

THE CABINET OF THE REPUBLIC OF LATVIA

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Regulation No. 531
(Protocol No. 61, § 11)

Regulations on the protection of waters and soil against pollution caused by nitrates from agricultural sources

Issued pursuant to
Article 11, Paragraph two, Clause 3,
Article 18, Paragraph two, Clause 3 and
Article 18, Paragraph three, Clause 1
of the Law on Pollution.

Chapter I General provisions

1. These Regulations determine:
 - 1.1. requirements for the protection of water and soil against pollution caused by nitrates from agricultural sources;
 - 1.2. vulnerable zones, subject to special requirements for water and soil protection against pollution caused by nitrates from agricultural sources (hereinafter - vulnerable zones), their boundaries, criteria for designation of such zones and their management practices;
 - 1.3. requirements for establishment of an action programme designed to reduce or prevent water pollution by nitrates in vulnerable zones (hereinafter – action programme), and deadlines for its implementation.
2. Pollution by nitrates means the discharge, directly or indirectly, of nitrogen compounds (any nitrogen containing chemical substances or chemical products, except for gaseous nitrogen) into the aquatic environment or soil, which causes or may cause hazards to human health, harms or may harm living resources, aquatic ecosystems, and biodiversity.
3. With the aim of promoting water and soil protection against pollution by nitrates in the course of agricultural activities carried out by landowners and land users, the Minister of Agriculture shall approve recommendations that include a code of good agricultural practice:
 - 3.1. certain periods when the land application of fertilizers is restricted;
 - 3.2. conditions for land application of fertilizers to steeply sloping ground;
 - 3.3. conditions for land spreading of fertilizers to frozen, water-saturated, flooded, or snow-covered ground;
 - 3.4. conditions for land application of fertilisers near water bodies and watercourses and to areas at risk of flooding;
 - 3.5. conditions concerning capacity and construction of storage vessels for livestock manure, and measures to prevent pollution by seepage into the groundwater and surface water from storage vessels;

- 3.6. procedures for the land application, and the rate of and requirements for spreading of chemical and organic fertilisers;
 - 3.7. the use of crop rotation systems;
 - 3.8. minimum land areas that shall be covered by crops and post-harvested residues during autumn and winter seasons;
 - 3.9. fertiliser plans for every field in a farm, to ensure the keeping of records on fertiliser use;
 - 3.10. conditions for prevention of water pollution from surface run-off that contains plant nutrients, and from the downward water movement beyond the reach of crop roots in irrigation systems.
4. The Ministry of Agriculture shall:
- 4.1. develop the action programme in cooperation with the Ministry of Environmental Protection and Regional Development;
 - 4.2. set up a training programme for those landowners and land users, which agricultural activities are in accordance with the code of good agricultural practice;
 - 4.3. inform the European Commission about the adopted code of good agricultural practice.

Chapter II Criteria for designation of vulnerable zones and boundaries of vulnerable zones

5. Vulnerable zones shall be designated provided one of the following criteria apply:
- 5.1. whether surface freshwaters, naturally occurring waters having a low concentration of salts, in particular those used or intended for the abstraction of drinking water, contain more than 50 mg/l nitrates;
 - 5.2. whether groundwater, all water below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil, contain more than 50 mg/l nitrates;
 - 5.3. whether natural freshwater lakes, other freshwater bodies, estuaries, coastal waters and marine waters are found to be eutrophic, i.e., enriched by nitrogen compounds and other plant nutrients, causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned;
 - 5.4. whether the information obtained by means of investigation and monitoring indicates that the respective vulnerable zone would correspond to the criteria referred to in Paragraph 5.1, 5.2 and 5.3 if the action programme is not implemented.
6. The boundaries of the vulnerable zones are administrative boundaries of Dobeles, Bauska, Jelgava and Rīga district, except administrative boundaries of Rīga city and Jūrmala city.
7. Where the Cabinet of Ministers has revised the boundaries of the vulnerable zones, referred to in Paragraph 6, the Ministry of Agriculture shall, within a year following the adoption of relevant legislation, submit to the Cabinet of Ministers a proposal for the necessary amendments to the action programme or a proposal for a new action programme.

