



## DISPOSAL AND DECONTAMINATION OF HERBICIDE WASTE

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# Talk Contents



## **Introduction**

## **Herbicide waste disposal**

- Empty containers
- Excess mix
- Excess products
- Tank Rinse

## **Hazardous waste disposal**

## **Decontamination**

- Herbicide Spills

## **Summary**

# Talk Contents



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### Summary

**“February is National  
Pesticide Safety  
Education Month”**

**NATIONAL  
PESTICIDE  
SAFETY  
EDUCATION  
MONTH**



“Example of poor container management”



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“Example of poor container management”

Image courtesy: WSDA



“Example of poor container management”

Image courtesy: WSDA

# Improper disposal of pesticides can lead to



- Contamination of soil
- Contamination of groundwater & surface water
- Causing serious liability for the pesticide user



## Improper disposal of pesticides can lead to



- Contamination of soil
- Contamination of groundwater & surface water
- **Causing serious liability for the pesticide user**

# “Improper disposal can result in fines for the pesticide applicator”

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- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- Florida Pesticide Law (Ch. 487 F.S.)

# Dispose waste



**L**egally

**R**esponsibly

**E**conomically

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- **Tank Rinse**

### Hazardous waste disposal

### Decontamination

- **Herbicide Spills**

### Summary



- **Herbicide waste**  
**Not classified as hazardous**

- **Hazardous waste**



- **Herbicide waste**  
**Not classified as hazardous**

- **Hazardous waste**

# Herbicide waste



- Disposal is regulated under state law
- Must be disposed of according to LABEL instructions.
- Must be disposed of in a careful manner

# Herbicide waste

“Types of herbicide wastes”

- Empty containers
- Excess herbicide mix
- Excess products
- Tank Rinse



- Empty containers

“Types of  
herbicide  
wastes”



Empty containers awaiting  
disposal

## ■ Empty drums, bottles, or cans



### Triple rinsing

- Refill the empty container for  $\frac{1}{4}$  full with water and rinse
- Drain the rinse to spray tank
- Repeat rinsing and draining two more times

## ■ Empty drums bottles, or cans



### Pressure rinsing

- Done using special pressure rinsing device inserted into the container
- Put the rinse back to spray tank

# Pressure rinsing



**Pressure-rinsing an empty container**

**Several styles of pressure rinse nozzles**



- **Empty drums bottles, or cans**

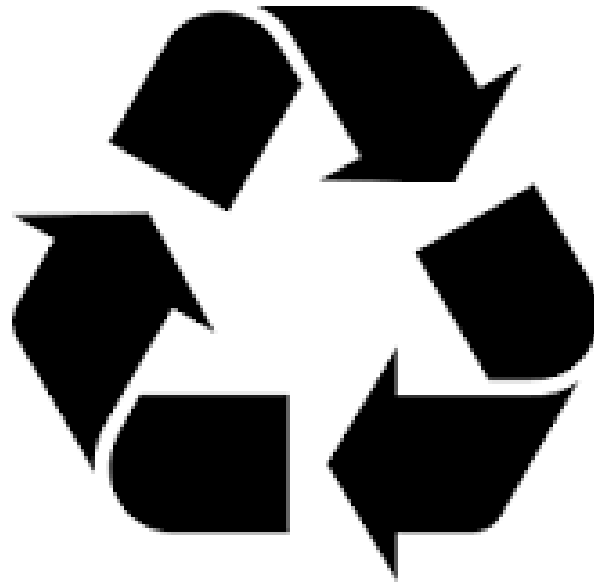
- **Triple rinsing**

- **Pressure rinsing**

- ✓ Properly rinsed containers may then be buried in a sanitary landfill
- ✓ If the operator and local regulations allow.



# Recycling is the best management option for containers



**Contact your county extension office for information on pesticide container recycling opportunities in your area**

Ref: [edis.ifas.ufl.edu/pi010](https://edis.ifas.ufl.edu/pi010)

- **Empty bags** should be shaken clean.



