

# 14<sup>th</sup> European Work Hazards Network Conference

27-29 May 2016 Rotterdam

## The hazard of ticks and Lyme disease for working outdoors



# The hazard of ticks and Lyme disease for working outdoors

## Speakers:

1) Fedor Gassner: Biologist, tick expert



2) André Effting: Union representative and forestry professional



3) Mirjam de Groot: Occupational Health Specialist  
Prevention advisor forestry & landscape



# Part 1: The hazard of ticks and tick-borne diseases

**Dr. Fedor Gassner**







Image: F. Gassner, Andre Efftink  
and the national greenkeepers  
association (NGA)

# Ticks: tiny critters with big potential health impact





# Ticks – a biological hazard



- Feeds on vertebrates
- Lives 2 to 6 years
- Picks up Lyme bacteria from rodents and birds
- Lives in and on the ground up to 1.5 meter height
- Feeds for several days
- ~ 15% infected with Lyme disease bacteria (*Borrelia* species)

# Ticks, bites and Lyme disease in the Netherlands

Ticks: Billions



Tick bites: 1.5 million / year  
on 17 million people



Early local disease: 24.000 /  
year  
(~ 135/ 100.000 population)



Chance  
~2%

Early and late Disseminated Lyme disease  
(days to years after tick bite)

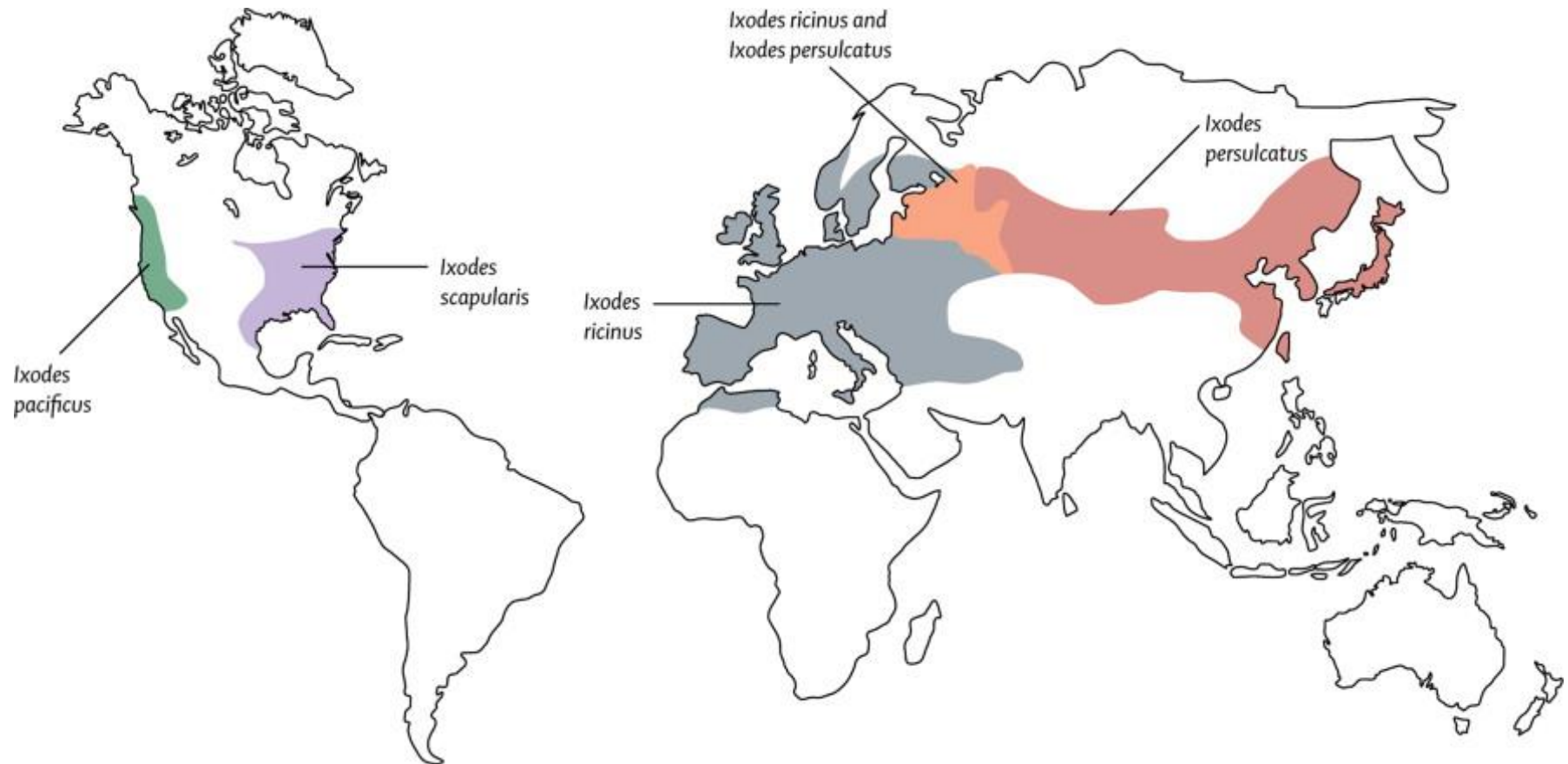
~1400 per year....

