



**Report 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,  
for reference years 2016 - 2018**



*Bratislava, August 2019*

**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**

<b>Please provide the following contact information and complete the grey text boxes:</b>	
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<b>Country your Organisation is representing</b>	Slovak Republic
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<p><b>Support</b></p> <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: <a href="mailto:estat-waste-statistics@ec.europa.eu">estat-waste-statistics@ec.europa.eu</a> 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 <a href="http://ec.europa.eu/eurostat/waste">http://ec.europa.eu/eurostat/waste</a></p>
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<p><b>Submission</b></p> <p>The submission is due the <b>30. September 2019</b> Please send the completed questionnaire to EUROSTAT via eDAMIS. For more information how to submit the completed questionnaire via eDAMIS see: <a href="http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/reporting#reporting">http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/reporting#reporting</a></p>
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**There is no need to repeat information already supplied but please indicate clearly where and when that information was provided.**

<b>I. INCORPORATION INTO NATIONAL LAW</b>	
<b>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?</b>	Yes

(Yes/No)	
<b>1. (b) If the answer to (a) above is 'No', please state the reasons why:</b>	
<b>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)</b>	Yes
<b>2. (b) If the answer to (a) above is 'No', please state the reasons why:</b>	
<b>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)</b>	<p>Yes</p> <p>The following data are concerned:</p> <ul style="list-style-type: none"> <li>• stricter limit values of concentrations of all heavy metals in soils than those provided by the Directive 86/278/EEC</li> <li>• stricter limit values of concentrations of all heavy metals in sludge – on the lower limit of the range set out by the Directive 86/278/EEC, and for Cd and Hg these values are lower than the lower limit of the range set out by the Directive 86/278/EEC,</li> <li>• stricter limit values of amounts of all heavy metals (3-6 times lower), that can be incorporated yearly into agricultural soil, calculated as 10 year average</li> </ul>
<b>2. (d) If the answer to (c) above is 'No', please state the reasons why:</b>	

## 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.**

Specific conditions were not defined. Application of such sludge into agricultural soil is forbidden.

**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	1.0	20 to 40	10	0.15	0.03	
Copper	50 to 140	50	1000 to 1750	1000	12	3.0	
Nickel	30 to 75	50	300 to 400	300	3	0.9	
Lead	50 to 300	70	750 to 1200	750	15	2.25	
Zinc	150 to 300	150	2500 to 4000	2500	30	7.5	
Mercury	1 to 1.5	0.5	16 to 25	10	0.1	0.03	
Chromium	—	60	—	1000	—	3.0	

**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 tones of dry matter per hectare per annum).**

The dose of treatment sludge applied into the agricultural soil must not be higher than 15 tonnes of dry matter per hectare during five consecutive years, and soil user is responsible for that as sludge consumer.

**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.**

Less stringent values of limit concentrations for heavy metals in soils have not been permitted.

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)
<b>Cadmium</b>						
<b>Copper</b>						
<b>Nickel</b>						
<b>Lead</b>						

<b>Zinc</b>						
<b>Mercury</b>						
<b>Chromium</b>						

**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):**

Less stringent values of limit concentrations for heavy metals in sludge have not been permitted.

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

**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.**

Less stringent values of amounts for heavy metals that can be annually incorporated into agricultural soils than those required by the Directive 86/278/EEC have not been permitted.

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


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

In Slovakia aerobic sludge stabilization is prevailing and is used by 70.55 % of wastewater treatment plants (WWTP). This stabilization method is mostly practiced in WWTPs up to 10 000 p.e. (only 20 WWTPs with aerobic stabilization are over than 10 000 p.e.). As a result, the production of aerobically stabilized sludge is only around 21.73 % of the total sludge production. Approximately 29 % of the total WWTPs (usually over 10,000 p.e.) use anaerobic stabilization and part of it (3.74 % of the total WWTPs in Slovakia) use slotted (Imhoff) tanks. The mass fraction of anaerobically stabilized sludge generates around 78% of total sludge production in Slovakia. In one WWTP chemical stabilization of sludge (0.14 % of total sludge production) is used.

**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)**

No  
Rules for performance of analyses in more frequent intervals have not been developed.

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

**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  
Application of untreated sludge is not permitted, thus, the conditions have not been defined.

