Dealing with national targets in pesticide reduction programmes

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Radzików, Sept. 5, 2011

Providing information, tools and services to scientists, policy and farm advisers, and trainers concerned with Integrated Pest Management
The study

ENDURE analysis of national plans for pesticide use or risk reduction in 5 countries

- Types of targets
  - Volume reduction
  - Dose-frequency
  - Risk and impact
  - No quantified target

- Associated research and extension
Targets

Denmark

- **1986-1997 Pesticide Action Plan I**
  - 50% volume reduction by 1997 relative to 1981-85
  - Success… but 8% TFI reduction + water quality problems

- **2000-2003 Pesticide Action Plan II**
  - Reduce TFI from 2.5 in 1997 to 2.0 in 2003
  - Success… but decision to do more

  - Reduce TFI from 2.0 in 2003 to 1.7 in 2009
  - Target not reached

- **Present-2013 Green Growth**
  - Reduce ‘Pesticide impact index’ to 1.4 (=TFI 1.7) by 2013
Denmark

Lessons learned - challenges

- limits of voluntary approach
- increasing farm size
- herbicide use in weed management

General observation

Volume ➔ Dose - Frequency ➔ Risk / Impact
The Netherlands

- **1990-2000 Multi-year Crop Protection Plan**
  - 50% volume reduction by 2000
  - Success… but high starting point

- **2003 National Agreement on Crop Protection**
  - Reduce environmental burden by 95% by 2010 relative to 1998 using Predicted Exposure Concentration / No-Effect Concentration

Volume → Dose - Frequency → Risk / Impact
Germany

- 2004 Plant Protection Product Reduction Plan
  - No quantified time-bound target

- 2008 National Action Plan on Sustainable Use of Plant Protection Products
  - 25% risks by 2020 relative to 1996-2005 evaluated via SYNOPS (Synoptic Assessment Model for Pesticides)

Volume ➔ Dose - Frequency ➔ Risk / Impact
France

- **2008-2018 Ecophyto 2018**
  - 50% reduction in number of unit dosages (≈TFI) between 2008 and 2018, if possible
  - but… already working on environmental and health and impact indicator (at least to interpret results)
No target...

- UK 2006 National Pesticides Strategy
  - No single quantified target
  - but... have a suite of qualitative goals for each of 6 action plans.

Can communicate and educate public on:
- Biodiversity (birds)
- MRL exceedances
- Frequency of incidents
- Complexities of the problem
To have or not to have a single target?

- Having a target helps to rally a diversity of stakeholders around a common goal
- Not having a target may help to communicate more subtle information

What kind of target to adopt?

- Kind of target adopted depends on resources available
How to achieve the targets?

...Measures to achieving the targets

- **Research and Extension**
  - Technological development
  - Knowledge transfer participatory approaches targeting farmers
Demonstration farms

**FRANCE**
- 1,000 pilot demonstration farms set up in 2010, and 2,000 farms planned by end 2011
  - Cropping system redesign
  - Diversification of crop rotations
  - Improvement of farmer knowledge

**DENMARK**
- Demonstration farms (7)
  - Implementation of specific PM-principles in practice (e.g. rotation, weed mapping)
  - Close collaboration with local advisor
- Focus on IPM advice (450 farms)
Demonstration farms

GERMANY
- Network of Reference farms (100)
- Demonstration farms (27) supporting IPM uptake and reduction of pesticide use
  - Close collaboration with advisory services

UNITED KINGDOM
- Crop assurance schemes with extended IPM/ICM protocols for on-farm IPM plans
  - Annual IPM plan considering new approaches
Research & innovation

- **FRANCE**
  - New institutional arrangements: Mixed Technological networks
  - Research funding for “Evaluation and reduction of risks“ (applied research, breeding and genetic resources, NODU)

- **GERMANY**
  - Broad funding initiative for research, technology development and knowledge transfer to promote the sustainable use of pesticides and IPM implementation

- **DENMARK**
  - Additional resources allocated for evaluation and authorisation of pesticides.
  - Focus on the authorisation of alternative plant protection products

- **UNITED KINGDOM - Sustainable Agriculture and Food Innovation Platform**
  - Funding “New Approaches to Crop Protection” focusing on crop productivity
    - Investments in the development of highly innovative tools
    - Research and development of weed mapping, precision farming, bio-fumigation, improved breeding for disease resistance
How to achieve the targets?

– Objectives of research differ between countries

– Demonstration farms and dissemination activities help to implement new technologies provided by research

– Initiatives include technological development and participatory approaches targeting farmers