

Questionnaire according to Commission Decision 94/741/EC for the report of the Member States on the transposition and implementation of Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture, amended by Directive 91/692/EEC

Reporting period 2019-2021

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Support
<p>Should you have any questions please do not hesitate to contact us. The best way to contact us is via our functional email address: estat-waste-statistics@ec.europa.eu</p> <p>Please specify your contact details and indicate what your question is about: e.g. registration in CIRCA, use of the eDAMIS system, waste concepts.</p> <p>With kindest regards, the Waste Data Centre Team at Eurostat EUROPEAN COMMISSION - Eurostat - Environment Statistics L-2920 LUXEMBOURG http://ec.europa.eu/eurostat/waste</p>

Submission

There is no need to repeat information already supplied but please indicate clearly where and when that information was provided.

I. INCORPORATION INTO NATIONAL LAW	
1. (a) Has the Commission been provided with details of the current laws and regulations in force to incorporate the Directive as amended into national law? (Yes/No)	Yes
1. (b) If the answer to (a) above is 'No', please state the reasons why:	

2. (a) If national measures have been adopted pursuant to Article 5 to ensure that sewage sludge may not be used in soils with concentrations of one or more heavy metals that exceed the agreed limit values, has the Commission been notified of these measures? (Yes/No)	Yes
2. (b) If the answer to (a) above is 'No', please state the reasons why:	
2. (c) If national measures have been adopted that are stricter than those provided for in the Directive, has the Commission been notified of these measures pursuant to Article 12? (Yes/No)	Yes
2. (d) If the answer to (c) above is 'No', please state the reasons why:	

II. IMPLEMENTATION OF THE DIRECTIVE

1. Please quote any specific conditions which have been deemed necessary for the protection of human health and the environment in accordance with the first indent of Article 3 (2), when using sludge residues from septic tanks and other similar installations for the treatment of waste water for agricultural purposes.

According to the Section 11 a of the Ministry of Agriculture and Forestry Decree 24/11 on Fertilizer Products (as amended by Decrees 12/12 and 7/13), the provisions concerning the use of sludge from waste water treatment plants apply also to sludge from septic tanks and waste from earth closets. Only exception is sludge from septic tanks and waste from earth closets that originate from living on the farm in question, from other activities of the farm or from other dwellings near the farm, provided that the recovery of the sludge does not need an environmental permit in accordance with the Environment Protection Act (527/2014). In this exceptional case the septic tank sludge and earth closet waste has to be treated by lime stabilization, composting or anaerobic digestion (thermophilic or mesophilic). If using mesophilic anaerobic digestion, the sludge has to be hygienized, composted, thermally dried or treated in some other similar manner before or after the digestion process. The provisions of Section 11 a of the Ministry of Agriculture and Forestry Decree concern fertilizers that contain more than 10 % of waste water treatment sludge, sludge from septic tanks or waste from earth closets (amendment 21/15).

2. (a) With regard to Article 5, please complete the following table, stating whether any of the information given is an estimate:

Metal	Article 5 (1)		Article 5 (2) (a)		Article 5 (2) (b)		Comments and/or reasons for the derogation
	Concentration in soils		Concentration in sludges		Application in agriculture		
	Directive Annex I A	National limit values	Directive Annex I B	National limit values	Directive Annex I C	National limit values	
	mg/kg dry matter	mg/kg dry matter	mg/kg dry matter	mg/kg dry matter	kg/ha/year	kg/ha/year	
Cadmium	1 to 3	0,5	20 to 40	1,5	0,15	0,0015	Regarding the Åland Islands the limit values are: Sludge 1,5 and Appl.in agric. 0,0015
Copper	50 to 140	100	1000 to 1750	600	12	0,6	Article 5(2)(a), Copper and Zinc concentrations in sludges: Exceeding of these maximum concentrations in