**but largest impact  
on health and work**



Swollen knee

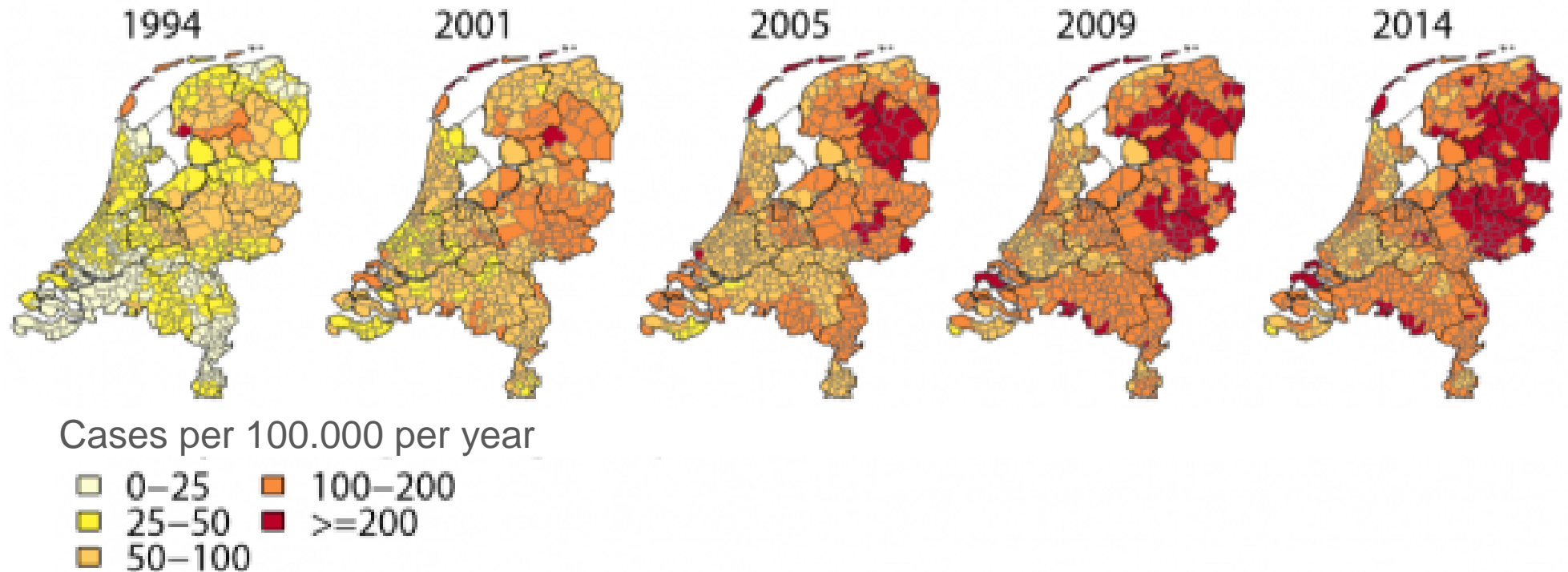
# Lyme disease: where?



