

**SUBSIDIARY LEGISLATION 435.14****SLUDGE (USE IN AGRICULTURE) REGULATIONS**

28th June, 2002

*LEGAL NOTICE 212 of 2001, as amended by Legal Notice 426 of 2007.*

1. (1) The title of these regulations is the Sludge (Use in Agriculture) Regulations. Citation and scope.

(2) The purpose of these regulations is to regulate the use of sewage sludge in agriculture in such a way as to prevent harmful effects on soil, vegetation, animals and man, thereby encouraging the correct use of such sewage sludge.

2. (1) For the purpose of these regulations - Interpretation.

"agriculture" means the growing of all types of commercial food crops, including those for stock-rearing purposes, and cognate words shall be construed accordingly;

"agricultural land" means an area of land used for agriculture;

"competent authority" means the Department for Environment Protection under the guidance of the Director for Environment Protection and such other body or person as the Minister responsible for the environment may by order in the Gazette prescribe and different bodies or persons may be designated as a competent authority for different provisions and different purposes of these regulations;

"Director of Agriculture" means the director responsible for the Department of Agriculture and includes any officer in the Department of Agriculture who acts on his behalf;

"industrial sludge" means sludge from the treatment of industrial waste water of the sectors listed in Annex II;

"sludge" means:

- (i) residual sludge from sewage plants treating domestic or urban waste waters and from other sewage plants treating waste waters of a composition similar to domestic and urban waste waters;
- (ii) residual sludge from septic tanks and other similar installations for the treatment of sewage;
- (iii) residual sludge from sewage plants other than those referred to in paragraphs (i) and (ii);

"septic tank sludge" means sludge from septic tanks which contains human excreta and domestic waste water from single or multiple human dwellings;

"sludge producer" means any person who manages a plant at which sludge is produced for disposal;

"the sludge table" means the table set out in Schedule 1;

"the soil table" means the table set out in Schedule 2;

"treated sludge" means sludge which has undergone biological, chemical or heat treatment or any other treatment processes envisaged in Annex I or a combination of these processes, so as to significantly reduce its fermentability and the health hazards when it is used;

"use" means spreading of sludge on the soil or any other application of sludge on and in the soil;

"urban waste water" means domestic waste water or the mixture of domestic waste water with industrial waste water and, or run-off rain water;

"domestic waste water" means waste water from residential settlements and services which originates predominantly from the human metabolism and from household activities.

(2) In these regulations, references to a numbered regulation, Annex or Schedule are references to the regulation, Annex or Schedule bearing that number in these regulations.

Prohibition on use or supply of sludge.

3. (1) No person shall cause or knowingly permit sludge to be used or supply sludge to be used on agricultural land unless it is treated in accordance with these regulations.

(2) The competent authority shall ensure that the sludge shall be tested in accordance with Schedule 1.

(3) The Director of Agriculture shall ensure that the soil on agricultural land shall be tested or assessed in accordance with Schedule 2.

(4) On agricultural land:

(a) the average annual rate of addition to the land by means of the sludge of any of the elements listed in column (1) of the sludge table in Schedule 1 shall not exceed the limit (in grams per hectare per year) specified in column (2) thereof; and

(b) the concentration in the soil of any of the elements listed in column (1) of the soil table in Schedule 2 shall not exceed the limit specified in column (2) thereof; and where that limit is not exceeded at the time of the use, it shall not be exceeded by reason of the use.

(5) The pH value of the soil shall not be less than 5.

(6) Any person who uses sludge on agricultural land shall use it in such a way that account is taken of the nutrient needs of the plants and that the quality of the soil and of the surface and ground water is not impaired.

Precautions to be taken after sludge is used.

