

Comparative Risk Assessment and Substitution

- Experiences from a Member State

Peter Bergkvist
Swedish Chemicals Agency



7 March 2007

KEMI

What is the substitution principle?

The substitution principle can be expressed as taking steps to avoid products for which less hazardous substitutes are available. Substitution must be based on comparative assessment, making it possible to demonstrate whether there is another active substance, product or method available for the same use area which:

1. presents significantly less risk to human and animal health or the environment,
2. is sufficiently effective, also taking into account risk for development of resistance,
3. can be used without unreasonable economic or practical disadvantages for the user.

Motives for risk reduction

- All pesticide use involve risks
- All risks should be reduced to the minimum necessary from a risk/benefit approach

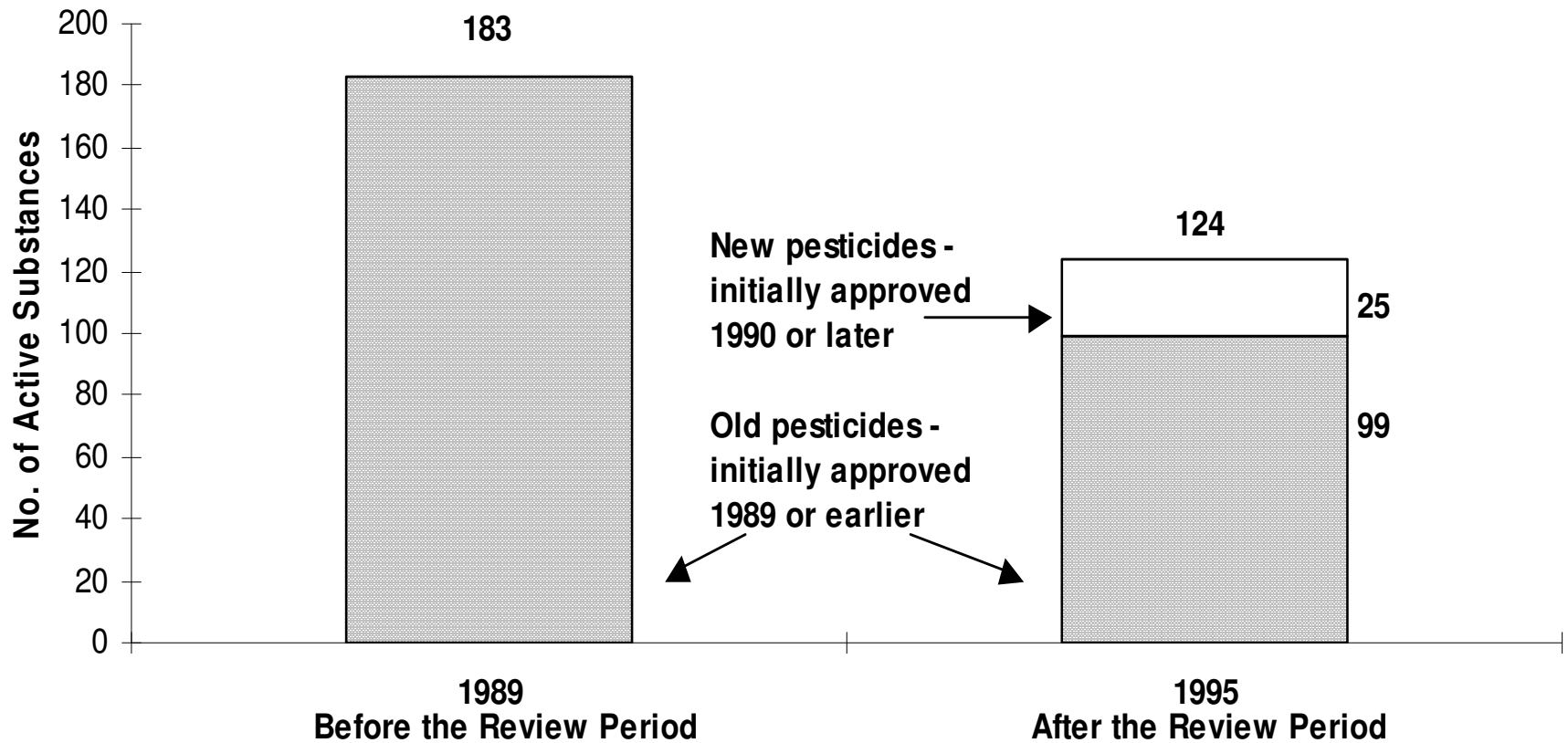
How it started

- The substitution principle is one of the basic principles of Swedish chemicals control.
- Most experiences from the beginning of the 90-ties.
- Also after 1995, but only for products with substances not yet in Annex 1.
- Important part in national action plans to reduce risks with plant protection products.

Review of all existing pesticides

- Maximum approval period of 5 years
- All approvals expired in 1990
- All products were divided into different use categories
- These were reviewed, one in each year
- The programme was completed in 1995

Review result



7 March 2007

Removed from market due to

Health concerns	Environmental concerns
Aldicarb	Aldicarb
Carbaryl	Atrazine
Dinocap	Dicofol
Diuron	Dienochlor
Endosulfan	Endosulfan
Metoxuron	Methoxychlor
Oxydemeton-methyl	Simazine
Thiram/ziram	Triadimenol
Vinclozolin	Trifluralin

7 March 2007

KEMI

Seven examples

1. A group of chemically related substances
2. Two different active substances
3. A chemical versus a non-chemical method
4. Substitution on parts of the use area
5. Different formulations
6. Step-wise approach in phase out plans
7. Reconsideration after practical use of the substitute

Post harvest disease control on fruit and ware table potatoes

- Postharvest uses of PPP:s are banned in Sweden.
- Instead, climatic control is used in warehouses.
- This action has reduced dietary exposure for consumers.



Use of plant growth regulators in cereals

- Since 1987, plant growth regulators are not allowed for use in wheat, barley and oat in Sweden.
- The aim has been to promote development and use of short straw varieties.
- This action has prevented an unnecessary increased dietary exposure for consumers.



Final picture

- Most effective at the level of approval of products
- Easier to rank and compare than to quantify potential risks
- It acts as a market force by promoting development and use of less risky pesticides
- Workshop in Brussels, 8 May 2007