- They may be buried in a **sanitary landfill** if the operator and local regulation allows

# Herbicide waste

“Types of  
herbicide  
wastes”

- Empty containers
- **Excess herbicide mix**
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- Excess herbicide mixture

“Types of herbicide wastes”



Excess herbicide mixture  
draining from the tank

# Excess herbicide mixture



- **Avoid** the problem of excess mixture
  - Measure and calibrate carefully
  - Fill your spray tank with only the amount required to do the job

# Excess herbicide mixture



- **Avoid** the problem of excess mixture
  - Measure and calibrate carefully
  - Fill your spray tank with only the amount required to do the job

The way to dispose of excess mixture is to use it on a labeled site!

# Herbicide waste

“Types of  
herbicide  
wastes”

- Empty containers
- Excess herbicide mix
- **Excess products**
- Tank Rinse

- Excess product

“Types of herbicide wastes”



Excess product disposal

# Excess product

Unused pesticide that you no longer need or that is no longer legal



- Best way to dispose – **Give it to somebody!**
- Check with the supplier if they will take it back

# Excess product

Unused pesticide that you no longer need or that is no longer legal



- Hazardous waste collection programs by Local solid waste management agency
- Licensed hazardous waste contractor

## Contact:

Florida Department of Environmental Protection (FDEP) – for a list of contractors

# Herbicide waste

“Types of  
herbicide  
wastes”

- Empty containers
- Excess herbicide mix
- Excess products
- **Tank Rinse**



- Tank rinse water

“Types of herbicide wastes”



Rinse water from application equipment and containers

# Rinse water



**DO NOT**

Discharge rinse water to the ground or septic systems

Increase the chance of ground water contamination

# Rinse water



**DO NOT**

Discharge rinse water to the  
ditches or streams

This is **Illegal**

- damage to crops or trees
- serious hazard to fish and other wildlife

# Rinse water



## DO's

Re-apply rinse water to a labeled site

This is allowed under federal law

- NOT result in an applied concentration above the label recommendation

# Rinse water



## DO's

**Re-use rinse water** to dilute the next batch of formulation

As long as the site to which the rinse water is applied is a labeled site.

Up to five percent of the water for dilution may be rinse water.

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- **Hazardous waste**



■ Herbicide waste  
Not classified as  
hazardous

■ **Hazardous waste**

Example herbicides regulated as  
hazardous waste:

- 2,4-D
- Amitrole – Weedazol, Others



# ■ Hazardous waste

- **Ignitable:** wastes that are flammable.
- **Corrosive:** wastes that can burn the skin or corrode metal.
- **Reactive:** wastes that are unstable and may explode or react violently with water.
- **Toxic:** wastes that contain certain heavy metals above specific concentrations. (Chromium, lead, or cadmium, or toxic organic chemicals)

# Hazardous waste – How to identify?



- Ask for the Safety Data Sheet (SDS) before ordering new pesticides.
- Talk to product suppliers and manufacturers
- Read product labels. This should be done before purchasing any pesticide product.

# ■ Hazardous waste

- Ignitable:



- Corrosive:



- Reactive:



- Toxic:



# ■ Hazardous waste



# Hazardous waste disposal



- Regulated by the Federal Resource Conservation and Recovery Act (RCRA).
- Must be disposed of properly, usually by a **licensed hazardous waste contractor**.

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## ■ Herbicide spills



“Spills must be properly decontaminated or cleaned-up to prevent environmental contamination”

Decontaminating  
herbicide spills



- Absorb the spill
- Clean the stained surface





Put on personal protective equipment  
(PPE)

Ref: [edis.ifas.ufl.edu/pi010](https://edis.ifas.ufl.edu/pi010)

# Protective equipment



Always use PPE when handling herbicides

Ref: [edis.ifas.ufl.edu/pi010](http://edis.ifas.ufl.edu/pi010)



- Absorb the spill      Materials such as cat litter, soil, sawdust, or other absorbent material should be used to absorb **liquid spills**



- Absorb the spill      Secure the **dry spills** into a metal or plastic container



- **Clean the surface** Use water/detergent mixtures to clean stained surfaces



- These materials, and soil contaminated in a spill, can be collected and placed in a suitable container (such as a plastic or metal bucket).
- Applied as a pesticide to a site upon which that pesticide can be applied as directed on the pesticide label.
- If application is not possible, dispose of as a hazardous or non-hazardous waste



DO NOT use this method to **dispose of soil that has been contaminated over a long period** by pesticide discharges, since some of this soil may be classified as a hazardous waste.