4. (1) Any person who uses sludge or septic tank sludge on agricultural land shall use it according to the following table, such advanced and conventional treatments being described in Annex I:

TABLE

	Advanced Treatment	Conventional Treatment
Pastureland	Yes	Yes, deep injection and no grazing in the six following weeks
Forage crops	Yes	Yes, no harvesting in the six weeks following spreading
Arable crops	Yes	Yes, deep injection or immediate ploughing down
Fruit and vegetable crops in contact with the ground	Yes	No. No harvest for 12 months following application
Fruit and vegetable crops in contact with the ground eaten raw	Yes	No. No harvest for 30 months following application
Fruit trees, vineyards, tree plantations and re-forestation	Yes	Yes. Deep injection and no access to the public in the 10 months following spreading
Parks, green areas, city gardens, all urban areas where the general public has access	Yes, only well stabilised and odourless sludge	No
Forests	No	No
Land reclamation	Yes	Yes, no access to the public in the months following spreading

(2) Where any untreated sludge has been used on land without being injected into the soil, the occupier of the land affected shall, as soon as reasonably practicable thereafter, cause such sludge to be worked into the soil of the land affected.

5. When any person, other than the sludge producer or any person acting on his behalf, uses sludge on land, the occupier of that land shall forthwith provide the following information to the sludge producer:

- (a) the address and area of the agricultural land concerned;
- (b) the date on which the sludge was used;
- (c) the quantity of sludge so used; and
- (d) where the occupier has used sludge not supplied by the sludge producer, the name and address of the person who supplied that sludge, and the quantity of sludge so used which was supplied by that person.

Information to be supplied to sludge producer.

6. Every sludge producer shall prepare and maintain a register containing the following particulars:

- (a) the total quantity of sludge produced within a year from when these regulations come into force and

Register to be kept by sludge producer.

- subsequently, for each year thereafter;
- (b) in relation to sludge supplied for the purpose of use in agriculture within a year from when these regulations come into force and subsequently, for each year thereafter:
- (i) the total quantity of sludge supplied;
  - (ii) the composition and properties of that sludge as determined in accordance with Schedule 1;
  - (iii) the quantities of treated sludge supplied and the type of treatment carried out;
  - (iv) the names and addresses of the persons to whom the sludge was supplied; and
  - (v) the address and area of each agricultural land on which sludge has been used, the quantity of sludge used thereon, and the amount of each of the elements listed in the sludge table in Schedule 1 which have been added thereto;
- (c) a copy of every analysis or assessment made under Schedule 2.

Supply of information about sludge.

**7.** (1) A sludge producer shall make available the register maintained under regulation 6 for inspection by the competent authority and, or the Director of Agriculture with such information or facilities as such authority or Director may reasonably require relating to the register or otherwise relating to sludge supplied by the sludge producer, including facilities for analysis of representative samples of sludge or soil.

(2) As soon as reasonably practicable after testing sludge in accordance with Schedule 1, the sludge producer shall provide details of the analysis made under that Schedule to all persons to whom the sludge producer supplies sludge.

Offences under these regulations.

**8.** Any person shall be guilty of an offence under these regulations if:

- (a) he fails to comply with any provision of these regulations or with any order lawfully given in terms of any provision of these regulations; or
- (b) he contravenes any restriction, prohibition or requirement imposed by or under these regulations; or
- (c) he acts in contravention of any of the provisions of these regulations; or
- (d) he conspires or attempts, or aids, or abets, any other person by whatever means, including advertising, counselling or procurement to contravene the provisions of these regulations or to fail to comply with any such provisions, including any order lawfully given in terms of any of the provision of these regulations, or to contravene any restriction, prohibition or requirement imposed by or under the said regulations.

9. Any person who commits an offence against these regulations shall, on conviction, be liable:

Penalties.  
Amended by:  
L.N. 426 of 2007.

- (a) on a first conviction, to a fine (*multa*) of not less than one thousand and one hundred and sixty-four euro and sixty-nine cents (1,164.69) but not exceeding two thousand and three hundred and twenty-nine euro and thirty-seven cents (2,329.37);
- (b) on a second or subsequent conviction, to a fine (*multa*) of not less than two thousand and three hundred and twenty-nine euro and thirty-seven cents (2,329.37) but not exceeding four thousand and six hundred and fifty-eight euro and seventy-five cents (4,658.75), or to imprisonment for a term not exceeding two years, or to both such fine and imprisonment:

Provided that whenever any person is found guilty of committing an offence under these regulations by means of a vehicle, the owner of the said vehicle, where applicable, is held liable in the same manner and degree:

Provided further that the court shall order any person who has been found guilty of committing an offence against these regulations to pay for the expenses incurred by the public entities and, or other persons acting on their behalf involved in the implementation of these regulations and restitution of the environment as a result of the said offence, the revocation of the permit issued by the Police and the confiscation of the *corpus delicti*.

