5-Point Programme for Sustainable Plant Protection – the Copper Case

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5-point programme for sustainable plant protection

- **published January 2016**
- **fact sheet and position paper**
  - **for the general public**
  - **for stakeholders and policy makers**
- **„strategic approach“ of UBA section plant protection products**

http://www.umweltbundesamt.de/publikationen/5-punkte-programm-fuer-einen-nachhaltigen-0

Chemical plant protection and sustainability

„UBA is of the opinion that the current intensity of the chemical plant protection in Germany is ecologically unsustainable and threatens the achievement of key targets of environmental protection and nature conservation policies."

Five basic principles

1. **Minimising use**
2. **Identifying, quantifying and communicating risks**
3. **Optimising risk management**
4. **Compensating for unavoidable effects**
5. **Internalising external costs**

Minimising use

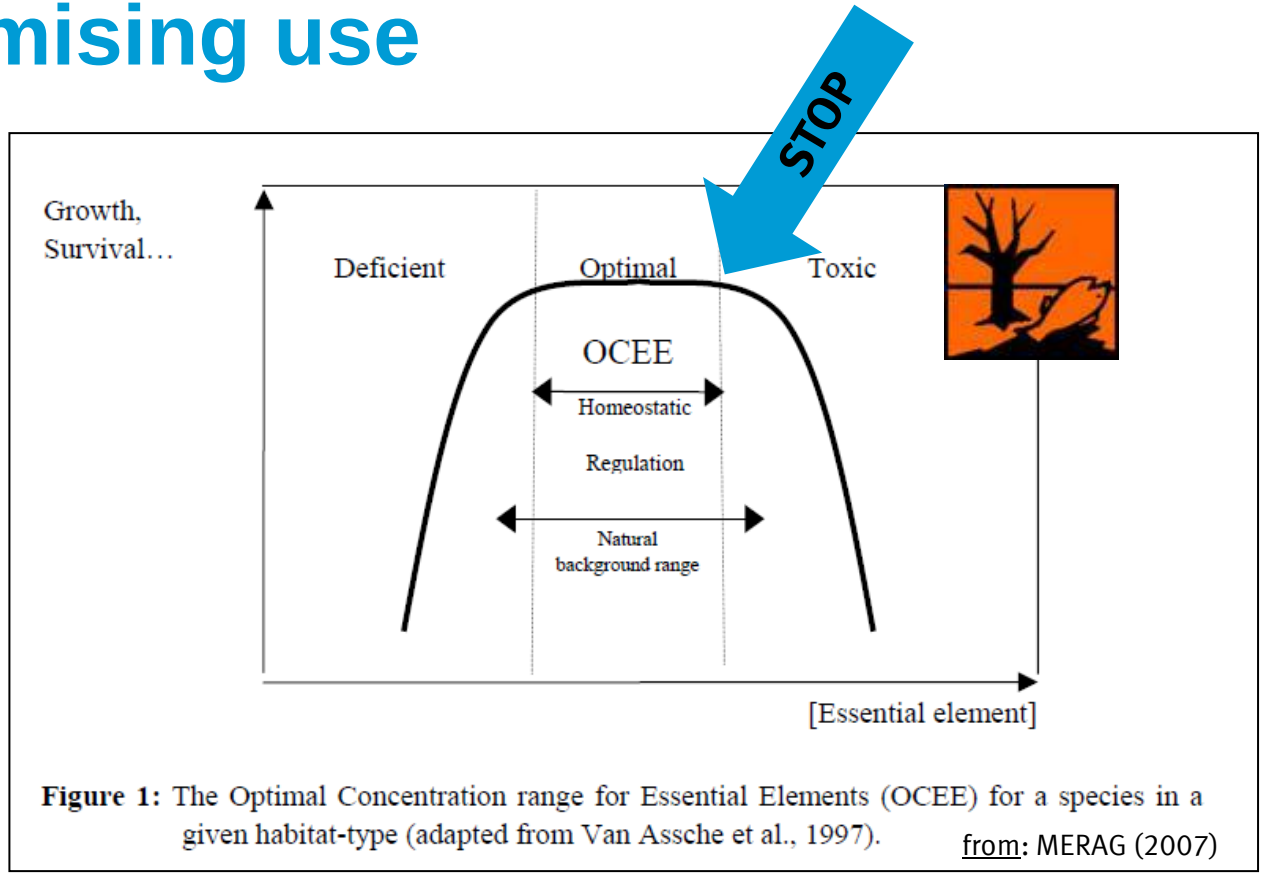


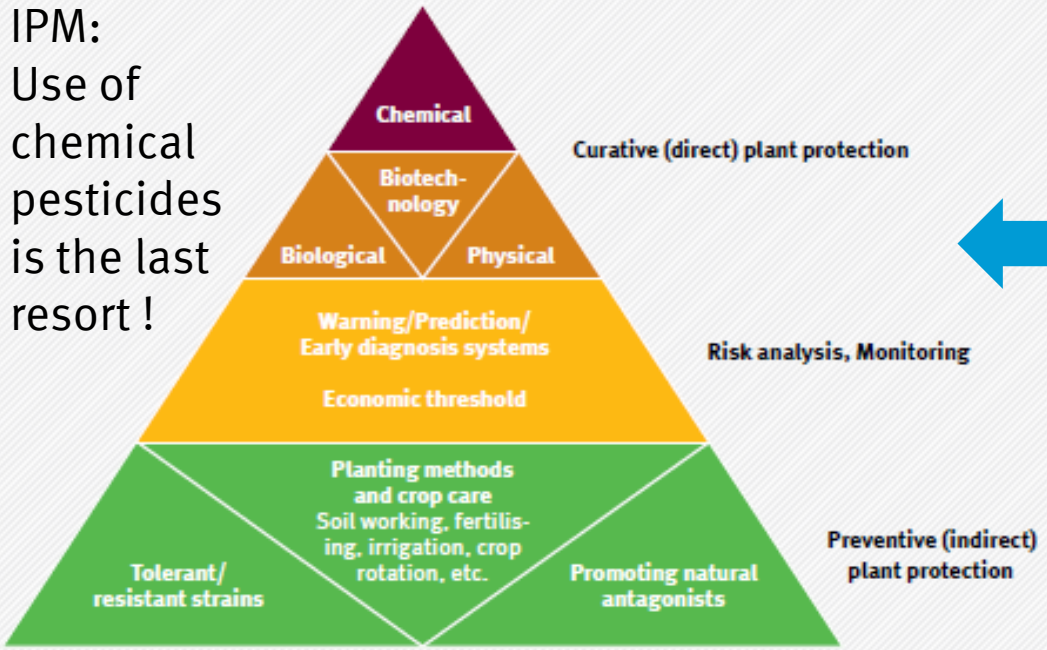
Figure 1: The Optimal Concentration range for Essential Elements (OCEE) for a species in a given habitat-type (adapted from Van Assche et al., 1997).

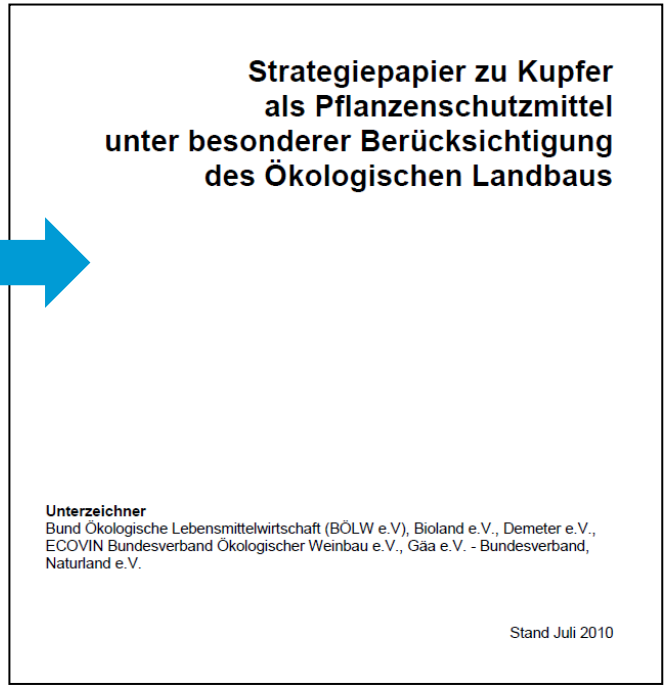
from: MERAG (2007)