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

**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.**

Application of sludge to the following types of soils is forbidden:

- a) permanent grasslands or forage crops on arable land, if the grass is expected to be grazed or forage crops to be harvested earlier than 5 weeks from the application,
- b) agricultural soil where fruits and vegetables are cultivated, except fruit trees,
- c) agricultural soil intended for cultivation of fruits and vegetables harvested parts of which are in the direct contact with soil and they are consumed crude, ten months before the harvest and during the harvest itself.

**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, if the pH value is between 5 and 6 the sludge can be applied only to agricultural or forest soil where the concentration of risk substances is lower than the value set out for the pH value 6 or more.

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

<b>Metal</b>	Cadmium	Copper	Nickel	Lead	Zinc	Mercury	Chromium
<b>Reduced limit value</b> (mg/kg/dry matter)	0.5	20	15	70	60	0.1	30
<b>Other Measures</b>							

**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)).**

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**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)		
	2016	2017	2018	2016	2017	2018
<b>Sludge produced by the waste water treatment plants</b>	<b>53 054</b>	<b>54 517</b>	<b>55 929</b>			
<b>Sludge used in agriculture</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

SLUDGE USED IN AGRICULTURE Average content (mg/kg dry matter)			
<b>Parameters</b>	2016	2017	2018
<b>METALS</b>			
<b>Cadmium</b>			
<b>Copper</b>			
<b>Nickel</b>			
<b>Lead</b>			
<b>Zinc</b>			
<b>Mercury</b>			
<b>Chromium</b>			
<b>Arsenic</b>			
<b>ELEMENTS</b>			



<b>Nitrogen (total N)</b>			
<b>Phosphorus (total P)</b>			

**8. State the number of cases in which exemptions under Article 11 have been granted.**

With regard to the Article 11 – no waste water treatment plant was exempt from the scope of the Article 6 b) and Article 10 Paragraph 1 b), c) and d) and Paragraph 2.

**Explanation to the Paragraph 7. of the section II. of the Questionnaire:**

In 2016, the total sludge production in Slovakia represented 53 054 t of dry mass.

Sludge dry mass in amount of 45 670 t (86.08 %) was recovered.

Out of this amount, 34 695 t (65.39 %) were used in soil processes:

25 176 t (47.45 %) of sludge dry mass were used for compost production,

9 519 t (17.94 %) of sludge dry mass were used for other purposes in soil processes (reclamation of landfills, areas, production of growing media, etc.).

No sludge was applied directly into agricultural soil.

In addition, 10 975 t (20.69 %) of sludge dry mass were biologically processed and used for energy recovery, 2 359 t (4.45 %) of sludge dry mass were landfilled, 68 t of sludge dry mass (0.13%) were disposed of by incineration and 4 957 t (9.34 %) of sludge dry mass were temporarily stored in WWTPs.

In 2017, the total sludge production in Slovakia represented 54 517 t of dry mass.

Sludge dry mass in amount of 46 654 t (85.58 %) was recovered.

Out of this amount, 34 416 t (63.13 %) were used in soil processes:

24 618 t (45.16 %) of sludge dry mass were used for compost production,

9 798 t (17.97 %) of sludge dry mass were used for other purposes in soil processes (reclamation of landfills, areas, production of growing media, etc.).

No sludge was applied directly into agricultural soil.

In addition, 12 238t (22.45 %) of sludge dry mass were biologically processed and used for energy recovery, 2 636 t (4.83 %) of sludge dry mass were landfilled and 5 227 t (9.59 %) of sludge dry mass were temporarily stored in WWTPs.

In 2018, the total sludge production in Slovakia represented 55 929 t of dry mass.

Sludge dry mass in amount of 44 659 t (79.85 %) was recovered.

Out of this amount, 32 982 t (58.97 %) were used in soil processes:

25 450 t (45.50 %) of sludge dry mass were used for compost production,

7 532 t (13.47 %) of sludge dry mass were used for other purposes in soil processes (reclamation of landfills, areas, production of growing media, etc.).

No sludge was applied directly into agricultural soil.

In addition, 11 677 t (20.88 %) of sludge dry mass were biologically processed and used for energy recovery, 2 451 t (4.38 %) of sludge dry mass were landfilled and 8 819 t (15.77 %) of sludge dry mass were temporarily stored in WWTPs.