



HELCOM Recommendation 41/3

Adopted 4 March 2020
having regard to Article 20, Paragraph 1b)
of the Helsinki Convention

THE USE OF NATIONAL MANURE STANDARDS

THE COMMISSION,

RECALLING Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land-based sources,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,

RECOGNIZING also the specific requirements for the Prevention of Pollution from Agriculture as laid down in Annex III, part II of the Helsinki Convention,

RECALLING ALSO the Baltic Sea Action Plan (BSAP) adopted at the HELCOM Ministerial Meeting 2007 (Krakow) that calls for urgent actions to reduce the discharges of nutrients to the Baltic Sea Area,

RECALLING FURTHER that the HELCOM Ministerial Meeting 2013 (Copenhagen) agreed, with a view to fully utilize nutrient content of manure in fertilization practices and to avoid overfertilization, to establish by 2016 national guidelines or standards for nutrient content in manure and to develop by 2018 guidelines/recommendation on the use of such standards;

RECALLING FURTHER the agreement by HELCOM Ministerial Meeting 2013 to promote and advance towards applying by 2018 at the latest annual nutrient accounting at farm level taking into account soil and climate conditions giving the possibility to reach nutrient balanced fertilization and reduce nutrient losses at regional level in the countries, noting the positive examples of mandatory requirements on nutrient bookkeeping in some HELCOM countries and with an aim to apply it region-wide, as a first step, in areas critical to nutrient losses;

RECALLING AS WELL that the HELCOM Ministerial Meeting 2018 (Brussels) committed to elaborating by 2020 a Baltic Sea Regional Nutrient Recycling Strategy that aims for reduced nutrient inputs to and eutrophication of the Baltic Sea, based on the best available scientific knowledge on sustainable management and



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processing of nutrients in agriculture by safe recycling of nutrients especially from manure and sewage;

RECOGNIZING that a substantial part of the eutrophication problems observed in the Baltic Sea Area are caused by nutrient inputs from diffuse sources;

RECOGNISING FURTHER that phosphorus as a limited resource was included into the list of critical raw materials by the European Commission, thus underlining the importance of full utilization of manure phosphorus;

ACKNOWLEDGING existing national and international legislation and competences, criteria and guidance for manure handling, and, for those Contracting Parties being EU Member States, also other relevant EU legislation, aiming at preventing further degradation of the marine and freshwater environments and at achieving a healthy sea in good environmental/ ecological/chemical status by 2020/2021;

RECOGNISING ALSO the Circular Economy Package adopted by the European Commission on 2 December 2015, to increase recycling of waste;

RECOGNISING AS WELL that application of manure on soil might be a pathway of unwanted substances e.g. pharmaceuticals into the environment thus relevant precautionary measures should be foreseen;

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention:

- a) to establish as well as review and update, if necessary, the national standard values for manure every 4 years following the Guidance for advanced manure standards and sampling (Annex 1), and on the basis of data specified in the Guidance for collection of manure management data (Annex 2), taking into consideration geographical and climate conditions as well as practices and structure of the national livestock sector;
- b) to ensure efficient utilization of nutrients through fertilization planning at farm level, taking into account soil and climate conditions, soil nutrient content and soil type, previous crop as well as the planned crop;
- c) to use updated national standard values for manure in fertilization planning and nutrient bookkeeping in compliance with the application rates for nutrients specified in Annex III part II of the Helsinki Convention or national fertilization limits if stricter than the limits in Annex III part II;
- d) that in case complementary analysis of nutrient content in manure is needed, manure sampling and analysis are carried out in accordance with the Guidance for advanced manure standards and sampling (Annex 1);
- e) that in case manure is processed, sampling and analysis to determine the nutrient content of the processed products are also carried out following the Guidance for advanced manure standards and sampling (Annex 1);
- f) to utilize the national standard values for manure to identify areas with surplus of nutrients, to quantify nutrient load from agriculture and to evaluate the effectiveness of measures in order to reduce nutrient leaching and to support implementation of the EU Nitrates Directive, Water Framework Directive, Marine Strategy Framework Directive, National Emission Ceilings Directive and Russian Federal Water Code as well as implementation of other relevant national or international water protection regulations;
- g) to use the national standard values for manure in inventories and reporting of ammonia and



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greenhouse gas emissions;

- h) to use the national standards to enhance nutrient recycling;
- i) to use various regional platforms for international dialogue to exchange information regarding national manure standards.

REQUESTS the Contracting Parties to report on the implementation of this Recommendation by reporting the developments of national manure standards every 4 years.



Annex 1. Guidance for advanced manure standards and sampling

A. Guidance for updating national standards for manure nutrient content

It is advisable to update national manure standards as a mass balance calculation starting from animal feeding and excretion and taking into account the average practices used in animal housing and manure storage. The current national structure of the country's livestock sector and number of animals should be included.