- **essential element ... however persistent and toxic soil contaminant**
- **Cu PPP application rates conflict with precautionary soil protection**
- **regulatory coherence mandatory**

Minimising use

IPM:
Use of chemical pesticides is the last resort !





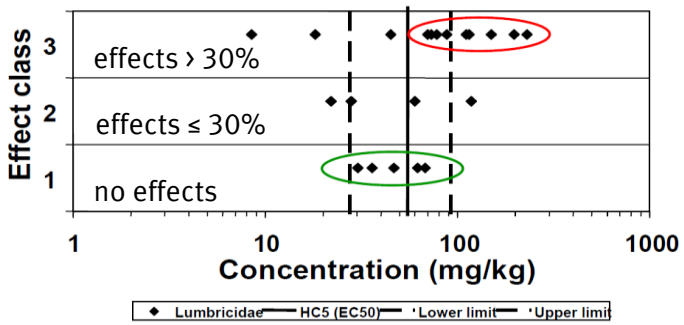
Strategiepapier zu Kupfer als Pflanzenschutzmittel unter besonderer Berücksichtigung des Ökologischen Landbaus

Unterzeichner
Bund Ökologische Lebensmittelwirtschaft (BÖLW e.V), Bioland e.V., Demeter e.V., ECOVIN Bundesverband Ökologischer Weinbau e.V., Gäa e.V. - Bundesverband, Naturland e.V.

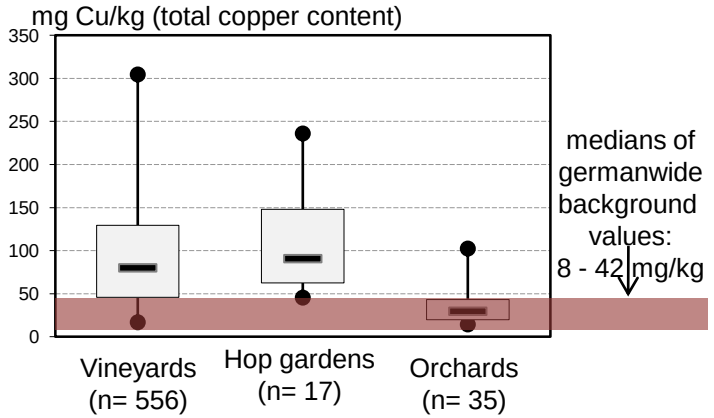
Stand Juli 2010

- **last EU approval of Cu (2009) comprises minimization requirement**
- **ambitious strategy of (eco)farmers/growers associations (2010)**
- **long-term goal: Cu replacement resp. input = output**

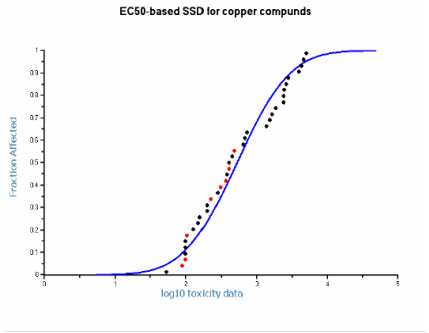
Identifying, quantifying and communicating risks