# “Portable Spill Kit”



- PPE
- Respirator
- Hazardous material storage bag
- Absorbent pads and materials
- Shovel or broom
- Dust pan
- Warning sign



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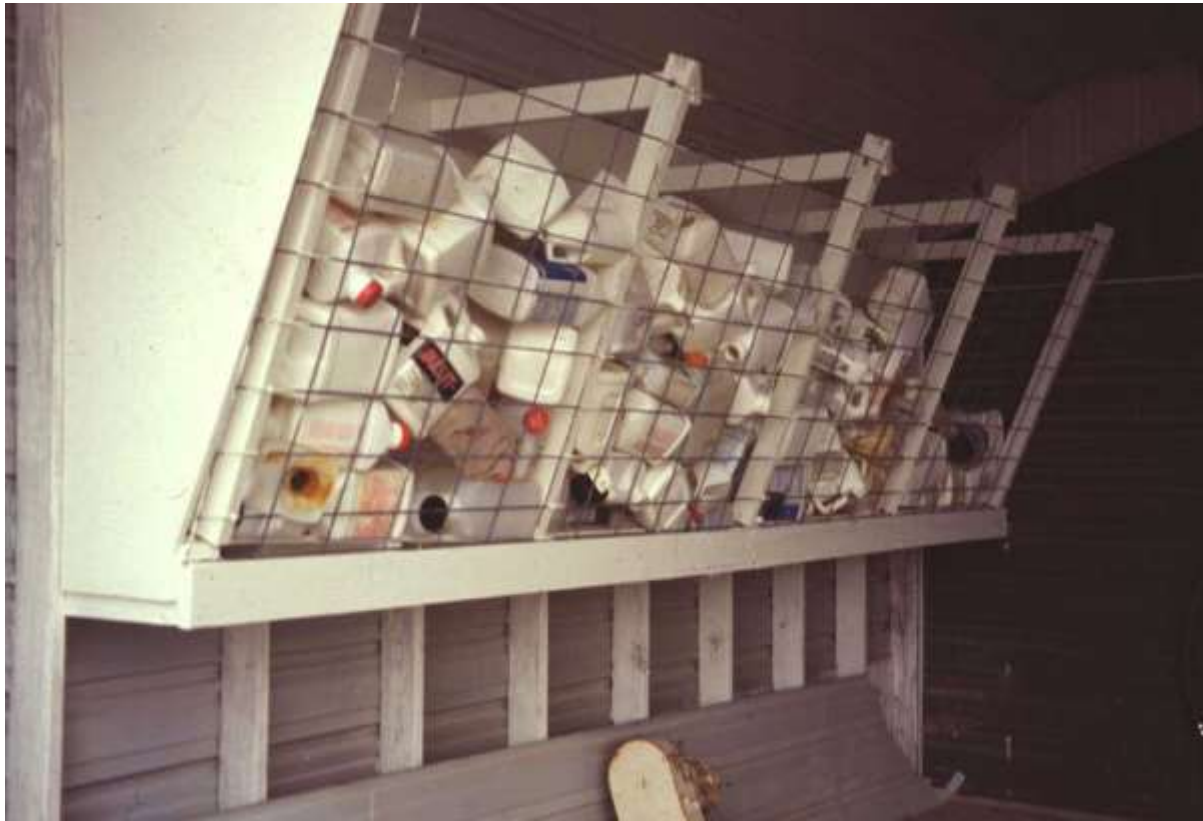
- **Improper disposal**
  - Environmental contamination
  - Liabilities to user
  
- **Types of herbicide waste**
  - Containers
  - Excess mix
  - Excess products
  - Rinse water
  