10. (1) The provisions of articles 23 and 30(1) of the Criminal Code shall, *mutatis mutandis*, apply to proceedings, in respect of offences against these regulations, so however that the disqualification from holding or obtain a licence, permit or authority shall in no case be for less than one year.

Applicability of the  
Criminal Code.  
Cap. 9.

(2) Notwithstanding the provisions of article 370 of the Criminal Code, proceedings for an offence against these regulations shall be taken before the Court of Magistrates (Malta) or the Court of Magistrates (Gozo), as the case may be, and shall be in accordance with the provisions of the Criminal Code regulating the procedure before the said courts as courts of criminal judicature.

Cap. 9.

(3) Notwithstanding the provisions of the Criminal Code, the Attorney General shall always have a right of appeal to the Court of Criminal Appeal from any judgement given by the Court of Magistrates (Malta) or the Court of Magistrates (Gozo) in respect of proceedings for any offence against these regulations.

Cap. 9.

## SCHEDULE 1

## TESTING OF SLUDGE

1. Every sludge producer shall ensure that sludge produced by him and supplied for the purpose of use in agriculture is tested in accordance with this Schedule as soon as reasonably practicable after these regulations come into force, and thereafter at intervals of not more than six months, and in any event where changes occur in the characteristics of the waste water being treated.
2. Representative samples of sludge intended to be used on agricultural land shall be taken after processing, but before delivery to the user.
3. Each sample shall be analysed so as to determine -
  - (a) the pH value thereof;
  - (b) the percentage content of dry matter, organic matter, nitrogen and phosphorus; and
  - (c) the elements listed in column (1) of the sludge table below.
4. The average annual rate of addition referred to in regulation 3(4) shall be ascertained for each of the elements in the sludge table by taking the average amount of that element in the sludge used on that land in the period of ten years ending on the date of such use.

## SLUDGE TABLE

(1) Element	(2) Grams per hectare per year	(3) Limit of detection (mg/kg of dry matter)
ZINC	6000	2000
COPPER	2400	800
NICKEL	600	200
CADMIUM	15	5
LEAD	1500	500
MERCURY	15	5
CHROMIUM	2400	800

5. The analysis requisite to ascertain the concentration of metals referred to in paragraph 3(c) shall be carried out following strong acid digestion; the reference method of analysis shall be that of atomic absorption spectrometry, and the limit of detection for each metal shall not exceed the appropriate limit value specified in column (3) of the sludge table.

## SCHEDULE 2

## TESTING OF AGRICULTURAL SOIL

1. The Director of Agriculture shall ensure that agricultural soil is tested or assessed in accordance with this Schedule.
2. (1) Where -
  - (a) sludge has been used on an agricultural unit before the coming into force of these regulations; and

- (b) adequate scientific evidence is available as to the characteristics of the soils thereof, and the sludge used thereon, before that date;

an assessment shall be made as soon as possible after the coming into force of these regulations of the pH value of the soils as at that date, and the probable concentrations in the soil as at that date, of

- (i) the elements listed in column (1) of the soil table; and
  - (ii) the soil shall be tested not later than one year from when these regulations come into force.
- (2) Subject to paragraph (1), the soil of agricultural land shall be tested -
- (a) where sludge is to be used on that land for the first time after the coming into force of these regulations,
  - (b) as soon as may be after the twentieth anniversary of the date when the soil was last tested in accordance with this Schedule; or
  - (c) where the occupier of the land is so requested in writing by the Director of Agriculture, and not less than five years have elapsed since the soil was last tested in accordance with this Schedule.
3. For each agricultural unit on which sludge is to be used, a representative sample of soil shall be obtained by mixing together 25 separate core samples, each taken to the depth of the soil or 25 centimetres, whichever is the lesser depth.
4. Each representative sample shall be analysed so as to ascertain -
- (a) the pH value of the sample;
  - (b) the concentration in that sample of the following metals:
    - (i) the elements set out in the soil table below.
5. For the purpose of regulation 3(4), the specified limit of concentration of elements in any representative sample, expressed in milligrams per kilogram of dry matter, is set out in the soil table below.

