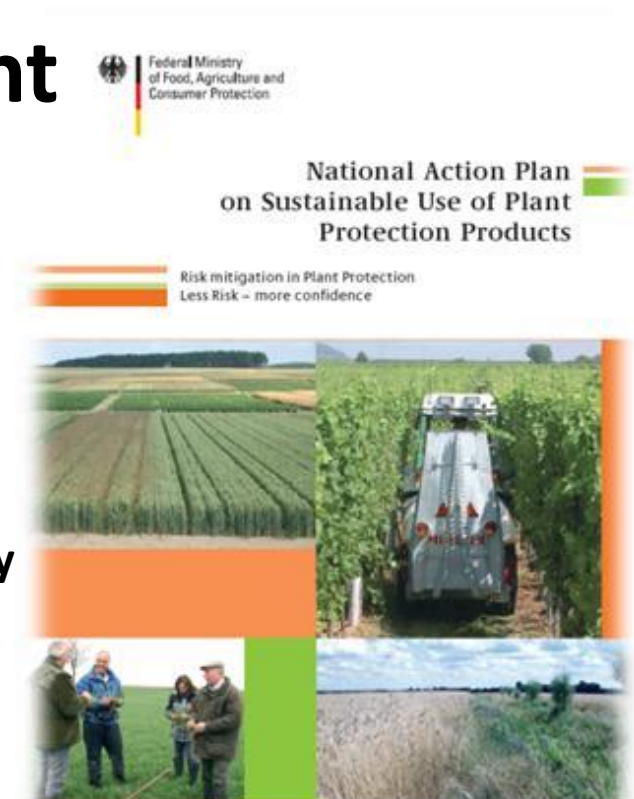


Prospects for IPM in Germany in the light of the new European legislation on plant protection

Bernd HOMMEL & Bernd FREIER

Julius Kühn-Institut (JKI). Federal Research Centre for
Cultivated Plants. Institute for Strategies and Technology
Assessment. Kleinmachnow

bernd.hommel@jki.bund.de



IPM definition in the German Plant Protection Act




A combination of measures where - under preferential consideration of biological, biotechnical and plant breeding measures, cropping practices and culturing techniques – the use of pesticides is restricted on the *“necessary minimum”* [PflSchG §2(2)].

The *“necessary minimum”* can be described as pesticide use intensity where optimum efficacy is combined with the minimum quantity necessary. It depends on application parameters (pesticide selected, dosage, time, application equipment available), local conditions and using alternatively reliable non-chemical measures [OECD, 2009].

Germany's National Action Plan since 2008

Targets



1. **Risk reduction** by the year 2020 by 25 % (basis 1996-2005) through:
 - **reduction of uses above the “*necessary minimum*”**
 - substitution of plant protection product use through non-chemical alternatives
 2. Reduction of exceeding MRLs in domestic and imported products <1%
 3. Avoiding costs for unnecessary use of plant protection products
- from 2013?** 
4. More organic farming (at least 20% of the acreage?)
 5. Less impacts on Biodiversity (e.g. through more ecological infrastructures)
 6. Efficient water protection (e.g. fixed buffer zones of 5 or 10m?)
 7.

