

Research Institute of Agricultural Engineering in Prague (RIAE)

The Nitrogen related Research and Policy in Czech Republic and on the way forward

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21 – 23th May, Wageningen (Netherlands)

Adopted measures

- **The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone**
- **In the animal housing measures have been required not only in new installation but in all installation in harmony with IPPC Directive**
- **Pigs and poultry farms of 2,000 fattening pigs or 750 sows or 40,000 poultry**
- **In 2006 – revision of legislation on the air protection- changes in categorization of agricultural sources according to potentially produced ammonia emissions**
- **More than 5 000 kg of NH₃ per year – medium source**
- **More than 10 000 kg of NH₃ per year – large source**
- **Calculation for categorization of farm is based on EF and projected capacity of animal places**

Adopted measures

- **Council Directive 96/61/EC (codified version Directive 2008/1/EC) concerning Integrated Pollution Prevention and Control (IPPC)**
- **BAT ⇒ the Low no. 76/2002 concerning Integrated Pollution Prevention and Control**
- **About 400 installations are under IPPC Directive in the Czech Rep.**
- **about of 35 % of total amount of pigs is under IPPC**
- **about of 85 % of total amount of poultry is under IPPC**
- **Obligation to obtain integrated permission – apr. 90% carried out**
- **UNECE Guidance document on control technique and BREF - need of coordination**

Adopted measures

- **Council Directive 80/68/EEC on the protection of groundwater against pollution caused by certain dangerous substances**
- **the Low no. 254/2001 concerning water protection**
- **Council Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture**
- **Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources**
- **the Low no. 103/2003 concerning determination of vulnerable zones and utilization and storage fertilizers, manure and slurry**
- **48% of Czech Republic area is in the vulnerable zones with extension trend**
- **increase of using of low emissions techniques – trailing shoe spreaders, trailing hoses or injectors, incorporation within 24 hours**

Next carried out steps

- **Problems**
- **Lack of experts in the environment protection and their coordination**
- **Lack of environmental studies – missing data for reporting**
- **Lack of investment for faster application of abatement techniques (covering of slurry tanks)**
- **Lack of investment for building of new farms or new machinery acquisitions**
- **Depression of the Czech pig market – decreasing of total amount of animals, low prices, store chain requirements (pig producers as hostages)**
- **The greatest problem is how to change people's mind living in countryside and villages and their behavior to environment.**

Research and development projects

Currently solved issue:

- Utilization of solid part of cattle slurry such a bedding material instead of straw or rubber mattress – via compost technology thermally treated bedding
- Stable indoor air ionization for ammonia emissions abatement in cattle and pigs breeding
- Odour measurement by olfactometer since 2007 to established EF for Czech farms
- GHG emissions measurement
- Assessment and verification of feed and manure additives – additives are used in 75% of farms under IPPC (ammonia, odour decline)
- BAT – SUPPORT – Coordinator – KTLB
- Objective of this project is to develop an integrated and consistent methodology for classification of livestock housing including storage, treatment and spreading of the manures produced, in terms of BAT.
- Design of questionnaire for BAT assessment used in EU countries – expert consultation
- Preliminary results dealing with a survey of BAT used should be available in June 2008
- Results will be used for revision of current BREF
- Results could be also a source of information for Expert Group on Ammonia Abatement

Expectations and activities for future work

- **To establish priority for future – Nitrate Directive x IPPC x Welfare x Water Directive**
- **Based on modeling and inventories or EPRTR to clearly declare the major problem.**
NH₃ x N₂O x NO₃ x odour x PM **Decreasing of NH₃ increases of N₂O (Oenema, 2007)**
- **Abatement measures for all farmers not only for selected categories of animals and farmers**
- **Policy makers should find courage to decrease thresholds and to cover cattle under abatement measures**
- **Objective of CLRTAP is „to control and reduce emissions“**
objective of IPPC is „to prevent and control emissions“.
- **CLRTAP could solve issue in the installations which are in work, IPPC in the new ones.**
- **Invigorate of Expert Group on Ammonia Abatement**
- **Expectation of close cooperation with TWG IRPP (just restored activity)**
- **Make legislation work better not only in air pollution but generally**
- **Simplification or integration.**
- **EIA x IPPC double assessment of technologies and their impact on environment.**
- **In CZ air protection x IPPC**

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