8. The Latvian Environment Agency shall establish and maintain a register of the vulnerable zones. Information necessary to perform the functions determined by these Regulations shall be collected in the register.
9. The Ministry of Environmental Protection and Regional Development shall review the boundaries of the vulnerable zones at least every four years, taking into account the data provided by the monitoring programme and correspondence of these data with the criteria for designation of vulnerable zones referred to in Paragraph 5. If pollution by nitrates has exceeded the criteria for designation of vulnerable zones, referred to in Paragraph 5, the Ministry of Environmental Protection and Regional Development shall come up with a proposal for amendments to Paragraph 6.

Chapter III Management of vulnerable zones

10. Vulnerable zones shall be managed in accordance with the requirements for agricultural activities set out in the action programme.
11. When developing the action programme, the Ministry of Agriculture shall consider the following:
 - 11.1. available scientific and technical data concerning pollution caused by nitrates from agricultural sources;
 - 11.2. environmental conditions in the respective vulnerable zone.
12. The action programme shall consist of specific measures to be taken to reduce nitrates emission from agricultural sources. The action programme shall include:
 - 12.1. periods when the land application of certain types of fertilisers is prohibited, whether by spreading on the surface of the land, injection into the land, placing below the surface of the land or mixing with the surface layers of the land;
 - 12.2. the minimum period of manure storage;
 - 12.3. requirements for establishment of fertilizers plan for every field in a farm, to ensure the keeping records on fertilizers use;
 - 12.4. conditions concerning capacity of storage vessels for livestock manure, in particular:
 - 12.4.1. their capacity must exceed the required minimum and should be large enough to store manure throughout the whole period during which land application is prohibited;
 - 12.4.2. storage vessels for urine and slurries shall be covered or otherwise protected so that emissions of ammonia are prevented;
 - 12.5. limitations on the land application of fertilizers;
 - 12.6. water protection measures, to reduce leakage of plant nutrients from agricultural lands;
 - 12.7. protective belts for protection of surface waters, where restrictions are determined on land cultivation and on application and storage of fertilisers and plant protection products;
 - 12.8. measures for protection of groundwater, including restrictions on crop rotation systems and on application and storage of fertilisers and plant protection products.

13. Limitations on the land application of fertilisers shall be determined, taking into consideration environmental characteristics of the vulnerable zones, and:
 - 13.1. soil conditions and slope;
 - 13.2. climatic conditions, rainfall, type of land reclamation and total reclaimed area;
 - 13.3. land use practices and crop rotation systems;
 - 13.4. the foreseeable plant nutrients requirements of the crops;
 - 13.5. the nitrogen supply to the crops from the soil and from fertilization corresponding to:
 - 13.5.1. the amount of nitrogen present in the soil at the moment when the crop starts to use it to a significant degree (at the end of winter);
 - 13.5.2. the supply of nitrogen through the net mineralisation of the reserves of organic nitrogen in the soil;
 - 13.5.3. additions of nitrogen from livestock manure;
 - 13.5.4. additions of nitrogen from chemical and other fertilisers.
14. The action programme may also include a code of good agricultural practice.
15. The measures included in the action programme shall ensure that for each farm the amount of livestock manure applied to the agricultural land each year, including by the animals themselves, shall not exceed 170 kg N per hectare, which is equal to 1.7 livestock units per hectare.
16. Within the meaning of these Regulations, “livestock unit” means the number of animals that each year produces an amount of manure equivalent to 100 kilo N ex storage. The Minister of Agriculture shall approve guidelines for calculation of livestock units.
17. The amount of organic fertilisers produced per farm may exceed 170 kg N per hectare, where the farm enters into the agreement with other farmers concerning application of organic fertilisers to their agricultural lands and ensures that the amount of livestock manure applied to the agricultural land in each farm each year does not exceed 170 kg N per hectare.
18. Paragraph 12.2 and 12.4 shall not apply to natural and legal persons who have in their possession five and less livestock units.
19. The requirements of the action programme shall be implemented within four years of its adoption.
20. The Ministry of Agriculture and the Ministry of Environmental Protection and Regional Development shall evaluate effectiveness of the action programme at least every four years, taking into account the data provided by the monitoring programme and action programme and correspondence of these data with the criteria for designation of vulnerable zones, referred to in Paragraph 5. If pollution by nitrates has exceeded criteria for designation of vulnerable zones, referred to in Paragraph 5, the Ministry of Agriculture and Ministry of Environmental Protection and Regional Development shall develop amendments to the action programme.