- **Hazardous waste**
  - Disposal by licensed contractor
  - FDEP
  
- **Decontamination**
  - Absorb or contain the chemical
  - Clean the surface



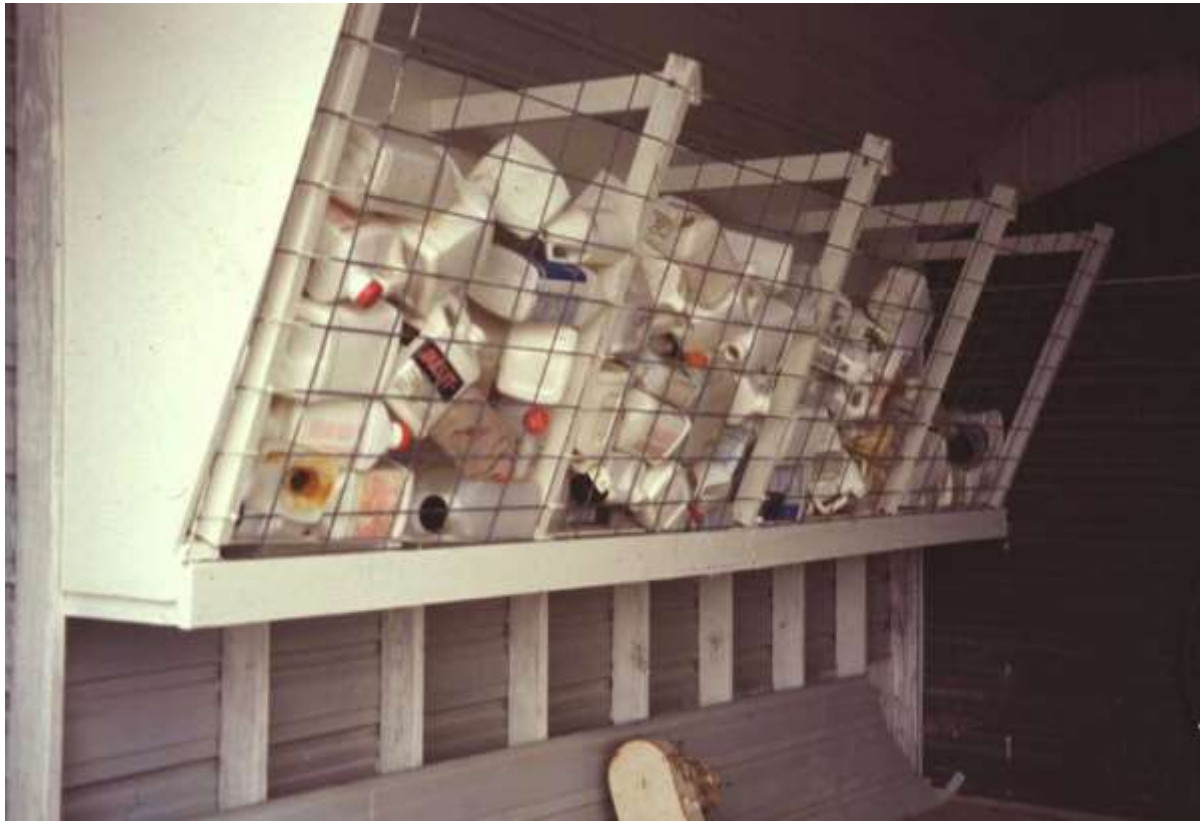
Irresponsible storage of herbicide containers