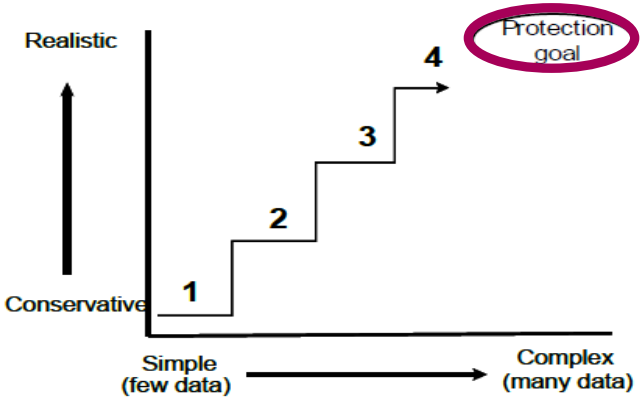
from: Jänsch et al. (2009)



from: König et al. (2010)

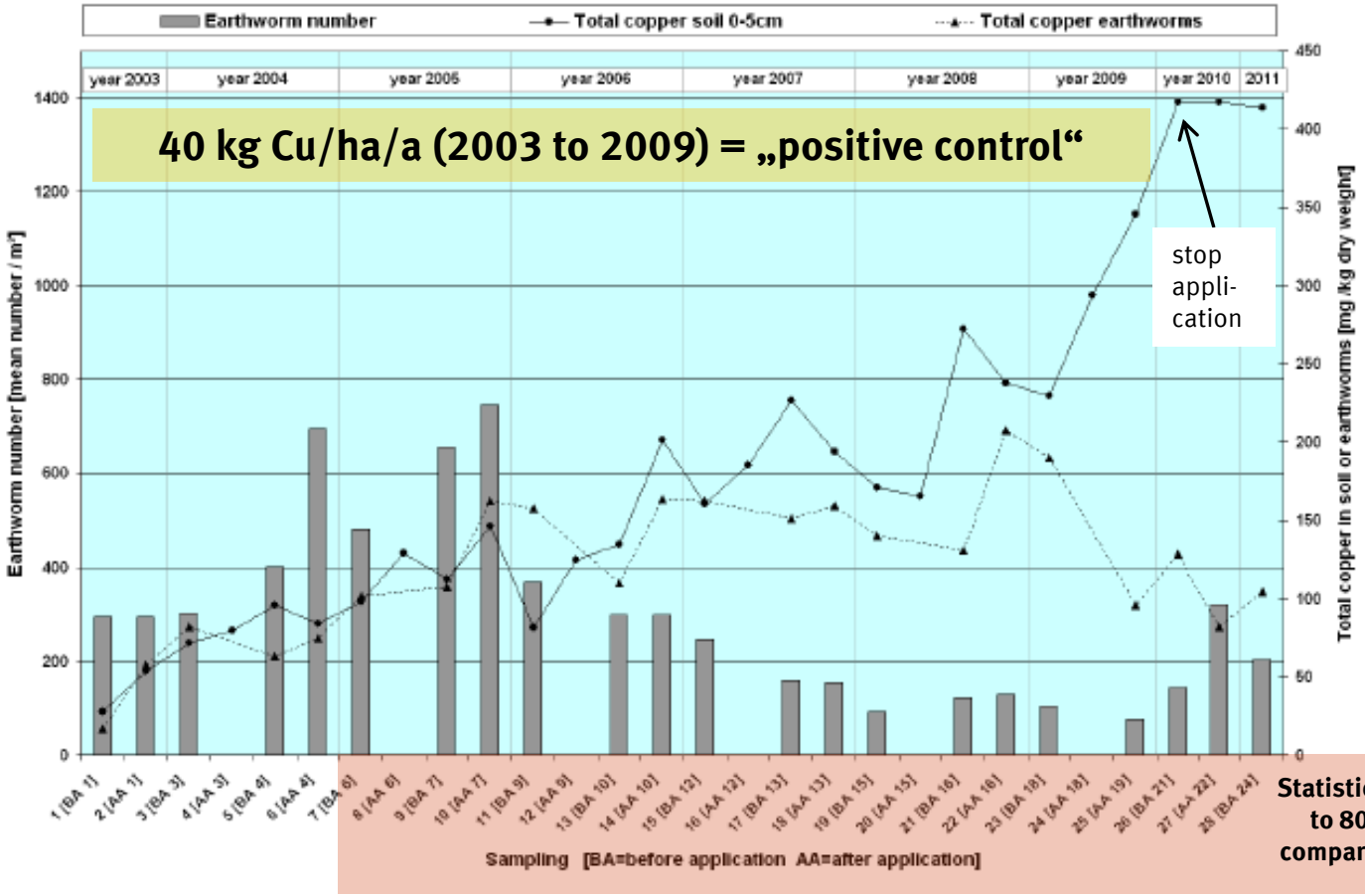


from: Jänsch et al. (2007)



