MARYLAND

Department of the Environment

Options for the Management of Food Processing Wastewater

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Wastewater Permits Program

What is Wastewater?

- Wastewater is defined as any:
  - Liquid waste substance derived from industrial, commercial, municipal, residential, *agricultural*, recreational, or other operations or establishments; and
  - Other liquid waste substance containing liquid, gaseous, or solid matter and having characteristics which ***will pollute*** any waters of the State

» From COMAR 26.08.01.01.B99

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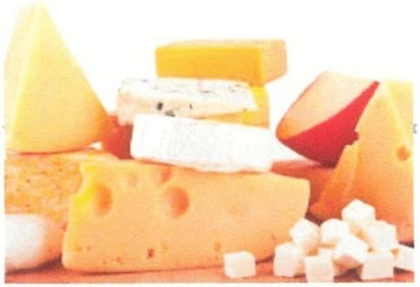

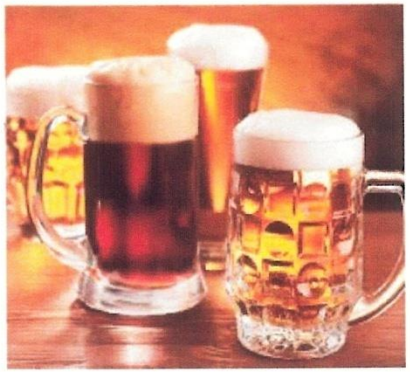

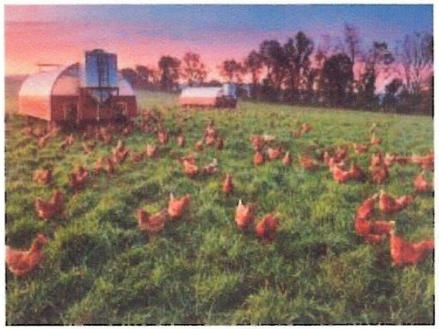



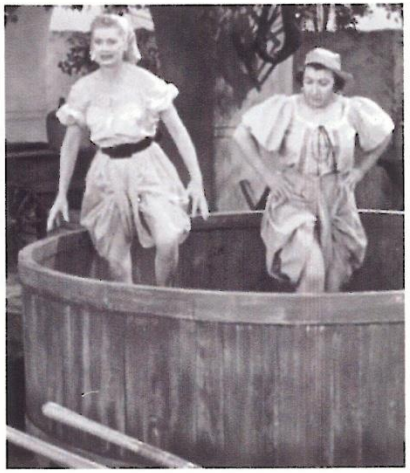

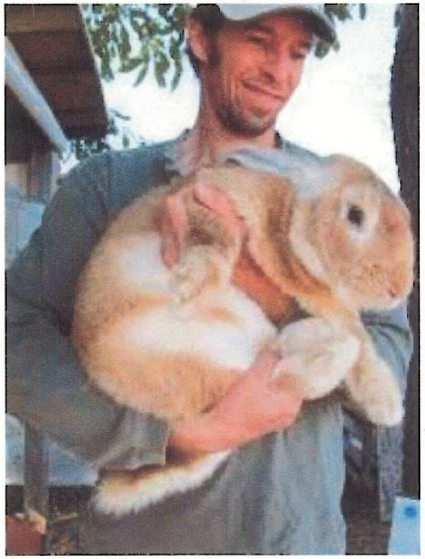

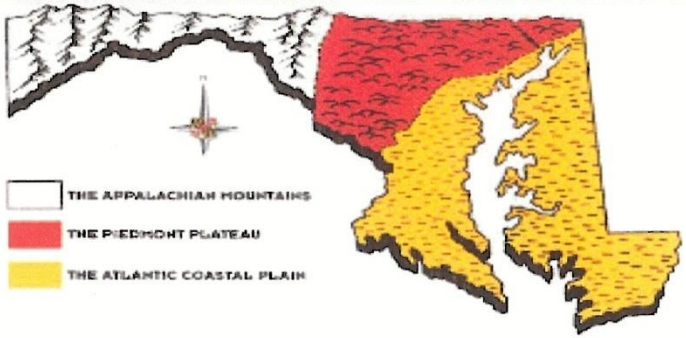

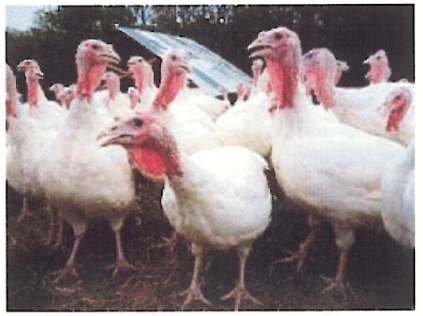

What is Food Processing Wastewater?

- Beer and wine making process wastewater
- Milk products processing wastewater such as ice cream, cheese, or yogurt
- Produce processing
- *On-Farm*, ‘small scale’ poultry and rabbit processing wastewater

Food Processing Wastewater Management Options

- Option 1: Composting *All* Wastewater & Offal
- Option *2:* Land Application of Wastewater
- Option 3: Contain and transport wastewater offsite for treatment
- Option 4: Subsurface disposal
- Option 5: Surface water discharge

Option 1:

C O M P O S TING

What is Composting?

- Composting is a process that requires oxygen – typically by turning of piles, an appropriate amount of moisture, and the right mix of nitrogen and carbon rich source materials.
- Experts describe Composting as part art and part science.
- Wastewater *and* offal* can be composted or just offal.
- Composting *All* wastes and wastewater generated in poultry and rabbit slaughtering can be an environmentally sound management option.

Please note: *Composting not done properly can attract unwanted animals, create ground and surface water pollution, and become foul smelling and thereby become a general nuisance to you and possibly your neighbors.*

