



Réseau Recherche Santé
Environnement INTérieur

The French experience: from research to policies

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IAQ in France: a recent issue

Major steps:

- a French multidisciplinary network RSEIN and an IAQ Observatory both created in 2001
- Environmental and Health Action Plan in June 2004: 2 priority actions dedicated to IAQ among 12 (45 actions)

Research ↔ Expertise ↔ Policies



RSEIN network

- a French multidisciplinary network
- 26 scientific partners
- coordinated by INERIS
- close partnership with French IAQ Observatory
- supported by French ministries of Environment and Health + Agency for Environment and Energy Savings (ADEME)

OBJECTIVE: to analyse peer-reviewed scientific papers on IAQ → to identify key issues



What we do

- a quarterly electronic newsletter (in French):
 - critical analyses of scientific literature
 - new policies, regulations, guidelines, standards and reports (international scale)
- conferences on IAQ:
 - IAQ in schools in 2005, Paris
 - IAQ in homes in 2007, La Rochelle
- reviews in a French Journal (product and material emissions, radon, ultrafine particles, schools ...)

<http://rsein.ineris.fr>

Where are we now?

- 3 858 references in the database, 208 reviewed
- increasing number of papers, in particular on:
 - semi-volatile compounds
 - chemical reactions
 - children exposure and health (swimming pools)
 - photocatalytic pollutant removal
- ➔ RSEIN work permits to:
 - identify emerging issues and research needs
 - provide quick and recent overview on different topics
- ➔ A useful tool, not only for researchers but also for decision-makers; a tool that needs to remain reactive and relevant

French IAQ Observatory -1-

- coordinated by Scientific and Technical Center for Building (CSTB)
- a permanent survey to collect data on IAQ in various environments
- National campaign in **dwelling**s 2003-2005:
 - 30 parameters (chemical, physical and biological)
 - one week monitoring (indoor, outdoor, garage)
 - 567 dwellings, representative of 24 millions houses in continental metropolitan France
- ✕ analysis on-going to search determinants of pollution and typologies of dwellings

French IAQ Observatory -2-

- 2007-2009 IAQ in **children** microenvironments:
 - schools: “harmonised protocol”, i.e. key pollutants, sampling strategy...
 - schools: efficiency of ventilation strategy based on CO₂ sensors
 - swimming-pools and ice-rinks: types of building, existing monitoring data and time-activity-patterns
 - sport-halls: “protocol”
- 2008-2010 IAQ in **offices**:
 - data on energy consumption
 - BFR in dust and human biomonitoring

Research results for expertise -1-

lead by French Agency for environmental and occupational health safety (AFSSET)

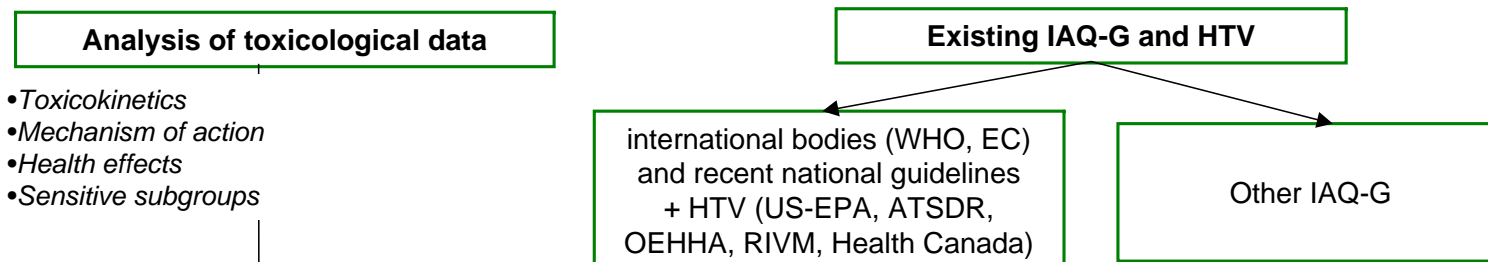
- indoor air quality guidelines (on-going process):

A French working group:

- to establish IAQ-G or review existing ones (INDEX) for priority indoor air pollutants (OQAI & INDEX)
- to consider possible specific French issues (pollutants)
- to participate to WHO programme

Method for establishing IAQ-G

.. Rationale



.. Critical review

Deep analysis, i.e. quality of tox/epi study, uncertainty factors

one IAQ-G or HTV is of "good quality"
(if several: case-by-case choice)

None of the values is entirely reliable

.. Choice

IAQ-G proposition

No IAQ-G proposition
further research and / or expertise is needed

Health-based IAQ-G

IAQ-G for formaldehyde, benzene and CO

Research results for expertise -2-

- risk assessment linked to inhaled formaldehyde
- evaluation scheme to qualify solid building materials regarding their VOC emission



Risques sanitaires
liés aux composés
organiques volatils
dans l'air intérieur

Risques sanitaires liés aux émissions
de composés organiques volatils
par les produits de construction
et d'aménagement intérieur

Procédure de qualification des produits de construction
sur la base de leurs émissions de composés organiques
volatils et de formaldéhyde et de critères sanitaires

Contribution à l'action 15 du Plan national santé environnement

- Avis de l'Afsset
- Rapport du groupe d'experts

En partenariat avec
le Centre scientifique et technique du bâtiment

CSTB
Centre scientifique et technique du bâtiment

afsset
agence française de sécurité sanitaire
de l'environnement et du travail



Octobre 2006

... to Policies -1-

- About what we know:
 - Public Health Law (2004):
 - ✘ radon: remediation thresholds
 - ✘ CO: information and surveillance system
 - ✘ lead: mandatory diagnoses (buy or rent)
 - ban smoke in occupational settings (February 2007) and public places (January 2008) regulated in November 2006

... to Policies -2-

- Even if we don't know completely:
 - national monitoring surveys in schools
(beginning in 2009):
 - ✘ formaldehyde and CO₂
 - ☑ back to expertise = which guidelines? health-based?
 - ☑ back to technical side = establishing protocol:
 - passive or active sampling?
 - short term: where? how many times?
 - long term: where (each classroom/1)? how often?

... to Policies -3-

- building products labelling regarding VOC emissions (agenda not defined)
- ban of CMR 1 & 2 compounds in building and decoration products (before June 2009)

“Grenelle de l’environnement”, discussion lead in 2007 with stakeholders (gvt, industrials, scientists, NGOs)

The future

- Environmental and Health Action Plan II in preparation (publication in 2009):
 - further research
 - consumer product emissions
 - “home interventions”
- Need for a global approach in the context of climate change, energy savings, building performance...

French policies

- + policies have been implemented
- scattered policies (no global and coherent approach)
- faster than scientific knowledge

Regarding EnVIE propositions

- IAQ Directive?
 - complicated because of many components / stakeholders / responsibilities
 - redundant, already implemented policies
- Anyway a need for a global frame:
 - harmonise protocols:
 - × products (REACH, GPSD)
 - × materials (CPD)
 - × equipments (stoves...)
 - harmonise monitoring programs and data collection
 - “check” buildings codes and energy policies
 - support research
- Green paper? should not be recommendations



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Thank you for your attention!