

II. Store Management

Topic 29d

How to Construct a Disposal Pit

FACT SHEET

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Topic 29d: How to Construct a Disposal Pit

A disposal pit can be used to **bury small quantities** of empty agri-input packages on-farm. It is recommended that **several farmers** should work together on this and **seek the advice** of local authorities.

Burial should be done in a small pit, with the following properties:

Site

- The pit should be at least **250 m** away from a **borehole** used for drinking or irrigation water to prevent drainage or seepage.
- The area chosen must not be subject to flooding and must be located well away from **open water**—at least **500 m** away from streams, springs, ponds, rivers, or lakes.
- Ideally, the disposal pit should be located where the subsoil will permit a **limited but slow permeation** and biological degradation of the pesticide.
- **Avoid sandy soil** sites that allow seepage into the underground water.
- **Avoid** areas with a **high water table**. The bottom of the pit should be located at least 2 m above groundwater level.
- An **additional area** should be reserved alongside for a second or third pit for future use.

Construction

- The burial must be **deep enough**.
- The site must be adequately **fenced off** to ensure that human and animal activities will not uncover the pesticide wastes.
- The site must also be clearly labeled with **warning signs**. The sign must be posted with a skull and crossbones: Danger toxic wastes: no unauthorized entry.
- When digging the pit, construct a **bund** by building up the soil around the pit so that floodwater is kept out.
- The pit should be in the form of a bowl with a diameter of 2–3 m and a depth of 1–1.5 m.
- Initially, the pit should be **lined** with 5–10 cm of **clay** (to prevent percolation of pesticides into the subsoil and groundwater) and **coated** with 5 cm of **lime** (to deactivate any pesticide residues in the pit).



Disposal

- Waste should be added to the pit in layers of not more than 10–15 cm deep and **intermixed with lime** and biodegradable household waste to assist biological degradation.
- Concentrated wastes should be **diluted with water** before disposal.
- Contaminated packages should be **cut open, ruptured, or crushed** before disposal.
- On completion of each deposit, a layer of **compost** or earth should **cover** the waste to prevent risk of contact and to provide a source of nutrients and micro-organisms for biological degradation.
- Fill the pit and allow room for a **final layer** of 50 cm of compacted compost or soil to top it off.
- Once filled, the top should be planted with **bushes** to avoid rapid drainage of water into the subsoil.
- The **second pit** should then be excavated and operated in a similar manner.



General advice

- Always wear personal **protective equipment** when disposing of the empty packages.
- After disposing, **clean** the tools, protective clothing, and yourself.
- Keep a **record book** of disposals, noting the date, the composition, the quantity of the product or container type and size, and the site. In addition, if any unwanted agri-inputs have been taken out of stock or lost due to spillage, update stock records.

NOTE: The entire disposal operation should be **supervised** by a **trained, responsible member of staff**. This staff member must ensure that the above safety rules are observed and that products are not misappropriated.

INSTRUCTIONS

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Materials needed

- Flip-sheet board with flip-sheets
- Markers (1 black, 1 blue, 1 green, 1 red)
- Kraft paper or other large piece of paper
- Masking tape

Time needed: 45 minutes

Preparations: Flip-sheet with the title: *How to construct a disposal pit*

The materials from topic 29b

Kraft paper with the heading *Disposal pit*

Colored cards with:

- *250m from borehole*
- *500m from open water*
- *Subsoil slow permeation*
- *Avoid sandy soil*
- *Avoid high water table*
- *Fenced*
- *Warning sign*
- *Bund of sand*
- *Diameter 2-3m*
- *Depth 1-1.5m*
- *Lined 5-10cm clay*
- *Coated 5 cm of lime*
- *Intermix with lime and other waste*
- *Dilute with water*
- *Compost to cover*
- *Plant bushes*
- *Protective equipment*
- *Clean equipment*
- *Keep records*

Set up

- Attention:** Show participants the empty bags, bottles, and boxes. Tell participants that in the previous session we learned that there are several ways to dispose of these empty packages. Unfortunately for most farmers or small agro-dealers, one of the few options is the disposal pit.
- Title:** Tell participants the title while showing the flip-sheet with the title: *How to Construct a Disposal Pit*.
- Credibility:** Explain your experience with agri-inputs.
- Objectives:** To explain how to construct a disposal pit and how to dispose of empty agri-input packages in the disposal pit.
- Benefits:** Proper disposal will prevent damage to the environment and contamination of people and animals.
- Direction:** During this session, we will only focus on the disposal pit and not on other methods of disposal.