							<p>sludge can be allowed if the soil is proven to be poor in Copper or Zinc. The maximum concentration of harmful metals in the soil, specified in table 1 of Annex V of the Ministry of Agriculture and Forestry Decree 24/11 on Fertilizer Products (as amended by Decree 12/12), may however not be exceeded.</p> <p>Article 5(2)(b), Copper and Zinc application in agriculture: Loads of Copper and Zinc (considered as a nutrient) shall not be more than twofold if the soil for which the sludge is to be used is poor in nutrient in question. This, however, must not result in higher concentrations in the soil than those specified in table 1 of Annex V of the Ministry of Agriculture and Forestry Decree 24/11 (as amended by Decree 12/12).</p> <p>Regarding the Åland Islands the limit values are: Sludge 600 and Appl.in agric. 0,6</p>
Nickel	30 to 75	60	300 to 400	100	3	0,1	Regarding the Åland Islands the limit values are: Sludge 50 and Appl.in agric. 0,05.
Lead	50 to 300	60	750 to 1200	100	15	0,1	Regarding the Åland Islands the limit values are: Sludge 100 and Appl.in agric. 0,10.
Zinc	150 to 300	150	2500 to 4000	1500	30	1,5	Article 5(2)(a), Copper and Zinc concentrations in sludges: Exceeding of these maximum concentrations in sludge can be allowed if the soil is proven to be poor in Copper or Zinc. The maximum

							<p>concentration of harmful metals in the soil, specified in table 1 of Annex V of the Ministry of Agriculture and Forestry Decree 24/11 on Fertilizer Products (as amended by Decree 12/12), may however not be exceeded.</p> <p>Article 5(2)(b), Copper and Zinc application in agriculture: Loads of Copper and Zinc (considered as a nutrient) shall not be more than twofold if the soil for which the sludge is to be used is poor in nutrient in question. This, however, must not result in higher concentrations in the soil than those specified in table 1 of Annex V of the Ministry of Agriculture and Forestry Decree 24/11 on Fertilizer Products (as amended by Decree 12/12).</p> <p>Regarding the Åland Islands the limit values are: Sludge 800 and Appl.in agric. 0,80.</p>
Mercury	1 to 1.5	0,2	16 to 25	1	0,1	0,001	Regarding the Åland Islands the limit values are: sludge 1 and Appl.in agric. 0,001
Chromium	—	200	—	300	—	0,3	Regarding the Åland Islands the limit values are: Sludge 100 and Appl.in agric. 0,10.

2. (b) If the option proposed under Article 5 (2) (a) has been chosen, please indicate the maximum quantity of sludge that may be applied to the soil per surface unit per annum (in tonnes of dry matter per hectare per annum).

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2. (c) If any less stringent limit values for heavy-metal concentrations in soils have been permitted in accordance with Annex I A, footnote 1, please complete the following table, stating whether any of the information given is an estimate.

Metal	Number of sites	Surface area covered (ha)	Soil type (including hydrological characteristics)	pH	New limit value (mg/kg dry matter)	Comments and/or reasons for the derogation (use a separate sheet if necessary)
Cadmium						
Copper						
Nickel						
Lead						
Zinc						
Mercury						
Chromium						

2. (d) If any less stringent limit values for heavy-metal concentrations in soils have been permitted in accordance with Annex I A, footnote 2, please complete the following table (the first three columns are not obligatory):

Metal	Number of sites	Maximum quantity of sludge authorized (tonnes dry)	Soil type (including hydrological characteristics)	pH	New limit value (mg/kg dry matter)	Comments and/or reasons for the derogation (use a separate sheet if necessary)

		matter)				necessary)
Copper						
Nickel						
Zinc						

2. (e) If any less stringent limit values for heavy-metal concentrations in soils have been permitted in accordance with Annex I C, footnote 1, please complete the following table, stating whether any of the information given is an estimate.

Metal	Number of sites	Surface area covered (ha)	Soil type (including hydrological characteristics)	pH	New limit value (mg/kg dry matter)	Comments and/or reasons for the derogation (use a separate sheet if necessary)
Cadmium						
Copper						
Nickel						
Lead						

Zinc						
Mercury						
Chromium						

3. (a) With regard to Article 6, please briefly describe the technologies employed for treating sludge.

Anaerobic digestion, aerobic digestion, lime stabilization, composting and chemical oxidation.

The Åland Islands: Anaerobic digestion, aerobic digestion, lime stabilization, composting and drying.

3. (b) Have rules been drawn up to ensure that analyses are carried out at more frequent intervals than those provided for in Annex II A (1)? (Yes/No)

Yes

3. (c) If the answer to (b) above is 'Yes', please give further details.