* Offal is Blood, Feathers, & Organs

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What Is Required to Compost Onsite?

- You must become a qualitied/certified compost operator

- ***No authorization from MDE is needed for composting slaughter wastes and wastewater, and then beneficially using the compost if:***

  - the source materials composted are generated onsite, *and*

  - the finished compost is used onsite.

Note: the import of brown (carbon rich) materials to blend with the nitrogen rich slaughter materials is permissible in the composting operation.

Composting Resources

- MDA State Chemist Office, Ken McManus, Kenneth.McManus@maryland.gov
- Composting: Dr. Gary Felton, University of MD, Environmental Science and Technology Department, gfelton@umd.edu
- US Composting Council www.compostingcouncil.org

Option 2:

Land Application of Wastewater



What is Land Application?

Land application is the beneficial reuse of food processing wastewaters via spray irrigation to the land surface. These benefits include:

- Providing nutrients to support or increase the growth of vegetation
- Recharging the groundwater

Land Application Authorization

Authorization by:

MDE: Groundwater Discharge Permit

or

MDA: State Chemist Office as a Soil Conditioner (amendment)

Regulatory Overlap

Land Application Requirements

MDE: A *discharge permit* is required for land application of food processing wastewater.

&

MDA: State Chemist Office requires *registration* of nutrient containing wastewater as a '*Soil Conditioner*' (*amendmen*t) if it is going to be land applied.

Regulatory Overlap = Opportunity

New Regulations Utilize this Overlap:

MDE working with MDA issued new regulations*:

Effective December 22, 2014.

INTENT:

- A user-friendly approval process for land applying wastewater generated from small scale, typically on-farm, food processing operations**….. And**
- Environmentally protective of waters of the State (ground & surface).

*COMAR 26.08.02.09.A(5)

How Does This Exemption Work?