Worldwide also many other relevant tick-borne diseases:  
Tick borne Encephalitis, Anaplasmosis, Crimean-Congo Haemorrhagic fever, etc



# Increasing tick bite and Lyme disease trend in general population



... but severely underreported among professionals at risk. Also increase in antibiotics use among employees.

# Working population at risk

- **Any** work in 'green areas' with tick activity, or work with animals originating from such area.
- Forestry and nature
- Gardeners
- Army personnel
- Security
- Construction
- Education (field trips)
- Culture
- Tourism



# Dutch policy

- Lyme disease recognised as occupational disease
  - Mandatory *reporting*, but only if work related
  - *Should* be part of **risk assessment**
- Several evidence-based guidelines ([www.rivm.nl/en](http://www.rivm.nl/en))
- No vaccine (worldwide case)
- Good interaction between relevant stakeholders, with professionals working in forestry in the front-line
- But much remains to be done... (reporting, risk assessment, diagnostics, treatment of long lasting symptoms)



# Under construction: “Tick Tearing Trainer”

- Tool in development by RIVM for practising or demonstrating tick removal



Rijksinstituut voor Volksgezondheid  
en Milieu  
Ministerie van Volksgezondheid,  
Welzijn en Sport



# Questions?

## **Gassner Biological Risk Consultancy:**

- Public /professional information
- Biological risk investigation
- Research

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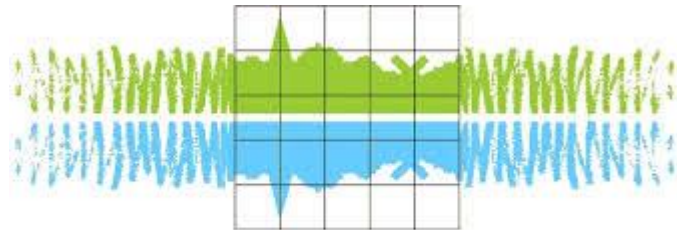
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# Part 2: Sustainable Employability: a key focus of FNV trade union

**André Efftink**



Landschapsbeheer Drenthe





# FNV Union work: empowering employees



- 20 years experience at FNV union's agricultural section
- CAO commission
- Safe and healthy working conditions in agriculture
- Main focus on forestry and landscape management professions

# Work and Lyme disease

- 1995 – 1997 onset of Lyme disease symptoms
- Relatively unknown phenomenon, unfamiliarity among medical staff, employers and employees
  - Value and misunderstanding of diagnostical tools for blood analyses
  - Prevention?
- Many colleagues with similar history



# Action needed – Establishment of professional workgroups

- Since 1997 “Green Lyme disease workgroup” → part 3 Mirjam de Groot (Stigas)
- The Dutch Forest and Nature reserve owners association (VBNE)
  - From 1997: Commission for occupational health including employees and employers
- New policy documents (for example guidelines) and practical information tools on Lyme disease prevention





# Current status

- Personal protection methods validation
  - Field research on tick bite and Lyme disease among green workers (2010-2011)
  - Field research protective clothing and anti-tick sprays (2012)
- Three practical safety measures are now common:
  - 1) Protective clothing
  - 2) Routine tick checks during and after work
  - 3) Knowledge on what to do with tick bites among all employees



See part 3: Mirjam de Groot

# Conclusions and future perspectives

- 10 years of joint actions
- Lyme disease as occupational hazard is now widely recognized
- Employers and employees are more empowered through:
  - Guidelines, personal protection tools, awareness, policy documents, information materials and good improved interaction
- Society in general benefits from joint actions among professionals
  - Media, public health communication, guidelines



# Concluding remarks

- Standing together for a healthy workforce and a healthy society
- Continue work on joint actions
- Enjoy healthy work in healthy nature
- Question: How is Lyme disease prevention for professionals arranged in your own country?
- Can we learn from your experience?

