Session 5: ANIMAL MANURE

Objectives
1. To understand how to make farming more sustainable through the use of animal manure.
2. To know how to make the best use of animals in recycling waste products.
3. To build a manure-only compost heap.

Discuss the benefits of keeping animals on your farm.

Role of livestock in farming systems

Livestock play a significant role in sustainable agriculture. They serve as a source of draught power for cultivation and transportation. Oxen and donkeys are much cheaper than tractors.

Poultry, cattle, pigs, goats and sheep can all be used to prepare a garden area. These animals help clear the land of vegetation and weeds. Livestock feed on crop residues and other products that would not be easy to get rid of. They eat weed seeds and many pest insects. They also produce manure, which improves the soil. Recycling waste on your farm reduces dependency on external inputs.

What is good manure?

Manure consists of animal excrement, usually mixed with straw or
leaves. It contains nitrogen, which is the main nutrient for plant growth. This means that manure gives a boost to your production.

The amount of and quality of manure depend on:
- the quality of feed of the animal or bird
- the type of animal or bird
- the health of the animal
- fresh chicken manure contains high levels of nitrogen, whilst duck manure has lower amounts, followed by pig manure and then cattle manure. Rabbit and donkey manure are relatively low in nitrogen.
- the management of manure
- good manure is more than just excrement and urine.

For better manure, add straw and leaves and allow the mixture to age. Using aged manure is an ideal method to retain and increase soil fertility.

How to get MORE manure

Often you may not have as much manure as you wish. Luckily there are ways to increase the amount of manure you have. A good way of bulking manure is by using a litter bedding of dry grass, maize, soybean, or groundnut stover in the kraal. The animals will then trample the litter into the manure. The litter bedding will also absorb urine and nutrients.

Why is it important to know how to manage manure?

Although farmers know the importance of manure in crop production, many of them do not use it properly and therefore get undesirable effects. Maize farmers, for example, may get more weeds after applying cattle manure. Improved collection, composting, storage and application of manure can increase your appreciation of this cheap but extremely valuable resource.
How to compost manure

Once the manure has been collected (either in the field or at the homestead) it should be composted. If manure is not aged it can slow down plant growth or scorch the leaves.

Fresh chicken manure should not be applied directly onto vegetables. It is highly acid and will burn crops. Use fresh chicken manure in compost.

Composting also helps to destroy weed seeds and to remove any bad smell. An easy way of composting is to add water to the manure heap. Add a little lime to reduce acidity if you use chicken manure. Cover the heap with dry grass or plastic and in a few days it will heat up. Monitor the heat changes and turn the heap when it cools. After several turnings, it will no longer heat up when watered and turned.

How to compost animal manure
At this stage the process of composting would have killed most weed seeds and the manure may be packed in bags for storage or applied to your crops.

**How to spread composted manure**

You may either turn the composted manure into the soil or spread it above the ground. A Coke can (330 ml) full of composted manure per planting hole is sufficient for farmers growing field crops.

**When to spread composted manure**

Composted manure can be applied at any stage of plant growth. Farmers usually apply it once or twice (before planting and a few weeks after emergence).

1. **How best can manure be applied to your crops?**
2. **How many animals (birds) do you think could provide enough manure for your requirements?**
3. **How can you improve the quality of manure on your farm?**

**Preparation for next session**

For next session, it is suggested that you bring material to make leaf and manure tea. You will need water, two 200 litre drums, two empty grain sacks, and about 30 kg of fresh leaves and 30 kg manure.