21. If implementation of the action programme has not led to the desirable results, additional measures shall be included therein for the purpose of prevention or reduction of water and soil pollution by nitrates, taking into consideration cost efficiency of these measures.
22. The Ministry of Environmental Protection and Regional Development shall submit to the European Commission:
 - 22.1. every four years, a report on the designated vulnerable zones;
 - 22.2. within six months following adoption of such revision, a report on the revised boundaries of the vulnerable zones;
 - 22.3. every four years, a report describing influence of transboundary pollution on the vulnerable zones.
23. With the aim of controlling effectiveness of the action programme, the Minister of Environmental Protection and Regional Development shall approve a monitoring programme for the vulnerable zones (hereinafter – monitoring programme).
24. The monitoring programme shall be drawn up to obtain necessary information about ecological and hydro-chemical status of surface water and groundwater and to designate vulnerable zones and revise their boundaries.
25. The monitoring programme shall include the following information:
 - 25.1. impact on the environment caused by agricultural sources;
 - 25.2. assessment of long-term changes in the water quality, and evaluation of the eutrophic status of surface fresh waters, estuaries and coastal waters;
 - 25.3. impact and load of the pollution on the waters within the vulnerable zones.
26. The Latvian Environment Agency shall co-ordinate and arrange implementation of the monitoring programme and information collection.
27. The monitoring programme shall include basic monitoring, special monitoring and synoptic monitoring.
28. The purpose of the basic monitoring is to assess long-term changes in the water quality and to provide supplementary information concerning the impact of agricultural sources on pollution by nitrates and other plant nutrients.
29. The basic monitoring shall be carried out in the main river basins, coastal waters and groundwater aquifers to the extent that ensures overall water quality assessment.
30. The purposes of the special monitoring are:
 - 30.1. to determine impact and load of the diffuse and point-source pollution caused by agricultural activities;
 - 30.2. to determine water quality within the vulnerable zones at risk of failing to meet the requirements of these Regulations;
 - 30.3. to evaluate any changes in water quality within the vulnerable zones and to control effectiveness of the action programme.

