

# best Practice, better Water Protection



TOPPS





Biobed as an element of

## **DEMOFARM within project TOPPS**

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# TOPPS – project within EU Program *LIFE Environment*

**T**rain the  
**P**erators to  
**P**revent Pollution from  
**P**oint  
**S**ources



# Tasks

- BMP Guideline
- Webpage
- Info materials
- Stakeholder trainings
- DemoTrailer
- **DEMOFARM**
- Operator awareness survey and farm audit

# DEMOFARM

to demonstrate and promote farm infrastructure and operator behavior preventing water contamination from point sources

- Storage facilities
- Biobed
- Filling tank





# Concept

- Farm requirements
  - size
  - crops
  - sprayer
  - PPP use
- BMP Guideline
- Legal regulations
  - Decree of Min/Agr



[www.topps-life.org](http://www.topps-life.org)



# Farm of Warsaw AgrUniv - Żelazna



- 400 ha owned + 250 ha rented
- Potatoes (40%), Beans (15%), Carrots (10%), Cereals
- Fish nursery – lake 20 ha (*water monitored for biological impurities*)
- Airassisted sprayer – 4000 l tank / 18 m spray boom
- Around 120 spraying days/season
- PPP use – nearly 6 t/year

## Farm requirements

- Store
  - capacity: up to **2 ton** of PPP
  - measuring site
  - empty packaging site
  
- Biobed
  - capacity: at least **10 m<sup>3</sup>** of biomix
  - size: **sprayer dimensions + 0,5 m** margin
  
- Filling tank
  - capacity: **2 x sprayer tank capacity**



## PPP Store - location

- **DO locate store away from all sensitive zones to minimize risks**
  - store for >1 ton of PPP: - **50 m** from sensitive zones cat. „high”
  - **10 m** from sensitive zones cat. „high”  
*if compliant with 1-hour fire resistance spec.*

## PPP Store - location



## PPP Store - location

- **DO provide mixing & loading site on farm adjacent to store**

*- PPPs removed from store must always be in sight and/or protected from non-authorised access*

*- Mixing & loading areas must be capable of retaining all spills and have collection facilities for emptied containers and packaging.*



## PPP store - access

- **DO store PPP within lockable building or cupboard**
  - secure lock
  - no access possible through windows and other openings
- **ALWAYS display appropriate safety and hazard signs at the store entrance**
  - *PPP STORE* sign
  - danger warning signs

## PPP store - access





## PPP store - access



## PPP store - general

- **ALWAYS use fire resistant store**
  - fire resistant walls, doors, construction
  - protected load bearing steel construction
  - 1-hour internal and external fire resistance



## PPP Store - general

- **ALWAYS** have non-absorbent shelves that are without sharp points



# PPP Store - general

- **DO equip store with facilities for measuring PPPs (weight/volume)**  
- dedicated facilities located within a bunded area
- **DO store empty packages in a secured, dedicated and covered facility**  
- dedicated container or plastic bag in the PPP store



## PPP Store - general

- Floors **SHOULD** have a smooth finish for ease of cleaning
- Storage room **SHOULD** be bunded or equipped with closed collection system
  - dedicated collecting tank

**TO COLLECTING TANK**





## PPP Store

- **Store must be appropriately lit.**
- **Electrical system must be dust- and gasproof**



## PPP Store

- **Store should be equipped with ventilation system of appropriate capacity (air exchange rate):**
  - 3 x per hour – normal operation
  - 10 x per hour – in emergency



## Biobed

- **DO prevent the loading area becoming contaminated**
- **DO clean sprayer externally**
  - hard surface, bunded and impermeable, enabling collection of waste water
  - or
  - drive-over systems with a biologically active matrix

