REPORTING ON STRATEGIES AND POLICIES

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SPAIN (Ministry of Agriculture, Fisheries and Food)
Agriculture and livestock; economic and social relevance

During last decades, Spain has made a huge effort to improve on farm modernization and has undergone technological investments.

Agriculture, food and livestock sector strategic pillar for foreign trade (~20% Total export value)

Large number of species and a great diversity of production systems
AMMONIA SOURCES IN SPAIN (2017)

Livestock 75%

- Inorganic N-f 17%
- Other 8%

Manure management:
- Dairy cattle 8%
- Non-dairy cattle 11%
- Sheep 3%
- Horses 1%
- Laying hens 3%
- Broilers 5%

Manure management - Other poultry 3%

Animal manure applied to soils 39%

Urine and dung deposited by grazing animals 5%

Manure management - Swine 22%
Manure management - Laying hens 3%
Manure management - Other poultry 3%
Manure management - Dairy cattle 8%
Manure management - Non-dairy cattle 11%
Policies and measures to reduce ammonia emissions

• Improving Emissions Estimation (N balance)

• Formative/Informative Measures
  • A Guide to the Best Available Techniques for Reducing the Environmental Impact of Livestock
  • Code of Good Agricultural Practice

• Integrated Regulatory Measures
  • On farm
  • Manure storage
  • Manure application
  • Inorganic fertilizers application
Improving Emissions Estimation

TIER II approach; FIRST STEP FOR STRATEGIES AND POLICIES

- Zootechnical bases for the calculation of the feed balance for nitrogen and phosphorus (including enteric fermentation)
- Tier II (IPCC 2006 & EMEP/EEA 2016) for ALL (9) relevant species (start-up 2014)
- Published, public and open for comments
- Available on the website of the Ministry of Agriculture, Fisheries and Food

https://www.mapa.gob.es/es/ganaderia/temas/ganaderia-y-medio-ambiente/balance-de-nitrogeno-e-inventario-de-emisiones-de-gases/default.aspx
Improving Emissions Estimation

TIER II approach; Challenges

• **Data:**
  • Covered from 1990 (despite difficulties to obtain data for first years)
  • Production data
  • Nutrition data
  • Representativeness and robustness.
  • Sources (scientific, public, private)

• fill in the gaps of the past, the role of the experts
Improving Emissions Estimation

TIER II approach; Findings

Lower emission per kg of product -> Higher efficiency

SPANISH Porc meat production/Kt Ammonia (Manure management – Swine)

Meat Tons (thousands) vs NH3 (ktn) from 1990 to 2016

Lower emission per kg of product means higher efficiency in manure management for porc meat production.
Improving Emissions Estimation

TIER II approach; Findings

Effects of other policies

- Prohibition of growth-promoting antibiotics
- Prohibition of meat-and-bone meal
- Generalized use of synthetic amino acids
- Enzymes and other additives
- Highly digestible protein
Policies and measures to reduce ammonia emissions

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Guide to the best available techniques to reduce the environmental impact of livestock farming is available for public use


Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions has been translated into Spanish

Formative/Informative Measures
An on-farm emissions estimation "on-line tool" is also available

Consistency between Greenhouse/contaminant gases inventory methodology & Pollutant Release and Transfer Register (PRTR)

http://prtr-es.es/documentos/metodos-medicion-calcu
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Integrated Regulatory Measures

- Obligation of band spreader for slurry application linked to CAP aids
- Plan “Renove” of agricultural machinery for slurry band spreading (*Ministry of Agriculture, Fisheries and Food funds; 2018, 2019*)
- On farm measures to reduce ammonia emissions in specific livestock sector regulations (regulations being drawn up)
  - Nutritional management (*FULLY IMPLEMENTED IN SPAIN* and included in TIER II approach)
  - Frequent removal of manure
  - Fully/partially covered manure storage (new/old farms)
Integrated Regulatory Measures

• Measures for the proper application of nutrients (regulations being drawn up)
  • Band spreading/injection of slurry.
  • Immediate covering of manure.
  • Measures for inorganic N fertilizers

• Complementary measures based in mandatory implementation of BATs and direct monitoring of reduction achieved
CONCLUSIONS

• TIER II is a very valuable and recommended approach for countries with high livestock production

• Spain has made a great effort to reach TIER II in the most relevant livestock species

• Main challenges are to obtain data from the past, which should be taken into account when drafting new guidelines

• Productive efficiency should be positively valued as a factor in reducing and controlling emissions (results show that productivity has increased while emissions remain stagnated)
• Training and information of stakeholders represents a very important task in environmental policies

• It is advisable to adopt a holistic approach to environmental policies in order to reach all the objectives (i.e. Ammonia, GHG and Nitrates)

• The influence of other policies on environmental impact, such as animal nutrition, international trade or animal health, must be taken into account