IF MDA's State Chemist Office determines that food processing wastewater 'meets the requirements for registration as a Soil Conditioner' providing nutrients to support or increase the growth of vegetation

AND MDE approves an Exemption Application

THEN MDE won't require a discharge permit for the land application of the food processing wastewater

HOWEVER *Responsible stewardship of the Food Processing Wastewater is REQUIRED via MDAs nutrient management and 'Soil Conditioner' regulations.*

Option 2: Land Application of Wastewater

Compliance with the following is essential for continued exemption from MDE Discharge Permit Requirements:

- Wastewater Analysis
- Nutrient Management
- Record Keeping
- Land Application Best Management Requirements
- Storage Requirements: Land application prohibited in ‘Winter’
- Renewal application for MDE Exemption every 5 years

Wastewater Analysis

- Wastewater sample is sent to a laboratory for analysis. (*ask for essential wastewater test parameters before sending the wastewater for analysis)*
- Results are evaluated by State Chemist for product safety and agronomic value.
- Soil conditioner application may require other site-specific information needed for reasonable assurance of safety.

Nutrient Management

- Compliance with a Nutrient Management Plan (NMP) is required
- Essential to minimize the potential of nutrient pollution to Ground and Surface Waters
- Nutrient Management Plans (NMP) must include all nutrient sources, i.e. manure, chemical fertilizers, biosolids, food processing wastewater, etc
- MDA randomly checks NMPs for compliance

Land Application Best Management Requirements

- Land Application Setback Requirements
- There shall be ground cover or vegetation, no bare unvegetated ground
- Wastewater is not land applied during periods of precipitation, saturated soil, snow covered, or frozen ground
- No surface runoff or ponding of wastewater

Record Keeping

A Logbook is required to maintain records that include:

- Quantity of wastewater generated
- Land application dates, fields, and rates/quantity
- Weather of application dates
- Equipment maintenance

Storage is Necessary

WHY: When land application is not possible due to precipitation, saturated soil, snow covered, or frozen ground,

and

To comply with MDA regulatory prohibition on winter application of nutrient containing wastewater

HOW: Holding Tank

To prevent ground and surface water pollution

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Option 2: Land Application of Wastewater



***Winter is* defined as:**

December 16 thru February 28

Option 2: Land Application of Wastewater

An Exemption from MDE's Discharge Permit

is *NOT* Automatic

You Must Apply And Be Approved By MDE

Option 2: Land Application of Wastewater

IMPORTANT

MDE retains authority to *deny an exemption application* and require a discharge permit for the land application of wastewater - even if it meets the requirements of a Soil Conditioner.

If an exemption is granted, MDE has authority to:

- Inspect a discharge permit exempted operation

- Revoke an approved exemption

Application for permit exemption required every 5 years

Option 2: Land Application of Wastewater

IF EXEMPTION IS DENIED:

- An *Individual* Groundwater Discharge Permit will be *required for land application*
- Permits typically include: 1) NMP Compliance, 2) Best Management Requirements (such as setbacks/ buffers), 3) wastewater storage, and 4) reporting requirements.
- Application and Annual fees apply
- Public participation process required

Option 3:

Contain and Transport Wastewater for Offsite Transport and Treatment

Holding Tanks

Holding Tank Requirements

- 7 days of storage
- Design approval required from MDE
- High-water alarm installation
- Water-tightness test before use
- Documentation to show wastewater will be removed for appropriate treatment and disposal

Option 4:

Subsurface Disposal

Subsurface Disposal

Food processing wastewater that is discharged into the subsurface, typically via a drainfield.

- A County issued permit **and/or** State Discharge Permit may be required
- Contact your County Environmental Health Department **and** MDEs Wastewater Permits Program, Groundwater Permits Division at 410.537.3778

Option 5:

Surface Water Discharge

MDE Issued Permit Required

Recommendations

Small scale food processing = smaller amounts of wastewater

- Option 1 – Composting
- Option 2 – Land Application of Wastewater
- Option 3 – Contain and transport wastewater offsite for treatment

Large scale food processing = larger amounts of wastewater

- Option 4 – Subsurface Disposal
- Option 5 – Surface Water Discharge

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https://mde.maryland.gov/programs/Water/wwp/Pages/GWDP.aspx