

Protocol for Enhanced Monitoring of Pesticides

w.r.t. order passed by Hon'ble NGT on 26.06.2020

in the matter of O.A. No. 46/2020

Protocol for Enhanced Monitoring of Pesticides w.r.t. order passed by Hon'ble NGT on 26.06.2020 in the matter of Original Application No. 46/2020.

Hon'ble National Green Tribunal Principal Bench, New Delhi in the matter of Original Application No. 46/2020 sought report from Ministry of Environment, Forests and Climate Change and Central Pollution Control Board with reference to the prayer of the applicant (Sh. Shailesh Singh) to restrict use of chemical pesticides, affecting health of the citizens and contaminating soil. The prayer was based on a study of the King George Medical College, Lucknow, news articles published in BBC News on 05.11.2017, the Times of India on 19.11.2017 and other similar news articles. The applicant stated that around seven lakh hectares of agricultural land in Aligarh division had turned into barren land, as per a press report. There was also a report that many patients were referred to Clinical Ecotoxicology (Diagnostic and Research).

Hon'ble National Green Tribunal passed the order in the aforesaid matter on 26.06.2020. S No. 4. of the said order reads as follows:

"In view of the above, while certain steps are being taken to abate harmful impact of pesticides on human health and soil, monitoring needs to be enhanced by laying down a further action plan jointly by the CPCB in coordination with the State PCBs/PCCs. An appropriate protocol may be evolved for the purpose and circulated it to the concerned agencies within four months."

In view of which, Central Pollution Control Board vide letter dated July 07, 2020 requested twelve State Pollution Control Boards (having pesticide industries) and Directorate of Plant Protection Quarantine & Storage to nominate a representative for the constitution of the committee for the purpose of making the aforesaid protocol.

Accordingly the following committee consisting of representatives of Central Pollution Control Board, State Pollution Control Boards and Directorate of Plant Protection Quarantine & Storage was constituted to make the aforesaid protocol:

- 1) Sh. Dinabandhu Gouda, Scientist E & DH, IPC-I, Central Pollution Control Board
- 2) Sh. Subhash Chand, Deputy Director (Chemistry), Directorate of Plant Protection Quarantine & Storage
- 3) Sh. N. M. Tabhani, Deputy Chief Environmental Engineer, Gujarat Pollution Control Board
- 4) Sh. M. S. Satyanarayana Rao, Joint Chief Environmental Scientist, Telangana State Pollution Control Board
- 5) Sh. D. K. Joshi, Scientific Officer, Uttarakhand Pollution Control Board
- 6) Smt. Prasanti Swain, Senior Environmental Engineer, Odisha State Pollution Control Board
- 7) Sh. Ram Krishna Saha, Senior Scientist, West Bengal Pollution Control Board
- 8) Sh. P. K. Mirashe, Assistant Secretary (Technical), Maharashtra Pollution Control Board
- 9) Sh. J. P. Singh, Senior Environmental Engineer, Haryana State Pollution Control Board
- 10) Group Incharge (PDF), Rajasthan State Pollution Control Board
- 11) Sh. Ashbir Singh, Scientist D, Central Pollution Control Board

The above stated committee members through meetings and deliberations agreed upon the Protocol for Enhanced Monitoring of Pesticides, which is described below.

The Protocol for Enhanced Monitoring of Pesticides is as follows:

1. The State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) jointly with the nominated official(s) of Directorate of Plant Protection Quarantine & Storage (DPPQS) shall conduct regular inspection of every Technical grade pesticide manufacturing / pesticide formulation unit (hereinafter referred as pesticide unit) under their jurisdiction. The inspection of Technical grade pesticide manufacturing units shall be conducted at least on half yearly basis and the inspection of Pesticide Formulation units shall be conducted at least on annual basis.
2. The inspections shall be conducted as surprise inspections. Any prior information pertaining to inspection shall not be provided to the industrial units that are to be inspected.
3. On the basis of violations / shortcomings as observed during the joint inspection, the action on the defaulter pesticide unit may be taken independently by SPCBs / PCCs and / or DPPQS, as applicable, under the provisions of the extant laws.
4. The inspections shall involve monitoring of treated / discharged effluent w.r.t prescribed parameters including pesticide parameters. The inspections have to be conducted irrespective of mode of discharge of treated effluent by the pesticide unit.
5. Sampling of effluent shall be done from the inlet and outlet of the effluent treatment systems viz. Effluent Treatment Plant, Multiple Effect Evaporator, Agitated Thin Film Dryer, Reverse Osmosis etc. (wherever required) along with the point of final discharge of the treated effluent to assess effectiveness of effluent treatment.
6. It shall essentially be verified during inspection whether the pesticide unit (under inspection) is discharging treated /untreated effluent or disposing hazardous wastes in unauthorized manner. In case any unauthorized discharge of effluent/unauthorized disposal of Hazardous Waste is observed, action on the defaulter pesticide unit under extant laws shall immediately be taken.
7. In case, the pesticide unit (under inspection) claims Zero Liquid Discharge (ZLD) compliance, an assessment of feasibility of ZLD compliance shall be made thorough effluent monitoring and mass balance of effluent and it shall be ascertained that the unit does not practise effluent bypassing or discharge of effluent by any other means. ZLD may be defined as 'The entire quantity of effluent is treated to recover water and recovered water is reused in process and / or utilities, and only solids are discharged (or reused, if possible) in environmentally sound manner. Reuse of treated effluent for horticulture or agriculture purposes will be considered as discharge on land and not as means to achieve ZLD. Similarly, effluent from individual industries being sent to CETP for treatment will not be considered as ZLD.'
8. Pesticides are toxic by nature. It shall essentially be verified during inspection about any possibility of environmental pollution that may be caused by the pesticide

industry (under inspection) owing to mixing / contact of rain water / storm water with any process effluent or leachate from the process / storage area. Any possibility of environmental pollution through fugitive emissions of pesticides shall also be verified.

9. In case, the pesticide unit discharges its treated effluent to the inland surface water, river, stream or drain, the monitoring of the water body shall be conducted along with the monitoring of treated effluent. In case of discharge to rivers, streams, drains etc. upstream and downstream monitoring shall be conducted along with the monitoring of treated effluent. The monitoring of water body shall be done for prescribed parameters including pesticides.
10. Monitoring of soil samples collected from the banks of the water body (to which the treated effluent is discharged) shall also be conducted w.r.t. pesticide parameters. For the purpose of baseline concentration for reference / comparison, soil samples from another location(s) as per discretion of the monitoring officials shall also be taken so that it may be ascertained whether the pesticide unit (under inspection) is causing any soil pollution.
11. Half yearly monitoring of water bodies, if any within the 500 m radius of pesticide units shall be conducted to assess any pesticide contamination. If it is observed that the monitored water body (within the 500 m radius of pesticide units) is polluted with pesticide(s), then further monitoring of water bodies situated beyond 500 m shall be done to assess the extent of pollution. Monitoring of soil samples collected from the banks of the water body shall also be conducted w.r.t. pesticide parameters. . For the purpose of baseline concentration for reference / comparison, fresh water samples and soil samples from other locations as per discretion of the monitoring officials may be taken.
12. In case, the pesticide unit uses its treated effluent in irrigation / gardening; groundwater monitoring w.r.t. pesticide parameters shall be conducted by SPCBs / PCCs along with the monitoring of treated effluent. Monitoring of soil samples from the irrigated region shall also be conducted w.r.t. pesticide parameters. For the purpose of baseline concentration for reference / comparison, groundwater samples and soil samples from another location(s) as per discretion of the monitoring officials shall also be taken so that it may be ascertained whether the pesticide unit (under inspection) is causing any soil/ groundwater pollution.
13. In every case, irrespective of mode of discharge of the treated effluent, the inspections shall also involve ground water monitoring w.r.t. pesticide parameters around 500m of the pesticide unit. If it is observed that the groundwater (within the 500 m radius of pesticide units) is polluted with pesticides, then further monitoring of groundwater beyond 500 m shall be done to assess the extent of pollution. For the purpose of baseline concentration for reference / comparison, ground water samples from another location(s) as per discretion of the monitoring officials shall also be collected so that it may be ascertained whether the pesticide unit (under inspection) is responsible for ground water pollution (if any).

