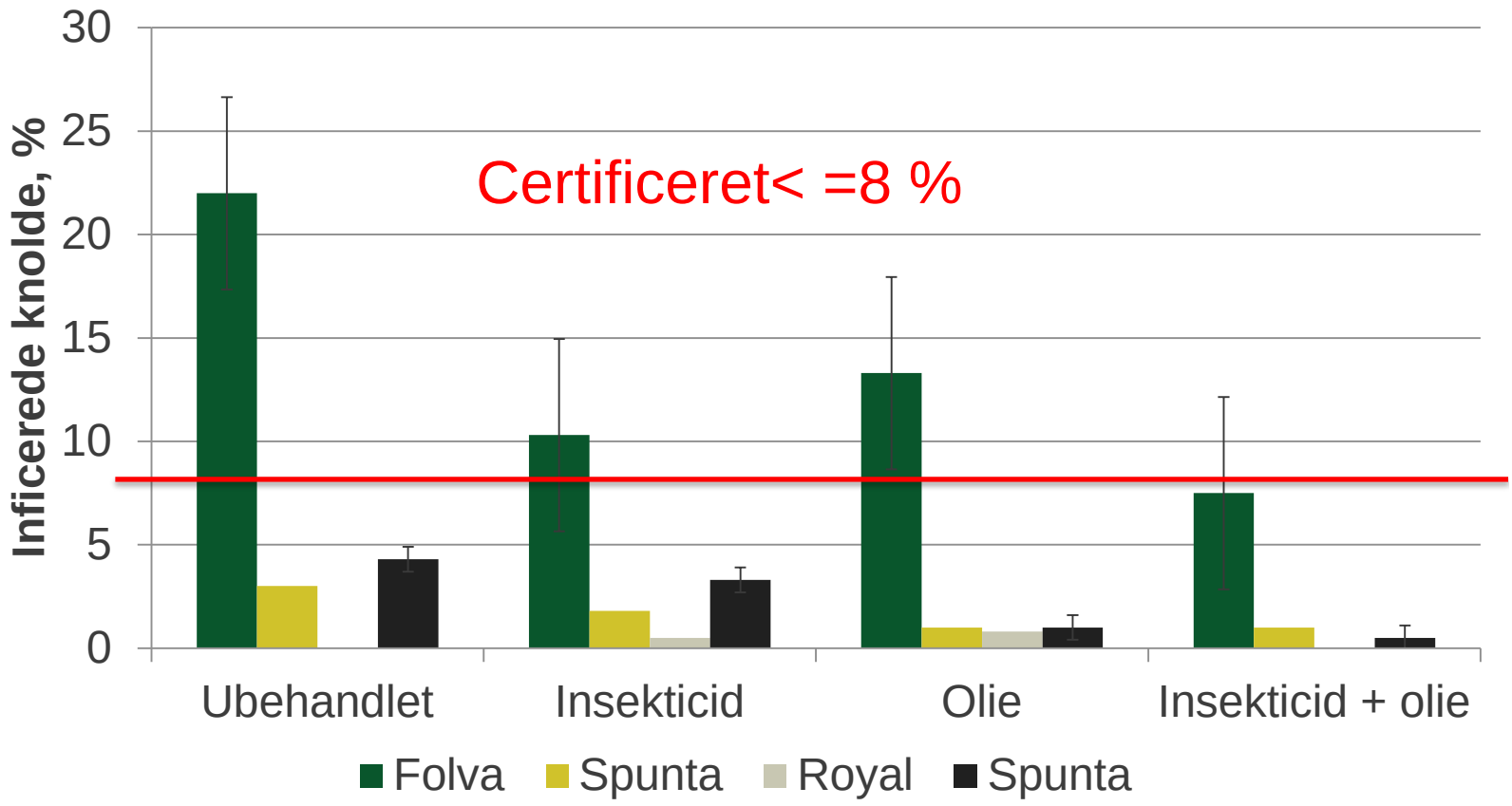
Procent inficerede knolde

4 forsøg, 2011-2012



Procent inficerede knolde

4 forsøg, 2011-2012



Forsigtig konklusion

Kun fire forsøg – to år!

- Ca. 50-60% reduktion i forekomst af inficerede knolde med PVY ved brug af olie og insekticider
- Olie er ikke godkendt som bekæmpelsesmiddel
- Der er en additiv effekt ved at blande insekticider med olie
- Det er muligt, i nogen tilfælde, at nedbringe infektionsgraden, så et parti kan klassificeres i en højere klasse
- Der er god økonomi i forebyggelse af virus i læggekartofler
- Økonomien afhænger af pris- og afsætningsforhold for læggekartofler
- Usikkerhed om betydning af olie for udbytte, men kvaliteten er vigtigst.

Forebyggende foranstaltninger

- Den største smitterisiko kommer fra partiet selv
- Forebyggende foranstaltninger
  - Lavt smittepotentiale
  - Afstand til brugsavl
  - Lugning
  - Tidlig lægning - forspiring
  - Lavt N-niveau
  - Bekæmpelse af gengroninger
  - ”Border crops”