Delivery

Explanation, Demonstration, Exercise, and Guidance:

1. Paste the Kraft paper with the heading *disposal pit* on the wall. Tell participants that we will first look at the **site**. Ask the following questions. Every time the correct answer is given, paste the colored card on the Kraft paper. The questions are:
 - How many meters should the pit be located away from a **borehole** used for drinking or irrigation water to prevent drainage or seepage? Answer: at least **250 m**.
 - How many meters should the pit be located away from **open water** such as streams, springs, ponds, rivers, or lakes? Answer: at least **500 m**.
 - What would be the **perfect soil type**? Answer: The disposal pit should ideally be located where the subsoil will permit a **limited but slow permeation** and biological degradation of the pesticide.
 - What soils should be **avoided**? Answer: Avoid **sandy soil** sites which allow seepage into the underground water.
 - Add: **Avoid** areas with a **high water table**. The bottom of the pit should be located at least 2 m above groundwater level.
2. Tell participants that we will continue with **actual construction** of the disposal pit. Ask more questions. If the correct answer is given, draw the answer on the Kraft paper and paste the colored cards with the correct answers next to it.
 - How can we prevent people from digging at this site? Answer: The site should be adequately **fenced off** to ensure that human and animal activities will not uncover the pesticide wastes. Draw a fence. Second answer: The site must also be clearly labeled with **warning signs**. It must be sign posted with a skull

- and crossbones: Danger toxic wastes: no unauthorized entry. Draw a warning sign.
- How can we prevent **flood water** from entering the pit? Answer: When digging the pit, construct a **bund** by building up the soil around the pit. Draw a bund.
 - What are the **measurements** of a pit? Answer: The pit should be in the form of a bowl with a diameter of 2–3 m and a depth of 1–1.5 m. Draw a bowl.
 - With what should the pit be **lined**? Answer: Initially, the pit should be lined with 5–10 cm of **clay** (to prevent percolation of pesticides into the subsoil and groundwater). Draw the lining with a green marker.
 - With what should the pit be **coated**? With 5 cm of **lime** (to deactivate any pesticide residues in the pit). Draw the coating with a red marker.
3. Tell participants that we will continue with the **disposal**. Be directive and give the following instructions while pasting the colored cards on the Kraft paper while you are explaining.
- Waste should be added to the pit in layers of not more than 10–15 cm deep and **intermixed with lime** and biodegradable household waste to assist biological degradation.
 - Concentrated wastes should be **diluted with water** before disposal.
 - On completion of each deposit, a layer of **compost** or earth should **cover** the waste to prevent risk of contact and to provide a source of nutrients and micro-organisms for biological degradation. Fill the pit and allow room for a **final layer** of 50 cm of compacted compost or soil to top it off.
 - Once filled, the top should be planted with **bushes** to avoid rapid drainage of water into the subsoil.
4. Tell participants that you would like to conclude with some general advice. Give the advice in a directive way and paste the colored cards on the Kraft paper while you are explaining.
- Always wear personal **protective equipment** when disposing of the empty packages.
 - After disposing, **clean** the tools, protective clothing, and yourself.
 - Keep a **record book** of disposals, noting the date, the composition, the quantity of the product or container type and size, and the site. In addition, if any unwanted agri-inputs have been taken out of stock or lost due to spillage, update stock records.

Finish

- Summary:** Give a summary by using the drawing of the disposal pit. Mention the main points.
- Questions:** Ask if anyone has a question or comment.
- Evaluation:** Ask them to mention why the pit should be lined with clay and coated with lime. Ask what we should put on top when all packages are disposed of in the pit.



Next step: We have now seen how to clean and destruct and how to dispose of empty agri-input packages. It is their task as agro-dealers to educate customers.

Distribute the **fact sheet** to all participants.