**Contact details:**

**Please find me during the conference, or:  
[a.efftink@gmail.com](mailto:a.efftink@gmail.com)**





# Part 3: Tick checks and protective clothing: standardization needed?

**Mirjam de Groot**

Occupational Health Service Stigas

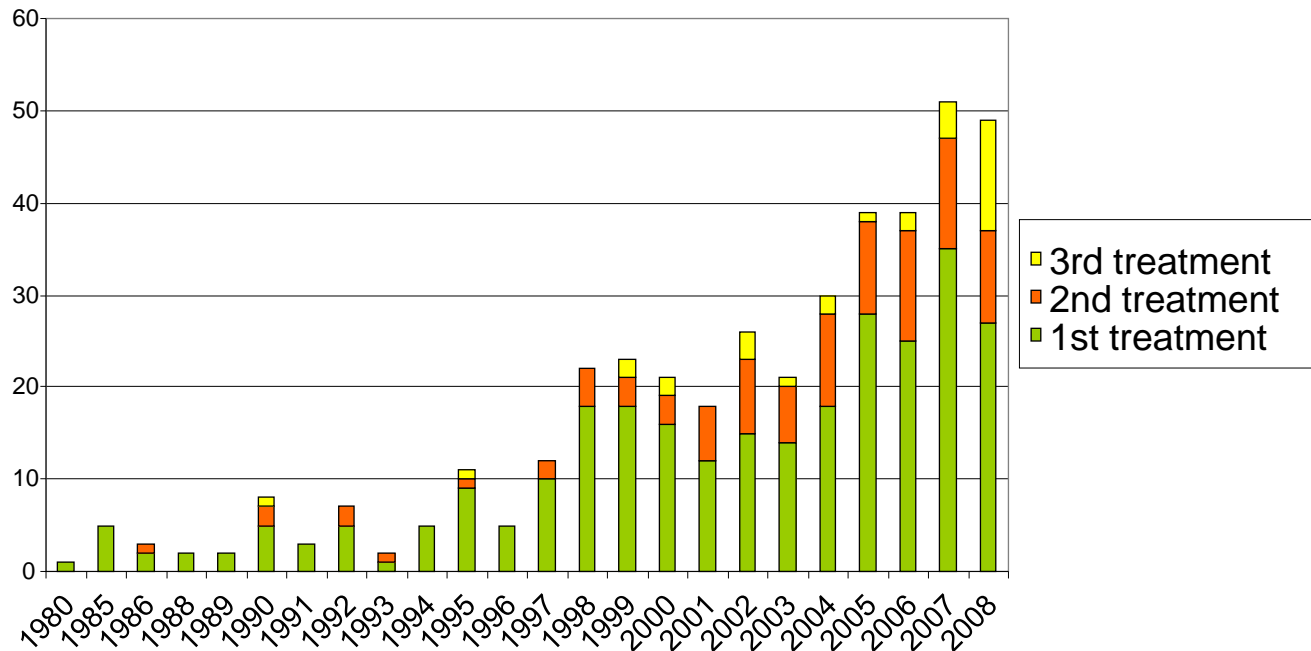
Web sites (in Dutch):  
[www.weekvandeteek.nl](http://www.weekvandeteek.nl)  
[www.stigas.nl](http://www.stigas.nl)



# Field evaluation of personal protection methods

- Many activities over the past 12 years: awareness, practical instruction and **research**

- Tick bites and Lyme disease among forestry workers
- Tick bites and Lyme disease among Professional gardeners
- Tick bite prevention: application of protective clothing and repellents



