

EU Green Week
PARTNER EVENT

Reuse of wastewater in Greece

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#WaterWiseEU



Wastewater reuse – National legislation

Water scarcity is a pressing issue in the Mediterranean region, as well as in other countries around the world.

This presentation focuses on the evolution of the greek relevant legislative framework over the years, starting from 1965, when the terms and conditions for the reuse of wastewater for agricultural irrigation in Greece were first put in place.

Emphasis will be given **on the balance** between

extending the range of permitted uses and

setting quality requirements

with the aim to **ensure the protection of Public Health.**



Objectives of the national legislation

A clear legal framework for the reuse of treated wastewater

to promote use of wastewater - save water resources taking into account the climate change

to establish appropriate terms and conditions for reuse that protect public health and the environment increase security, confidence and acceptance



Terms and conditions for the reuse of wastewater for agricultural irrigation in Greece (1965-2008)

1. The *distance of the boundaries* of the wastewater **disposal area** from inhabited or frequented **areas** as well as other areas (water abstraction, orchards, etc.) will be determined according to **the treatment degree** of the disposed sewage, the **type of their surface disposal** and the local conditions, in a manner so as not to cause risks of contamination or nuisance.
2. More specifically, in order to protect drinking water from sewage, the boundaries of the disposal area will be at least **30m apart from wells or springs** and **15 m from aqueduct pipes**.
3. Effective measures will be taken to **exclude unauthorized persons and animals from entering the wastewater disposal area**.
4. In case sewage is used to **irrigate plantations**, the following conditions will be paid in addition to the above:



Terms and conditions for the reuse of wastewater for agricultural irrigation in Greece (1965-2008)

- 1) The available sewage or industrial wastewater will have undergone a treatment at least equivalent to **simple sedimentation of an average duration of 2 hours**.
- 2) **Vegetables cooked without boiling shall not be included** in the solutions of irrigated cultivation.
- 3) All irrigation crops shall be **switched off at least two weeks before harvesting** or grazing of dairy animals.
- 4) Sewage or industrial wastewater **from tanneries** or other facilities that may be contaminated **with anthracic spores shall not be used**



Art. 4 – Reuse for irrigation (Leg. 2008)

Limited irrigation

Crops whose products are:

- a) consumed after processing (e.g. heat),
- b) not intended for human consumption,
- c) not in direct contact with the ground when harvested

Sprinkler irrigation not allowed

Public access not allowed

E. Coli \leq 200 EC/100ml

BOD $<$ 25mg/l, SS $<$ 35mg/l

Monitoring frequency

Secondary + disinfection

Unlimited irrigation

All kinds of crops

Various methods are allowed including sprinklers

Unrestricted access

E. Coli \leq 5 EC/100ml for 80% of samples

BOD \leq 10 mg/l for 80% of samples

SS \leq 10 mg/l for 80% of samples

Turbidity \leq 2 ntu

Monitoring frequency

Secondary + Tertiary + disinfection



Art. 4 – Reuse for irrigation (Leg. 2008)

For both types of irrigation, they should also comply with

- **the max allowed concentrations of metals (etc.) ,**
- **the desirable agronomic characteristics of treated wastewater and**
- **the max allowed concentrations of priority substances in the treated wastewaters**

According to the data of our National Database, about 40 treatment plants declare that they reuse the treated wastewater.

Reuse of treated wastewaters is carried out by

- smaller urban wastewater treatment facilities (agglomerations < 2.000 e.p.) that are not covered by the EU Directive 91/271 and are not obliged to submit their operational data in the National Database
- other facilities activities, such as hotels/touristic complexes,
- industrial activities such as food and beverage industries etc.



Art. 5 – Recharge of aquifers (Addressing depletion and/or salinization of aquifers)

	Urban & some industrial wastewaters	Industrial wastewaters not covered by 91/271/EC	
Artificial groundwater recharge (borehole injection)	Not allowed	Not allowed	Protected for human consumption (drinking water)
	Specific hydrogeological study Limit values of advanced treatment	Not allowed	Not protected for human consumption
Artificial groundwater recharge (soil filtration)	Specific hydrogeological study Limit values of advanced treatment	Not allowed	Protected for human consumption (drinking water)
	Specific hydrogeological study required limited irrigation		Not protected for human consumption



Thank you for your attention!