- 14.** In every case, irrespective of mode of discharge of the treated effluent, the inspections shall also involve soil monitoring w.r.t. pesticide parameters around 500m of the pesticide unit. If it is observed that the soil (within the 500 m radius of pesticide units) is polluted with pesticides, then further monitoring of soil beyond 500 m shall be done to assess the extent of pollution. For the purpose of baseline concentration for reference/ comparison, soil samples from another location(s) as per discretion of the monitoring officials shall also be taken so that it may be ascertained whether the pesticide unit (under inspection) is causing any soil pollution.
- 15.** In case the pesticide industry is situated within a notified industrial cluster, the monitoring officials may at their discretion decide the distance from where soil and ground water samples have to be taken for the purpose of baseline concentration for reference / comparison.
- 16.** SPCBs and PCCs shall conduct effluent monitoring of Common Effluent Treatment Plants and Sewage Treatment Plants under their jurisdiction w.r.t. pesticide parameters. The treated effluent from Common Effluent Treatment Plants and Sewage Treatment Plants shall not contain any pesticide. The monitoring has to be done regularly at least on half yearly basis.
- 17.** SPCBs and PCCs shall conduct regular inspections of Hazardous Waste Disposal / Treatment facilities as well as Municipal Waste dumping sites within their jurisdiction. The inspections have to be done at least on half yearly basis. The monitoring shall involve ground water as well as soil sampling around 500m of Hazardous waste disposal facility and Municipal Waste dumping sites w.r.t. pesticide parameters. If it is observed that the groundwater and / or soil (within the 500 m radius of pesticide units) is polluted with pesticide(s), then further monitoring of groundwater and / or soil beyond 500 m shall be done to assess the extent of pollution. For the purpose of baseline concentration for reference and comparison, ground water samples and soil samples from another location(s) as per discretion of the monitoring officials shall be taken.
- 18.** In case, SPCBs / PCCs observe that any inspected pesticide unit, Common Effluent Treatment Plant, Sewage Treatment Plant, Municipal Waste dumping site or Hazardous Waste Disposal/Treatment facility has caused grave injury to the environment because of discharge of effluent / leachate contaminated with pesticides or improper disposal of hazardous / other wastes containing pesticides, action on the defaulter under extant laws shall immediately be taken.
- 19.** The decision whether the pesticide pollution of environment has been caused by the agricultural or urban run off or by any pesticide unit, Common Effluent Treatment Plant, Sewage Treatment Plant, Municipal Waste dumping site or Hazardous Waste Disposal/Treatment shall be taken based upon the observed facts, evidences and scientific rationale.
- 20.** SPCBs / PCCs may direct the pesticide industries in their jurisdiction to recycle and reuse the treated effluent to the maximum possible extent.

- 21.** SPCBs / PCCs and DPPQS shall ensure that no pesticide unit shall manufacture or formulate the pesticides banned by Government of India or that are listed as Persistent Organic Pollutants (POPs) by the Stockholm Convention on POPs.
- 22.** SPCBs / PCCs jointly with DPPQS shall carry out monitoring of water bodies during pre and post monsoon seasons so as to assess the impact of the pesticides run off into the water bodies because of agricultural / urban activities.
- 23.** For conducting the above stated inspections / monitoring; SPCBs, PCCs and DPPQS at their discretion may engage any Government organization or Government approved organization having adequate expertise in inspection of pesticide industries / monitoring of pesticides in environment.
- 24.** The analysis of effluent / ground water /soil samples for the parameters other than pesticides shall be carried out in the laboratories of SPCBs / PCCs or in the laboratories recognised by Ministry of Environment, Forests and Climate Change or accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL).
The analysis of pesticide parameters may be done in the laboratories of SPCBs / PCCs or in the laboratories recognised by Ministry of Environment, Forests and Climate Change or accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) or laboratories recognised by the Central Insecticides Board & Registration Committee. In case the sampling pertains to the industrial inspection, the sample analysis fee shall be paid by the concerned pesticide industry as per polluter pays principle.
- 25.** The methodology for sampling and analysis of pesticides / pesticide residues shall be followed as per methodology / guidelines of Bureau of Indian Standards / Central Insecticides Board and Registration Committee/ United States Environmental Protection Agency.
- 26.** SPCBs / PCCs and DPPQS shall promptly investigate any public complaint regarding pollution caused by any pesticide unit and shall take prompt action.
- 27.** All pesticides are registered after rigorous test of efficacy, stability and safety with maximum mortality to harmful insect and minimum damage to beneficial insects. Doses and time of application along with re-entry into the field are decided on the basis of data generated as per approved protocol under Good Agricultural Practice (GAP), Good Laboratory Practice (GLP) and NABL laboratories and verified by the Government institutes also. In view of which, DPPQS may ensure necessary action at its end in pertinence of environment protection and human health.
- 28.** DPPQS may arrange to impart regular training programs / workshops for farmers and dealers regarding the harmful consequences of excessive and injudicious use of pesticides.

29. DPPQS being an expert body which carries out monitoring of pesticides residues at national level as per its mandate; may arrange to conduct capacity building trainings / workshops for SPCBs / PCCs regarding pertinent monitoring & analysis.