- **EFSA PPP risk assessment guidance not applicable to metals**
- **last EU approval of Cu (2009) comprises soil monitoring requirement**
- **pro- and retrospective effect/risk assessment in combination**

Identifying, quantifying and communicating risks

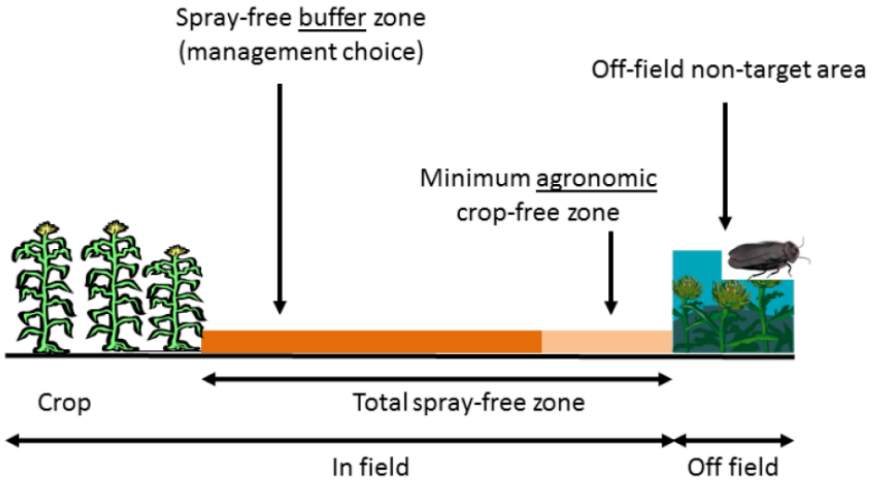


from: European Copper Task Force (2012)

Statistically significant reduction (up to 80 %) of earthworm numbers compared to negative control (water)

- **the repeated dose makes the poison**
- **long-term (i.e. decades) and precautionary perspective required**