Germany's National Action Plan since 2008

Core Indicators

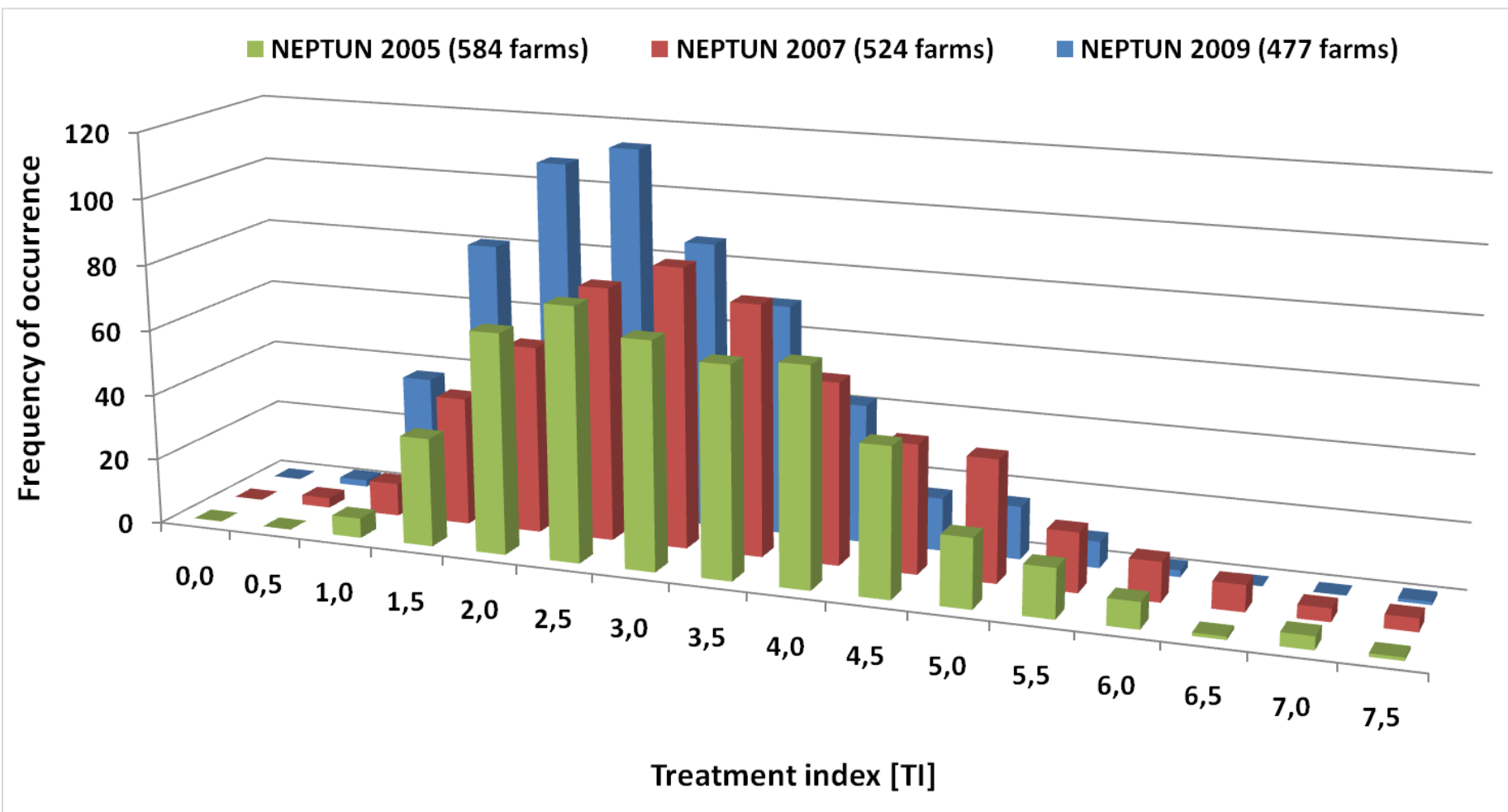


Pesticide use intensity → *“treatment index” (TI)*

The TI is used as indicator of the intensity of plant protection product use. It considers dose reduction in proportion to the authorised one and partial field application of each pesticide.