# Research: policy at forestry and professional gardening companies

Tabel 1 Resultaten van het vragenlijst onderzoek

	Gardening	Forestry
	Hoveniers (n = 708)	Bos en Natuur (n=1017)
Het bedrijf heeft een protocol. (registratie-, meldings- en screeningsformulier)	16%	37%
Voor de werknemers is een formulier voor de registratie van tekenbeten aanwezig.	19%	30%
Werknemer meldt tekenbeten bij leiding.	63%	41%
Werknemer heeft een tekenverwijderaar op het werk.	69%	67%
Tekenbeten opgelopen ooit tijdens het werk.	32% (n=258)	81% (n= 827)
Last van tekenbeten NU tijdens het huidige werk.	28%	78%
Waar komen tekenbeten op het lichaam hoofdzakelijk voor?	38%	62%
	liesstreek	liesstreek
Werknemer heeft ooit te maken gehad met Kringvormige rode huidafwijking (erythema migrans).	14%	28%
Verwijdert teken binnen 20 uur na het werk.	80%	91%
Contact met dieren en vaak tekenbeten	40%	17%
Werknemer is ooit behandeld voor de ziekte van Lyme na tekenbeet.	15%	36% (n= 300)



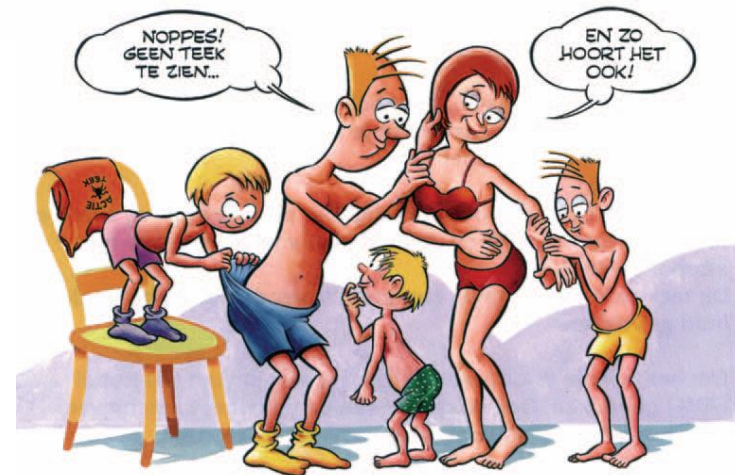
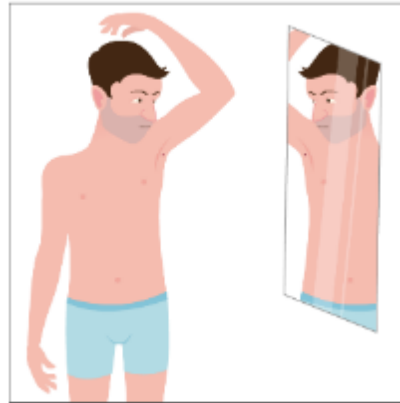
# United actions: Communication

- National Green Lyme Workgroup (2004 and 2015 present)
  - Platform for multidisciplinary sharing of knowledge
  - Supporting input for policy and research agendas
  - National tick awareness week with simultaneous communication by >25 public and professional organisations
- Press releases, annual “Pluk artikel” (standardized texts for communicating about Lyme disease)
- Policy documents
- Prevention meetings
- Prevention tools, such as flyers, information films, tick removal tools and infographics



# Clear and easy information for all levels of education

- Joint actions by professional health and public health organisations
- How to create awareness for the importance of systemic body inspections and how to make it practically feasible?





# Methodical body checks

- Information film
- Flyer with infographics
- Standardized texts for information tools





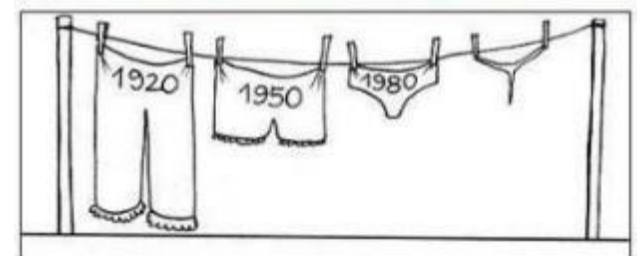
# Tick bite registration

- Why, when, where?
- Importance for **employee**
- Importance for **employer**
- Registration can be valuable for directing and implementing preventive measures
  - Per company
  - Per work field (broader)
- RIE: Inventarisation of risk areas, risk activities and evaluation of prevention.
- Stigas offers a special consultation hour, with easy access to medical expertise centres.