According to Annex 4 of the Government Decree on Waste 978/2021, in order to monitor quality fluctuations, samples of sludge intended for use in agriculture shall initially be taken at short intervals. If there is little fluctuation in results during the first year, analysis frequency can be reduced. The frequency of analyses shall be determined by the size of the sewage treatment plant as follows:

Population equivalent	Frequency of analyses/year	
	First year	Later years
>100 000	≥12	≥4
10 000-100 000	≥6	≥3
2 000- 10 000	≥4	≥2
500-5 000	≥ 1	≥ 1
< 500	≥ 1	at least once every two years

Whenever the quality of the incoming sewage water is altered significantly, the frequency of analyses shall be increased to at least the level required during the first year.

Regarding the Åland Islands: See the report for the period 1995-1997. No rules have been drawn up.

3. (d) Have conditions been laid down for authorizing the injection or working into the soil of untreated sludge (Article 6 (a))? (Yes/No)

No

3. (e) If the answer to (d) above is 'Yes', please give further details.

Injection of untreated sludge is not authorized.

4. With regard to Article 7, please indicate, where appropriate, the length of the period during which it is forbidden to use sludge on grassland before it is grazed, and on forage crops before harvest.

Sludge may not be spread on grasslands before it is grazed or on forage crops before harvest (Section 11 a of the Ministry of Agriculture and Forestry Decree 24/11 on Fertilizer Products, as amended by Decrees 12/12 and 7/13).

Regarding the Åland Islands: On grassland it is permitted to use sludge just before sow, but it is not permitted to grow potatoes, root-crops and vegetables until at least five years have passed after spreading the sludge.

5. (a) Have any reduced limit values or, where appropriate, any other measures, been authorized at national level where the pH of the soil is below 6, as provided for in Article 8? (Yes/No)

Yes

5. (b) If the answer to (a) above is 'Yes' please complete the following table:

Metal	Cadmium	Copper	Nickel	Lead	Zinc	Mercury	Chromium
Reduced limit value (mg/kg/dry matter)	0,5	100	60	60	150	0,2	200
Other Measures	Sludge may be used only on cultivated soil with a pH value above 5.8. If lime-stabilized sludge is used, the pH value of the soil shall be above 5.5. (Ministry of Agriculture and Forestry Decree 24/11 on Fertilizer Products (as amended by Decree 7/13), Section 11 a)						

6. (a) If appropriate, indicate which types of analysis are carried out, pursuant to Article 9, on soil parameters in accordance with Annex II B (1), other than those mentioned in Annex II B (3) (pH and heavy metals).

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6. (b) State the minimum frequency of soil analysis (Annex II B (2)).

If there is any doubt that the concentrations of heavy metals in the agricultural soil are too high, the first samples shall be taken before the sludge is spread for the first time. If, based on the loads of heavy metals, there is reason to assume that the maximum concentrations of heavy metals may be exceeded, a new analyze shall be made within five years. (Ministry of Agriculture and Forestry Decree 24/11 on Fertilizer Products (as amended by Decrees 12/12 and 7/13), Section 11 a and Annex VI)

Regarding the Åland Islands: Every 5th year.

7. On the basis of the data contained in the records referred to in Article 10, complete the following tables, stating whether the information given is an estimate.

	Dry matter (tonnes/year)			Surface covered (optional)		
	2019	2020	2021	2019	2020	2021
Sludge produced by the waste water treatment plants	160 173	153 651	not available			

Sludge used in agriculture	64 069	59 023	not available			
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SLUDGE USED IN AGRICULTURE			
Average content (mg/kg dry matter)			
Parameters	2019	2020	2021
METALS			
Cadmium	0,38	0,49	0,55
Copper	147	237	291
Nickel	21	19	35
Lead	6	6	7
Zinc	241	302	343
Mercury	0,19	0,36	0,19
Chromium	55	47	104
Nitrogen (total N)	27 000	41 800	42 000
Phosphorus (total P)	22 357	16 067	16 600

8. State the number of cases in which exemptions under Article 11 have been granted.
Exemptions concerning the required frequency of analyses of sludge/year have been granted to waste water treatment plants with less than 5000 person equivalents (see answer to question 3(c)). There are approx. 250 plants with 100-5000 person equivalents in Finland.
<i>Regarding the Åland Islands:</i> No sludge was used in agriculture if the sludge is produced in ordinary waste water treatment plants.