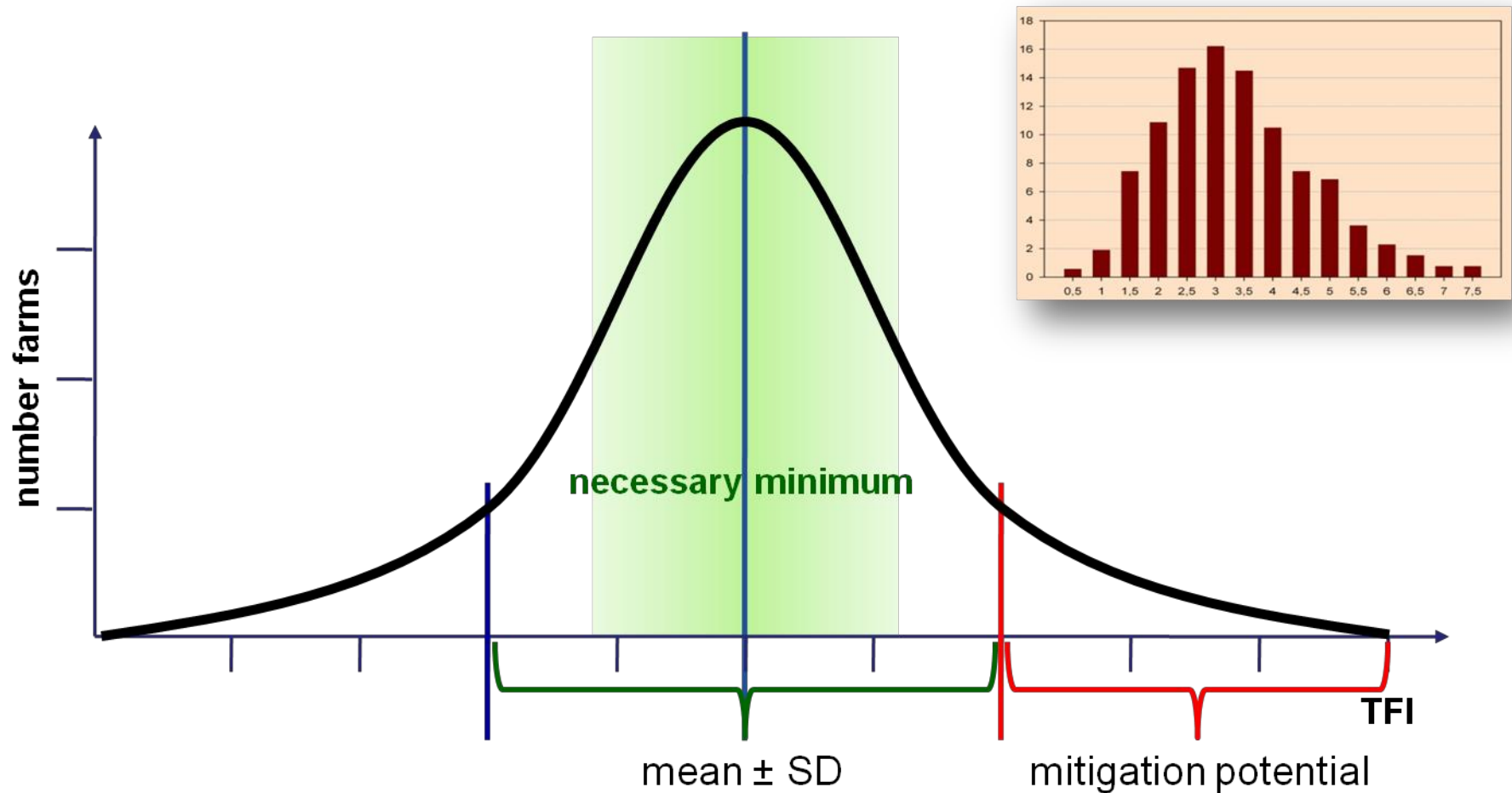
- authorised dose in entire field: $TI = 1.0$
- half dose in entire field: $TI = 0.5$
- half dose in half field: $TI = 0.25$

Treatment index [TI] scores in sugar beets in Germany



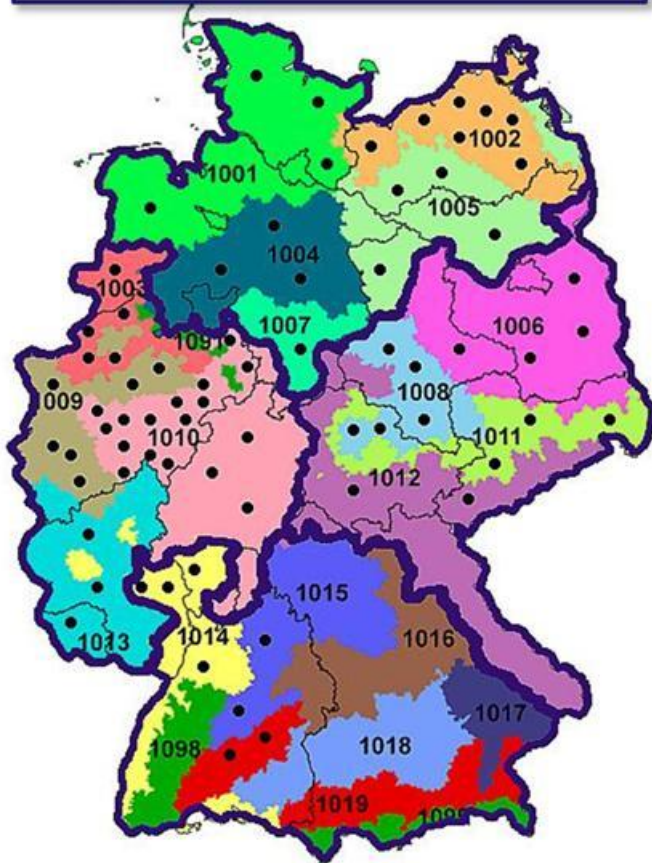
The “*necessary minimum*” in plant protection