The mass balance means the calculation of the masses of dry matter, organic matter and nutrients fed to the animals and excreted by the animals (the remaining masses after intake to the animal and its products), proceeding further to addition of materials added to the excreted mass during animal housing and storage and withdrawal of the losses occurring during housing and storage (Figure 1).

The mass balance calculation needs updated information on the animal rearing practices and manure management per animal category calculated.

- The information on animal feeding must be made available either as data collection from farms (via e.g. advisory services) or using national feeding recommendations.
- The practices regarding animal housing, manure management and storage should be regularly collected as a farm survey (Annex 2).

The updated standards should include all nationally relevant animal categories. All relevant manure types should be calculated including:

- Manure quantity (t/year)
- Dry matter, N, NH₄-N, P, K (t/year)

Also, the information should be made available in the separate phases of the manure management chain:

- Manure ex-animal (faeces and urine)
- Manure ex-housing (manure directly after removal from the housing unit)
- Manure ex-storage (manure after storage)

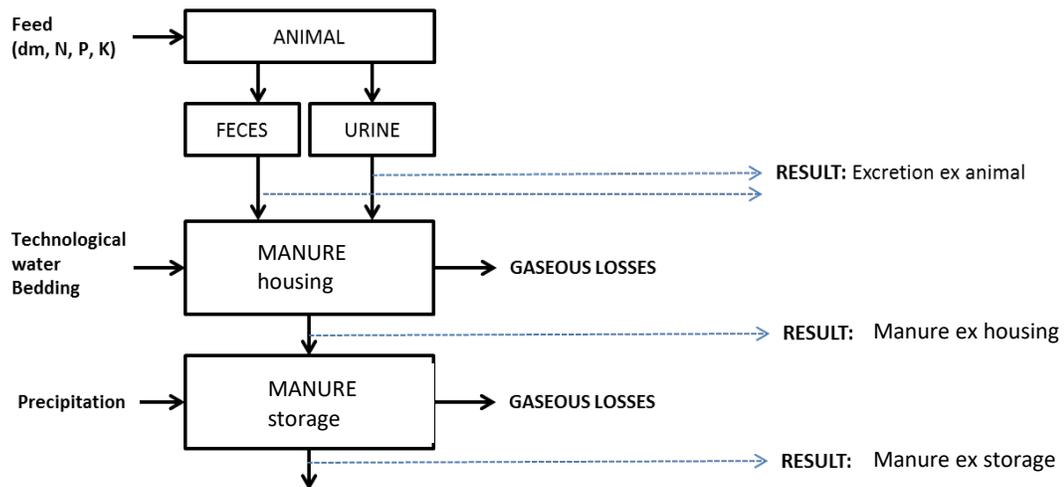


Figure 1. An example of the principle of manure mass balance calculation for manure. The inputs to the manure mass balance calculation depend on the manure type and practices and structures of animal housing and manure storage.

B. Guidance for manure sampling and analysis

B.1. Manure sampling

Sampling of manure should occur as close as possible to the time of manure fertilizer use (land application) to achieve accurate analysis of the manure nutrient content for fertilization.

Solid manure

Suitable instruments for solid manure sampling include e.g. pitchfork or solid manure auger. If sampling is done with an auger, suitable depth is approximately 1 meter.

8-10 subsamples from different locations of the manure pile in the housing unit or in storage should be taken and mixed together to achieve a representative sample of 1 litre for analysis. Subsamples from the outer layer of the manure pile should be avoided.

The sample should be sealed immediately and placed in a cooler to ensure temperature between 1 and 5 Celsius degrees until quick delivery to analysis.

Liquid manure

The slurry storage should be thoroughly mixed before sampling.

To ensure a representative sample, especially in case of difficulties with mixing, the sampling should



preferably be done at different levels: top, middle and bottom layer.

5-10 subsamples should be taken and mixed together, and a 1 litre sample should be taken from the mix for analysis.

The sample should be sealed immediately and placed in a cooler to ensure temperature between 1 and 5 Celsius degrees until quick delivery to analysis.

B2. Manure analysis

Manure samples should be analysed in laboratories specialised in manure as a matrix. The samples should be kept cooled and sealed from delivery to start of analysis procedures.

Since manure is very heterogeneous the samples should be homogenized as well as possible prior to analysis and the sample volume to analysis should be as large as possible.

The analysis methods used must be adapted to manure as a matrix.

The most important parameters to be analysed are:

- Dry matter
- N, NH₄-N, P, K



Annex 2. Guidance for collection of manure management data

A representative selection of animal farms in the nationally calculated animal categories should be regularly surveyed for their manure types and manure management practices. The data is vital for the mass balance calculation to include the proportions of different manure types and manure management solutions in a country.

Per each animal category reared on a farm, the survey should compile information on e.g.

- Manure type produced
- Housing technology
- Bedding material and amount used
- Amount of technological water added to manure
- Number of storages and their types
- Storage covers (per storage)

In case national information e.g. on manure processing and manure spreading technologies is needed, this information can be inquired as part of the survey.