Sustainable Management of Pistachio Wastes

Proposals from LIFE AgroStrat project

http://www.agrostrat.gr

“Sustainable Strategies for the improvement of seriously degraded agricultural areas: The example of Pistachia vera L”.

LIFE11 ENV/GR/951
Waste Management

After dehulling wastes should be collected in tanks of appropriate dimensions.

Wastes are left to precipitate and separate in solid and liquid phases. Simple constructions may be used for the separation.

Wastewater

Mixing with rainwater at a minimum ratio of 1:5 and use for irrigation. Prior use for irrigation, wastewater must be analyzed for the chemical and biological parameters defined by the national legislative framework.

Or

Discharge of wastewater in well protected ponds. Wastewater is left to evaporate and the remaining sludge is used as feedstock material for composting together with solid dehulling waste.

Ponds should be shallow to facilitate evaporation (max depth 1.5-2.0 m).

IMPORTANT INFORMATION: Before application of wastes and organic materials on soil, the authorized competent authority must be informed and provide the appropriate permission.
Solid Waste
Composting and use in Agriculture

Composting of solid wastes is an easy, economical and environmentally friendly treatment process that ensures also economic benefits.

Mixture Preparation

- 10 parts of solid pistachio waste (after dehulling)
- 5 parts of well digested manure
- 1 part straw
- 1 part zeolite (i.e. clinoptilolite, can be found in market)

Procedure

- Apply the materials in layers, one above the other, alternately and prepare a pile or a windrow
- Good mixing and wetting – Maximum high of pile/windrow 1.5m
- Cover the mixture with protective composting textile
- Aerate the mixture often by turning (for 2-3 months)
- Keep mixture temperature below 65°C and moisture between 45 and 60%. Wett the mixture periodically
- Frequent temperature and moisture monitoring
- During maturity phase (the last 2 months) the compost must be kept at a protected area
- Chemical analysis of the ready compost-definition of application rate
Compost application on soil increases organic matter, provides soil with essential nutrients, decreases the risk for soil degradation and protects soils against desertification.

The composts produced in Aegina island were of very good quality and satisfied the European Standards for application on soil.

**Composts’ composition:**

- Organic matter 28 – 34%
- Nitrogen 3 – 4%
- Potassium 1.0 – 1.6% (as K₂O)
- Phosphorus 0.5 – 0.8% (as P₂O₅)