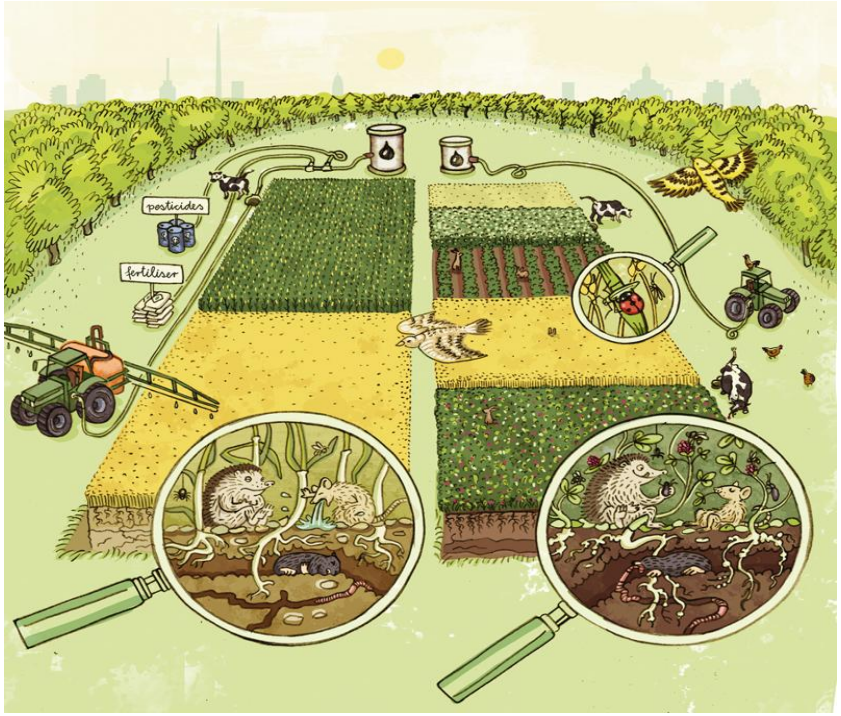
Optimising risk management



from: EFSA Journal 13 (2) 2015

- **restrictive risk management in DE to minimize Cu input into off-field non-target areas / surface waters (drift-reducing nozzles + buffer zones)**
- **introduction of the best available PPP application technology to minimize Cu input into in-field soils – still room for improvement**
- **discriminate in risk management between soils with / without historical Cu PPP contamination?**

Compensating for unavoidable effects



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- **how could this be achieved for Cu contamination of soils?**
- **is organic farming - in a holistic perspective - more environmentally favorable despite Cu use (comparative risk-benefit analysis)?**
- **why no Cu replacement in conventional farming?**

Internalising external costs

Ökomonitoring 2010

Tabelle 4-1: Gehalte von Kupfer in mg/L in Wein aus Trauben aus ökologischem und konventionellem Anbau

Herkunft	Trauben aus ... Anbau	Anzahl Proben	Mittelwert [mg/l]	Maximum [mg/l]
Württemberg, Baden (Reg.bezirk Stuttgart, anteilig Tübingen)	ökologischem	16	0,20	0,7
	konventionellem	27	0,33	1,1
Italien	ökologischem	14	0,23	0,6
	konventionellem	6	0,10	0,2
Spanien	ökologischem	1	–	< 0,1*
	konventionellem	0	–	–
Gesamt	ökologischem	31	0,21	0,7
	konventionellem	33	0,29	1,1

*: Bestimmungsgrenze

Programm der Lebensmittelüberwachung Baden-Württemberg

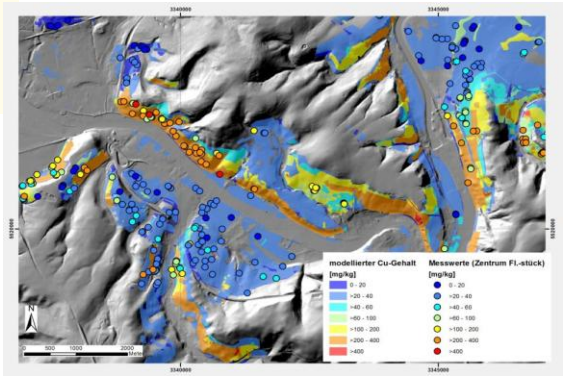
SPIEGEL ONLINE
04/02/2016 11:47 AM

Natural Capital

What Is the True Cost of Food?

By Anna Behrend

A kilogram of new potatoes this week costs just 1.29 in some German supermarkets. But is that the whole story? Not by a long shot. Environmental costs are almost always completely ignored. Some, though, are trying to change that.



Endbericht zur Studie

„Abschätzung und räumliche Darstellung des flächenhaften Ausmaßes erhöhter Kupfergehalte in Weinbergböden infolge des historischen Einsatzes kupferhaltiger Pflanzenschutzmittel – Erarbeitung einer Methodik an einer Modellregion in Deutschland"

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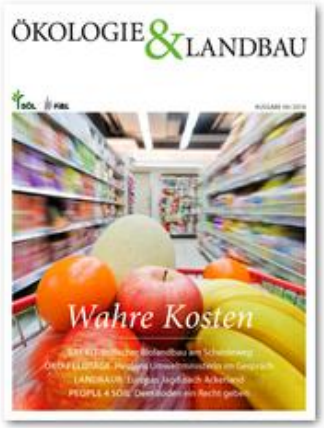
AgroScience



- **do societal benefits outweigh societal costs (e.g. for monitoring in harvested crops, foodstuff, soil)?**
- **how to estimate costs for the impairment of biodiversity and of eco-system services (e.g. production function of soil by earthworms)?**

Outro (hear the subtle messages from below-ground)

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