# Personal protection

- Decision-support schedule for protective measures
- Cover skin
- Tuck trouser legs into socks
- Use anti-tick sprays (DEET etc).
- Use permethrin treated clothes
  - (Evidence based, but....)



# Permethrin impregnated clothes

- Various scientific evidence for efficiency, but...
- No certification in the Netherlands (or Europe)
- Differences among brands
- Which requirements are needed for optimal use and effect?
  - Instructions for washing and storage?
  - Durability
  - Safety (personal and environmental)





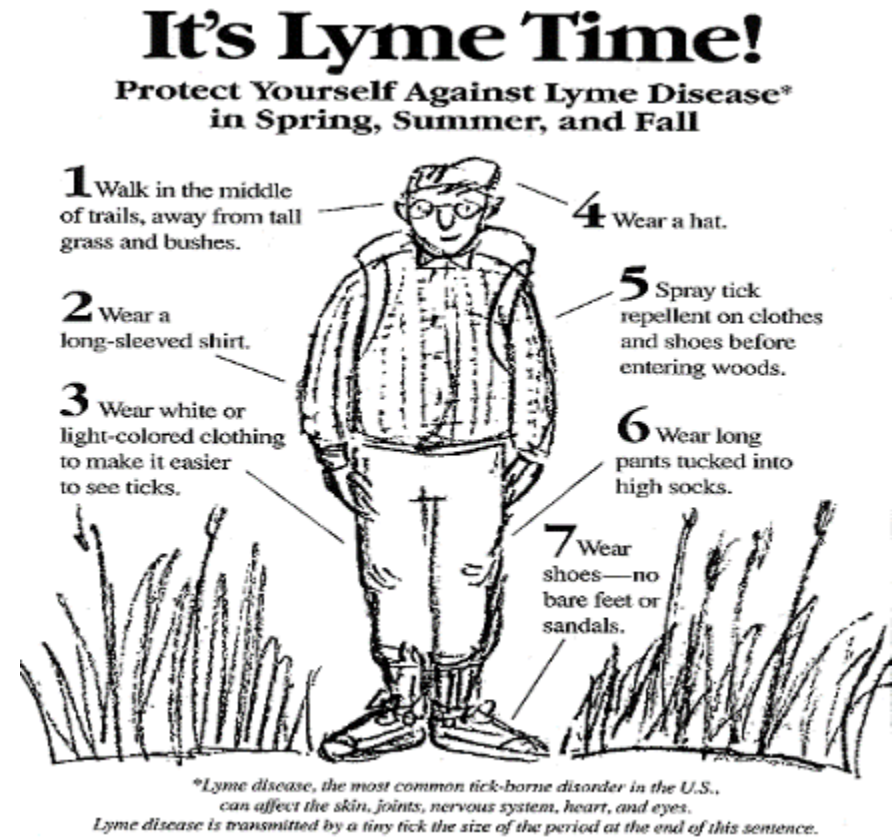
# Certification needed?

- European certification would be useful for different types of impregnated clothes (trousers, jackets, socks)
- Clear and uniform communication about products
- Standardized validation of efficiency against ticks
- Starting in 2014, Dutch standardization institute NEN is guiding a Dutch standard for impregnated work clothes. (<https://www.nen.nl/Home-EN.htm>)
- But research is also needed, for example on long-term health effects of permethrin impregnated clothing



# Future perspectives and questions

- **2017 the first European 'Tick awareness week' ??**
- Other countries with tick awareness programs?
- Which actions in your own organisations?
- Experience with evaluation of methods for Lyme prevention?
- Please share your experience



Together, we can create safe and healthy work.

# Discussion and questions

Mirjam de Groot

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Stigas



Agrarisch Groen

