

Manure handling and storage

Introduction

Manure is a cheap source of valuable nutrients for crop growth and contributes significantly to the long-term fertility of the soil. It is a good fertilizer containing nitrogen, phosphorus, potassium, and also trace elements. It also adds organic matter to the soil which may improve biological activity, soil structure, aeration, soil moisture – holding capacity and water infiltration. However, the fertilizer value of manure depends basically on the type of animal, its age and diet. Manure value, in terms of crop nutrients, also crucially depends on how it is stored.

Handling of manure

Some nutrients are lost from manure through improper handling and storage. When manure is left uncovered, rain washes out the valuable nitrogen through leaching. The nitrogen may also escape via the air through volatilization. In the case of improper storage, manure may lose 25% of its nitrogen in just one day and 50% in two days as ammonia gas. The following photos below show some manure handling options.



Figure 1. Stockpiling



Figure 2. Dry stack



Figure 3. Composting

Practical ways of storing manure

Method One

If manure is left in the kraal (where the animals are kept) until it is used, the kraal should be covered with a simple roof to prevent loss of nutrients. Crop residues, such as maize stalks, should be added to the manure as cattle fodder and bedding. This will absorb urine and initiate the composting process.

Method Two

To prevent nutrient loss from the manure in the kraal, dig a pit leading off from the kraal into which any rainwater or run-off can flow. This kraal run-off normally contains valuable nutrients. Compost can be made in this pit by adding crop residues gradually throughout the rainy season to build up a solid mass of material enriched by the kraal run-off. The pit must be covered with banana leaves or grass to reduce gaseous losses.

Method Three

Manure is collected daily and stored in a pile covered with soil or banana leaves. Crop residues are incorporated into the pile to soak up liquids. During the rainy season, weeds may be allowed to grow on the pile to reduce rainfall impact and washing away of the pile.