*Acc. legal reg.*

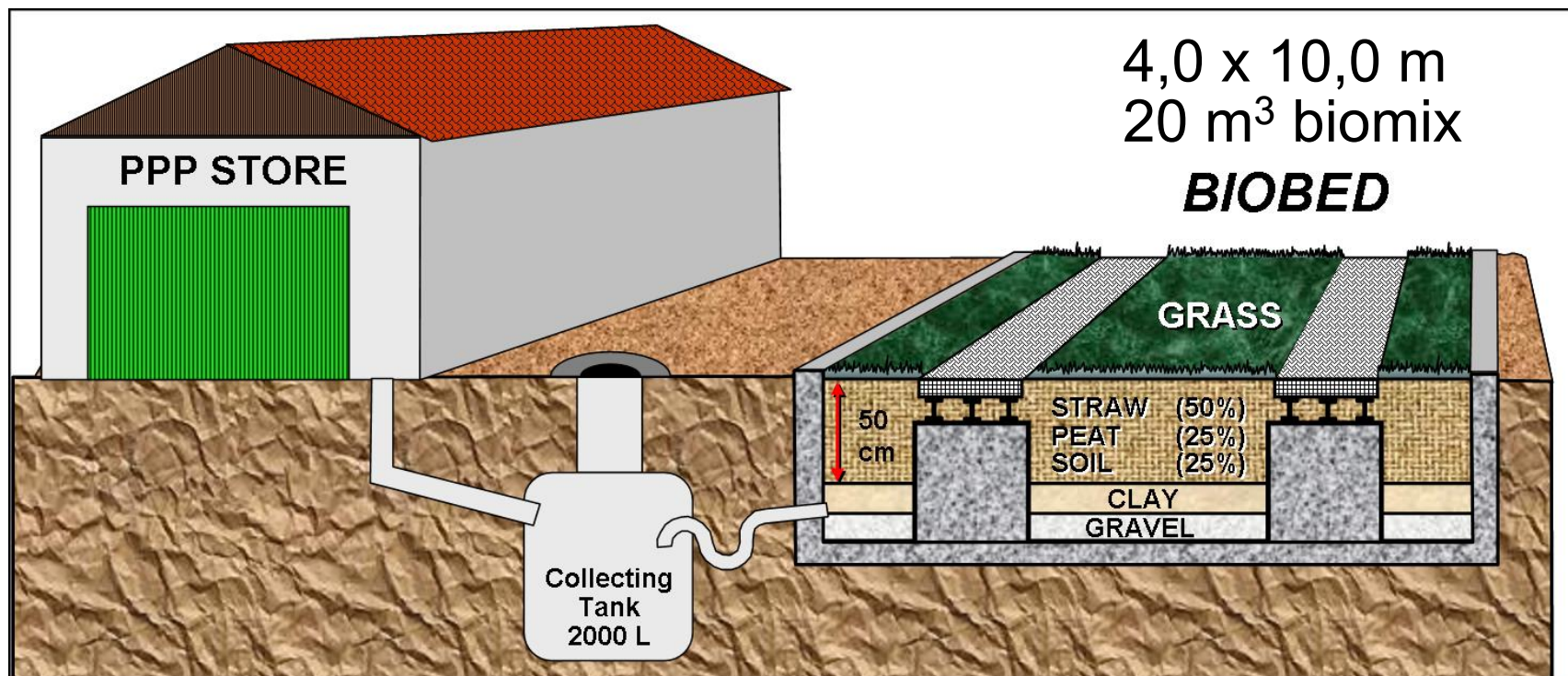
- **After spraying the contaminated vehicles and equipment should be externally washed at the site equipped with the system for rinse water purification or system retaining rinse water for neutralization of the contaminants**

## Biobed – use and requirements

- **For safe filling and external cleaning of sprayer (pressure gun)**
  - lined
  - collection of percolate
  - capacity to take at least 5000 l of rinsing water
  - located next to the PPP store
  - equipped with filling water tank