31. The special monitoring shall be carried out in waters within the vulnerable zones and in the vulnerable zones themselves, if they are at risk of failing to meet the requirements of these Regulations.
32. The sites for special monitoring shall be chosen corresponding to the relative risk of diffuse and point source pollution caused by the agricultural activity concerned. The following criteria shall be taken into consideration to select sites for special monitoring:
 - 32.1. environmental and geographical specifications of the waters and zones concerned and the level of groundwater protection against pollution from surface;
 - 32.2. information on distribution of nitrogen compounds in the aquatic environment and soil;
 - 32.3. information on the impact of the action programme on environmental quality;
 - 32.4. monitoring network and its possible use for implementation of the action programme.
33. The purpose of synoptic monitoring is to evaluate concentrations of nitrates and other plant nutrients at the monitoring sites chosen within the vulnerable zones.
34. To identify nitrogen concentrations in fresh waters, the number and location of the monitoring sites shall be determined and regularly reviewed on the basis of the monitoring results, obtained in accordance with the criteria set out in Paragraph 5, and taking into consideration data about the state of the environment.
35. The number and location of the sites for synoptic monitoring shall be determined and regularly reviewed on the basis of the monitoring results and taking into consideration data about the state of the environment.
36. To ensure reliability and precision of monitoring results, the following activities shall be taken:
 - 36.1. for basic monitoring, water sampling shall be done at least twelve times per year;
 - 36.2. for special monitoring, water sampling shall be done once a month and more frequently during flood periods; sampling shall be automatic and based on flow-proportional samples;
 - 36.3. for synoptic monitoring, monitoring programme shall be implemented at least every four years;
 - 36.4. for groundwater, sampling shall be done once a month at the sites selected for special and basic monitoring.
37. If the nitrate concentration in all previous samples has been below 50 mg/l and no new factor likely to increase the nitrate content has appeared, the monitoring programme shall be repeated at least every eight years.
38. Nitrate concentration in waters shall be measured using molecular absorption spectrophotometry. Content of various forms of nitrogen and total nitrogen (in clean or contaminated water) shall be measured in accordance with the following national standards:
 - 38.1. LVS ISO 6777:1984,

- 38.2. LVS ISO 7150-1:1984,
 - 38.3. LVS ISO 7150-2:1986,
 - 38.4. LVS EN ISO 11732:1997,
 - 38.5. LVS ISO 7890-1:1986,
 - 38.6. LVS ISO 7890-2:1986,
 - 38.7. LVS ISO7890-3:1988,
 - 38.8. LVS EN ISO 10304-1:1995,
 - 38.9. LVS EN ISO 10304-2:1996,
 - 38.10. LVS EN ISO 13395:1996,
 - 38.11. LVS ISO 10048:1991,
 - 38.12. LVS EN ISO 11905-1:1998,
 - 38.13. LVS ISO/TR 11905-2:1997.
39. The Latvian Environment Agency shall develop and publish a report concerning protection of water and soil against pollution by nitrates from agricultural sources. The report shall include:
- 39.1. a map showing the designated vulnerable zones. The map shall indicate which of the criteria in Paragraph 5 were used for the purpose of designation and the date of designation;
 - 39.2. a summary of the monitoring results, including a statement of the considerations which led to the designation of the vulnerable zones or to any revision of their boundaries;
 - 39.3. a summary of the implementation of the action programme, indicating compliance with all the provisions of these Regulations;
 - 39.4. a summary of the implementation of the monitoring programmes within the vulnerable zones;
 - 39.5. the assumptions about the likely time scale within which the waters where nitrate concentration has exceeded the criteria, set out by Paragraph 5, are expected to meet relevant water quality parameters as the result of the action programme.
40. The Latvian Environment Agency shall submit the report, referred to in Paragraph 39, to the European Commission.
41. Where, for the purpose of the state control, state environmental inspectors need information about the content of nitrates and other plant nutrients in the samples taken, they shall use data obtained at certified laboratories.
42. Upon request from Rural Support Service, the land owners and land users are obliged to supply information on the type and numbers of livestock and total area of agricultural land in their possession, and also on the amounts of livestock manure and other parameters, necessary for the implementation of the action programme
43. Servants of the Latvian Environment Agency and state environmental inspectors have a right, after the relevant notification, to stay in the land owner's or land user's land propriety in order to control compliance with the measures required by the action programme and to control implementation of the monitoring requirements, including keeping records on the number of animals, on the use of fertilisers and on the area of agricultural land.

Chapter IV Transitional provision

44. The Latvian Environment Agency shall develop and publish the report, referred to in Paragraph 39, at least four years after the date of entry into force of these Regulations.

Prime Minister

A. Bērziņš

Minister of Environmental Protection
and Regional Development

V. Makarovs