[considering: profitability of farms and practicability of alternatives]



Net of reference farms [started in 2007]

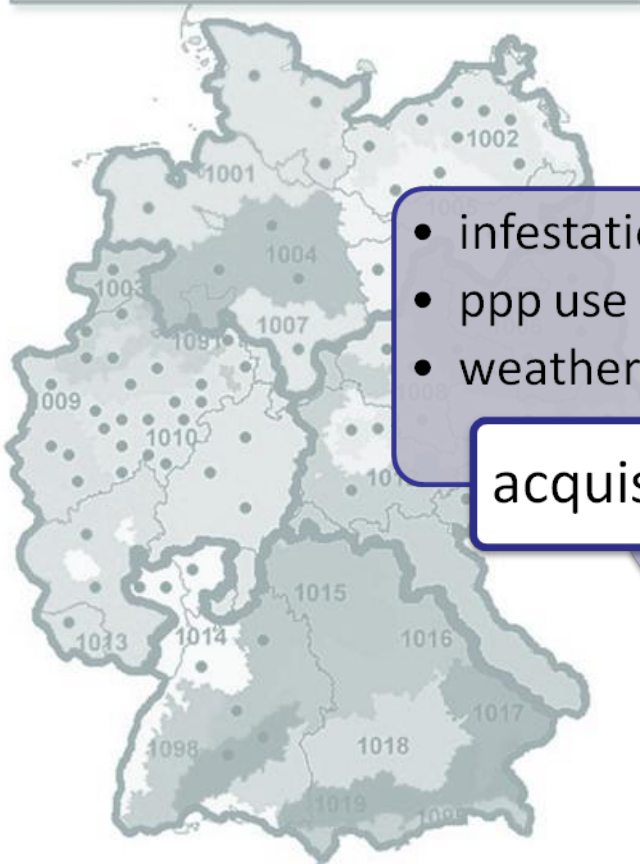
Arable farming	= 76 farms
Field vegetable	= 28 farms
Apple orchard	= 19 farms
Vineyard	= 8 farms
Hop growing	= 3 farms





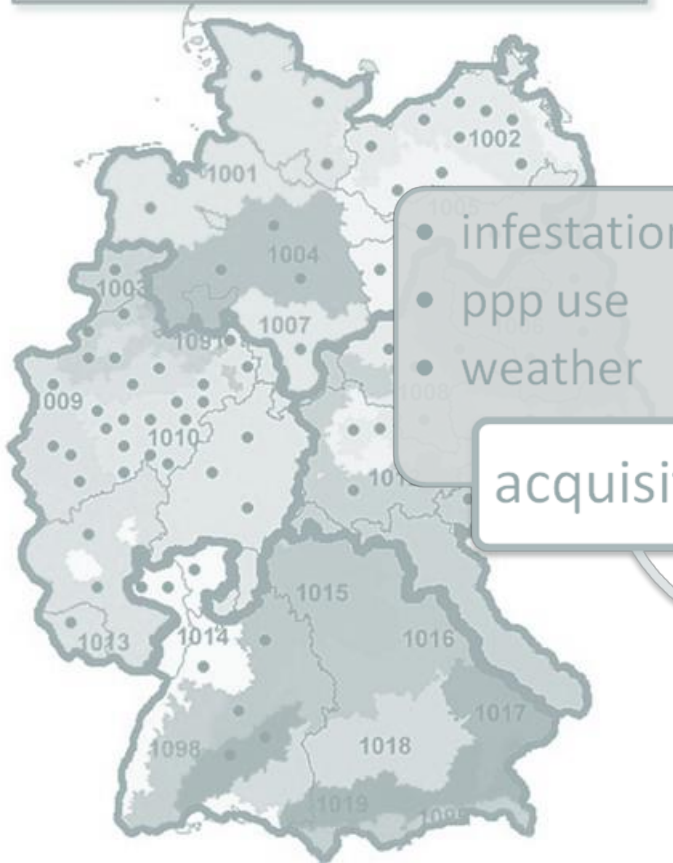
- infestation
- ppp use
- weather

acquis



Net of reference farms [started in 2007]