Irresponsible storage of herbicide containers



Properly cleaned plastic containers awaiting recycling



Properly cleaned plastic containers awaiting recycling

# “Improper disposal of pesticide waste has serious implications”



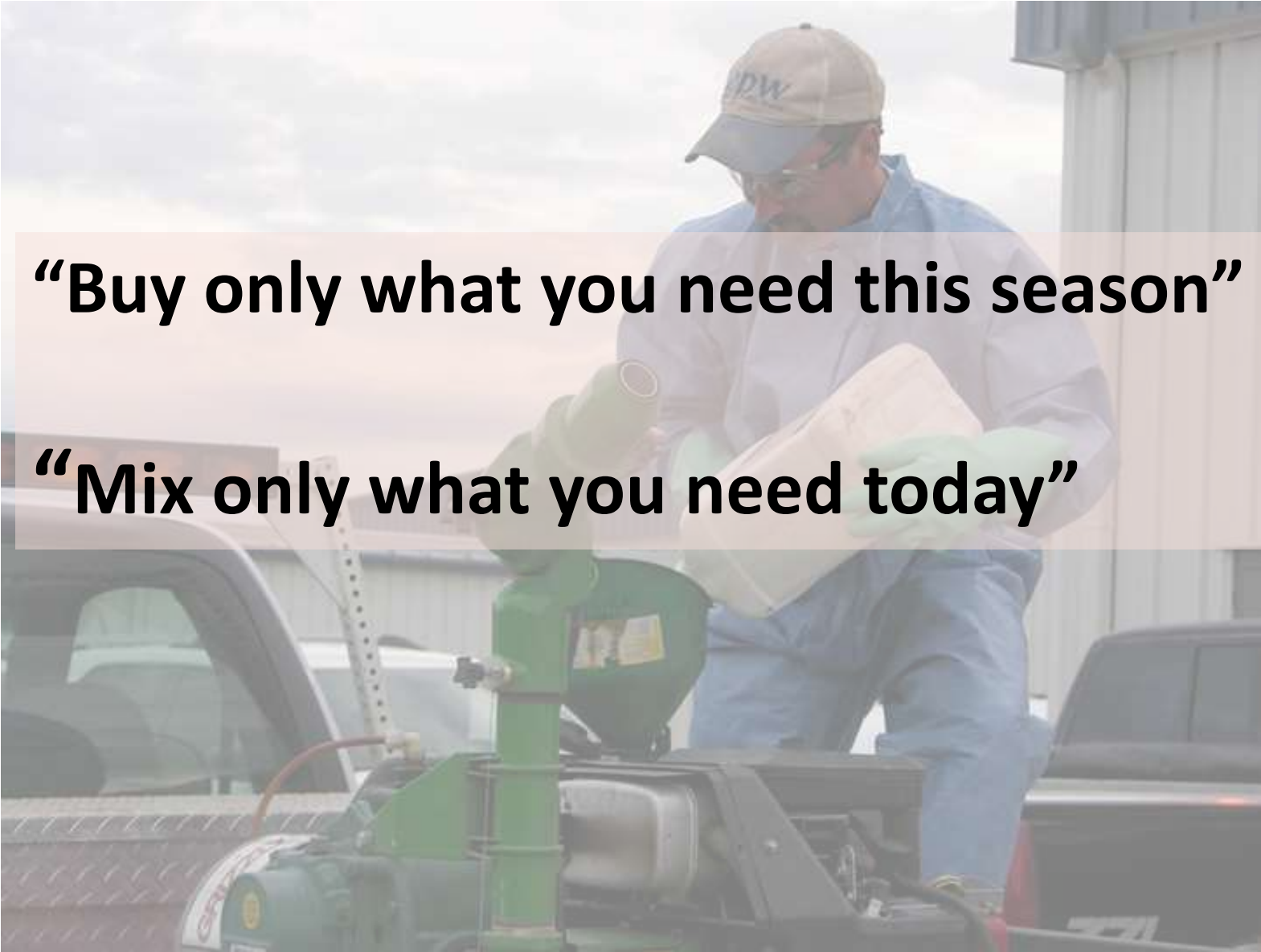
## Iowa officials say fish kill caused by pesticide disposal

POSTED 9:44 PM, JULY 28, 2017, BY WQAD DIGITAL TEAM, UPDATED AT 10:11PM, JULY 28, 2017



HULL, Iowa (AP) — Iowa Department of Natural Resources officials say improper disposal of a pesticide and other chemicals led to a fish kill in northwestern Iowa.

Officials say in a written release that DNR investigators looking into a fish kill in a small

A person wearing a blue protective suit, a tan cap with "PDW" on it, and green gloves is pouring liquid from a white jug into a green sprayer machine. The machine is mounted on the back of a truck. The background shows a building and a cloudy sky.

**“Buy only what you need this season”**

**“Mix only what you need today”**



# Thank you...



**UF-IFAS SWFREC weed science team**

## Contact

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