Field Olfactometry
Monitoring of Manure Odors Following Land Application

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Air Emissions from Land Application of Manure

Nuisance Odor Assessment

Intensity

Detection Threshold (DT)…..
Lowest concentration of odor detected by human assessors.

DT is sometimes expressed as “Odor Units”
For field olfactometry…..
“Dilutions -to- Threshold (D/T)”

“Objective”…..
Treating or dealing with facts without distortion by personal feelings or prejudices.

Archived presentation available at:
http://www.extension.org/pages/Air_Emissions_After_Manure_Land_Application_Including_Subsurface_Application_of_Poultry_Litter_and_Solid_Manure
Odor Threshold Concentration

Lab - Dynamic Olfactometer

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Odor Threshold Concentration

Field Olfactometer

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Dilution of Odor in Ambient Air

Field Olfactometry

Quantifying Odor Emissions from Alternative Dairy Manure Application Methods

Primary Objective:
To determine if there is a statistical difference in odor emission among several different manure application methods

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Use of Manure Rings for Assessment of Odors from Alternative Application Methods

- 200 foot diameter manure ring
- 10 foot wide swath of manure (6000 gal/acre)
- Advantages:
  1. Eliminates wind direction as a primary source of variance
  2. Maintains constant odor assessor distance from odor source (100 feet)

Field Olfactometry

Field Olfactometry Observations

2007 Field Olfactometry Observations

same letter indicates no statistical difference (p < 0.05) for overall means

Application Method

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Additional Reading & Contact Information


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