Arable farming	= 76 farms
Field vegetable	= 28 farms
Apple orchard	= 19 farms
Vineyard	= 8 farms
Hop growing	= 3 farms



Bearbeitet von / Compiled by:
Bernd Freier¹, Jörg Sellmann², Jürgen Schwarz¹, Marga Jahn¹,
Eckard Moll², Volkmar Gutsche¹, Wolfgang Zornbach⁴

Unter Mitwirkung von / In collaboration with:
Anita Herzer¹, Merle Sellenriek¹, Rene Brand¹, Benita Burghardt¹,
Christiane Seidel¹, Florian Kluge¹, Ute Müller¹, Christina Wagner¹,
Christoph Hoffmann³
und der
Pflanzenschutzdienste der Länder

Netz Vergleichsbetriebe Pflanzenschutz Jahresbericht 2009

Network of Reference Farms for Plant Protection
Annual Report 2009
Analysis of Results 2007 - 2009

Julius Kühn-Institut (JKI), Bundesforschungsinstitut für Kulturpflanzen
¹ Institut für Strategien und Folgenabschätzung im Pflanzenschutz, Kleinmachnow
² Zentrale DV-Gruppe, Kleinmachnow
³ Institut für Pflanzenschutz im Obst- und Weinbau, Dossenheim/Sieboldingen
⁴ Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz, Bonn

Berichte aus dem Julius Kühn-Institut

156

Julius Kühn-Institut
Bundesforschungsinstitut für Kulturpflanzen

ssary
mum
ences
Validation

The “*necessary minimum*” in pesticide uses in Germany



Results [Reference Farms Network. Freier et al.. 2010]

Crop	2007	2008	2009
Winter wheat	88.7 %	85.8 %	89.8 %
Winter barley	94.8 %	84.9 %	86.0 %
Winter oilseed rape	87.7 %	81.8 %	87.4 %
Field vegetables	83.4 %	89.8 %	86.7 %
Apples	94.5 %	94.6 %	91.7 %
Grapes	99.5 %	95.5 %	98.3 %
Hops	100.0 %	96.6 %	98.8 %

The “*necessary minimum*” in pesticide uses in Germany



Results [Reference Farms Network. Freier et al.. 2010]

Crop	2007	2008	2009
Winter wheat	88.7 %	85.8 %	89.8 %
Winter barley	94.8 %	84.9 %	86.0 %
Winter oilseed rape	87.7 %	81.8 %	87.4 %
Field vegetables	83.4 %	89.8 %	86.7 %
Apples	94.5 %	94.6 %	91.7 %
Grapes	99.5 %	95.5 %	98.3 %
Hops	100.0 %	96.6 %	98.8 %
Estimated TI corridor of the “ <i>necessary minimum</i> ” in fungicide use in winter wheat in the Region WEST	1.0 – 2.3	1.5 – 2.9	1.4 – 2.5

Proposal for a quantitative target of the „*necessary minimum*“ in the net of reference farms



Crop	Herbicide	Fungicide	Insecticide	Growth regulators
Winter wheat	95%	90%	90%	95%
Winter barley	95%	90%	90%	95%
Winter oilseed rape	95%	90%	90%	90%
Cabbage	95%	90%	90%	--
Carrot	95%	90%	90%	--
Asparagus	95%	90%	90%	--
Onion	95%	90%	90%	--
Apple	100%	95%	95%	--
Grape	95%	95%	95%	95%

- The “*necessary minimum*” reflects the proper use of pesticides and the preferential use of practical non-chemical alternatives or IPM strategies.
- The “*necessary minimum*” allows only retrospectively a weak-point analyses of plant protection **but** it helps in future orientation in plant protection (e.g. better information and training, better DSS, targeted incentives for alternatives) and supports communication between farmers, advisors, policy and public.
- The new net of **demonstration farms** within Germany’s NAP should help to spread knowledge of IPM in order to meet the “*necessary minimum*”.

Thank you very much.