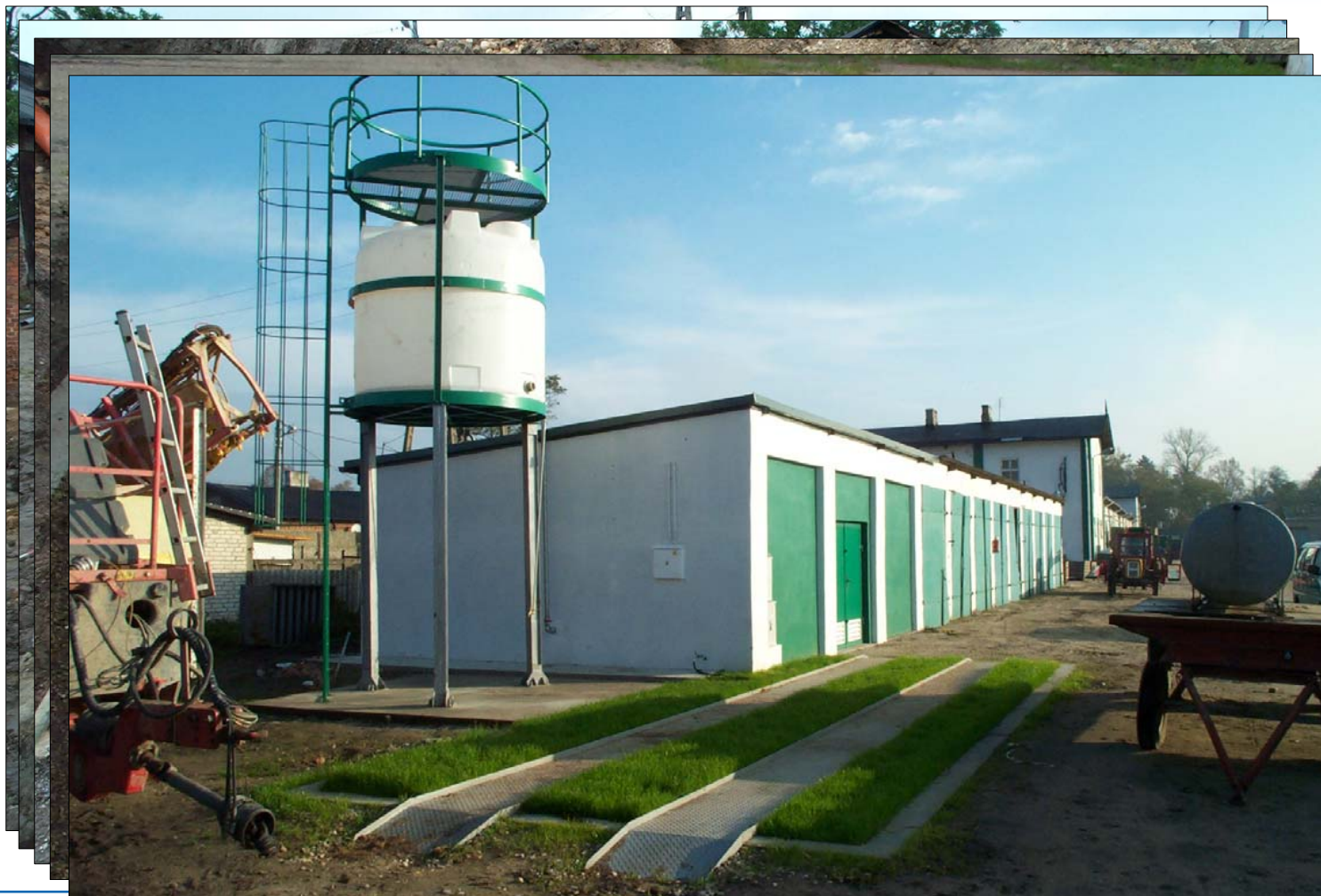


# Biobed





# Biobed



## Filling tank

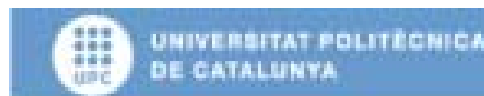
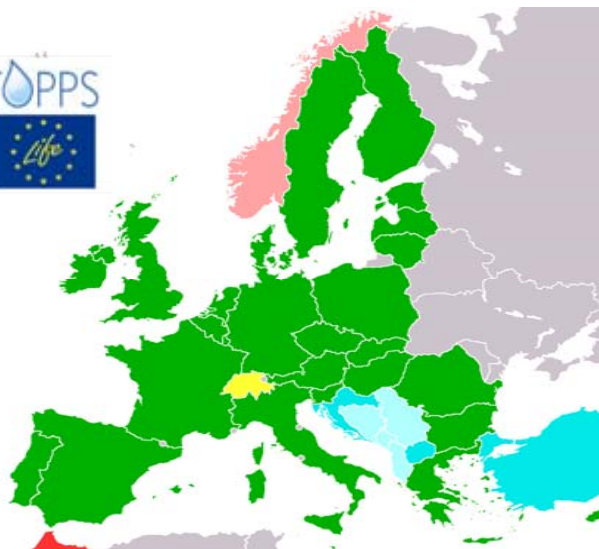
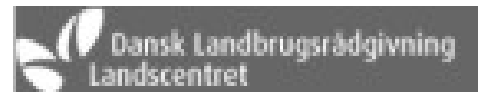
- **NEVER fill spray equipment directly from wells**
  - an intermediate water supply, such as a filling tank, that disconnects water source from the spray solution being prepared



### Elevated filling tank:

- UV resistant PE
- Volume: 8.000 l  
(2 x sprayer tank)
- Automatically refilled
- Output: 300-400 l/min

# Thank you





**best**  
Practice,  
**better**  
Water Protection



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