SOIL TABLE

(1) Element	(2) Limit (mg/kg of dry matter) According to pH of soil		
	5.0 < 6.0	6.0 - 7.0	> 7.0
CADMIUM	0.5	1	1.5
CHROMIUM	30	60	100
COPPER	20	50	100
MERCURY	0.1	0.5	1
NICKEL	15	50	70
LEAD	70	70	100
ZINC	60	150	200

6. The analysis requisite to ascertain the concentration of metals referred to in paragraph 4(b) shall be carried out following strong acid digestion; the reference method of analysis shall be that of atomic absorption spectrometry, and the limit of detection for each metal shall not exceed 10% of the appropriate limit value specified in the soil table.

## Annex I: Sludge Treatment Processes

## Advanced treatments (hygienisation)

- Thermal drying ensuring that the temperature of the sludge particles is higher than 30°C with a reduction of water content to less than 10% and maintaining a water activity above 0.90 in the first hour of treatment;
- Thermophilic aerobic stabilisation at a temperature of at least 55° for 20 hours as a batch, without admixture or withdrawal during the treatment;
- Thermophilic anaerobic digestion at a temperature of at least 53° for 20 hours as a batch, without admixture or withdrawal during the treatment;
- Thermal treatment of liquid sludge for a minimum of 30 minutes at 70°C followed by mesophilic anaerobic digestion at a temperature of 35° with a mean retention period of 12 days;
- Conditioning with lime reaching and maintaining a pH of 12 or more for three months.

The process shall be initially validated through a 6 Log<sub>10</sub> reduction of a test organism such as Salmonella Senftenberg W 775.

The treated sludge shall not contain Salmonella spp in 50g (wet weight) and the treatment shall achieve at least a 6 Log<sub>10</sub> reduction in Escherichia Coli to less than 5.10<sup>2</sup> CFU/g.

## Conventional treatments

- Thermophilic aerobic stabilisation at a temperature of at least 55°C with a mean retention period of 20 days;
- Thermophilic anaerobic digestion at a temperature of at least 53°C with a mean retention period of 20 days;
- Conditioning with lime ensuring a homogenous mixture of lime and sludge. The mixture shall reach a pH of more than 12 directly after liming and keep a pH of at least 12 for 24 hours;
- Mesophilic anaerobic digestion at a temperature of 35°C with a mean retention period of 15 days;
- Extended aeration at ambient temperature as a batch, without admixture or withdrawal during the treatment period(\*);
- Simultaneous aerobic stabilisation at ambient temperature(\*);
- Storage in liquid form at ambient temperature as a batch, without admixture or withdrawal during the storage period(\*)

The sludge treatment shall at least achieve a 2 Log<sub>10</sub> reduction in Escherichia Coli.

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The relevant process parameters shall be monitored at least daily, and preferably continuously if practicable. Records shall be kept and made available upon request to the competent authority for inspection purposes.

European standards for the monitoring of these treatment processes shall be developed. If CEN standards are not available and until they are developed, ISO,

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\*The minimum time length of the treatment shall be laid down by the competent authority taking into consideration the prevailing climatic conditions in the area where the treatment plant is located.

international or national standards shall apply.

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#### Annex II: Industrial Sectors

The code in the entries refers to the European Waste Catalogue adopted with European Union Commission Decision of 3 May 2000 (as amended) replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of European Council Directive 75/442/EEC on waste and European Union Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste.

1. 02 02 04 sludges from on site effluent treatment from the preparation and processing of meat, fish and other foods of animal origin
  2. 02 03 05 sludges from on site effluent treatment from fruit, vegetables, cereals, edible oils, cocoa, coffee, [tea] and tobacco preparation, processing; conserve production; tobacco processing; [yeast industry]
  3. 02 04 03 sludges from on site effluent treatment from sugar processing
  4. 02 05 02 sludges from on site effluent treatment from the baking and confectionery industry
  5. 02 06 03 sludges from on site effluent treatment from the baking and confectionery industry
  6. 02 07 05 sludges from on site effluent treatment from the production of alcoholic and non-alcoholic beverages (excluding coffee, tea and cocoa)
  7. 03 03 06 fibre and paper sludge
  8. 04 01 06 sludges containing chromium from the leather and fur industry
  9. 04 01 07 sludges free of chromium from the leather and fur industry
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