

B.V RAJU COLLEGE

VISHNUPUR, BHIMAVARAM.

DEPARTMENT OF LIFE SCIENCES

FIELD VISIT TO FARM YARD



VISHNU
UNIVERSAL LEARNING



1.FIELD VISIT – KOVVADA VILLEGE

FARM YARD MANURE PREPARATION AND ITS IMPORTANCE IN ORGANIC FARMING

Manures are the plant and animal wastes that are used as sources of plant nutrients. The term “farm yard manure” is an expression to signify any manure prepared in the backyard using the farm waste, cattle dung and urine. Since very early ages, it is prevalent in our agriculture. 50 years back, farm yard manure was the only source of nutrients supplies to the crops. Farm yard manure is prepared by spreading cattle dung, water, and crop residues in a pit at the backyard of every house. Often many household wastes are also added with farm wastes. The residues are allowed to decompose with cattle dung for a period of 6-8 months. The resultant manure is transported to cultivated lands. Three principle methods of preparing FYM are standardized on scientific lines in the last 15-20 years.

1. **Open pit method:** Allowing semi-aerobic decomposition of farm wastes in underground pit which requires turning over the decomposing materials frequently.
2. **Sealed pit method:** Allowing anaerobic decomposition of farm wastes in underground pit, requires sealing the surface of the pit with dung slurry.
3. **Japanese method:** allowing decomposition of farm wastes in an above ground structure of stones or brocks or thatched walls up to height of 1 meter.
 - A method of spreading the cattle dung, from wastes, cattle urine watering layer by layer are all similar for all methods but varies in the way of decomposing.
 - Partial aerobic condition is provided as the top part of pit is allowed to be in contact with atmospheric in open pit method. The time taken for decomposition is around 5-5 months.
 - Anaerobic conditions are provided and the decomposition is delayed to 6-8 months in sealed pit method. Under anaerobic conditions the decomposition results into manure rich in $\text{NH}_4\text{-N}$ but poor in $\text{NO}_3\text{-N}$ due to limited supply of oxygen. Manure rich in $\text{NH}_4\text{-N}$ is desirable for agricultural fields.
 - Under anaerobic conditions and semi aerobic conditions more nitrification is allowed due to adequate supply of oxygen and large population of nitrifying bacteria.

In all the methods of manure preparation a starter bacterium inoculums in the form of cattle dung is essential. Cattle dung contains dense bacterial population with mucus and intestinal worn out cells. The carbonaceous residue serves as substrate for their activity and as a result the cellulose and hemicelluloses substances are broken into simple substances. The crop residues and other farm wastes get converted into granular pieces into large quantity of nutrients. As all the components of carbonaceous substrate are broken down the decomposing manure contains macro and micro

nutrients. As the process of releasing of nutrients proceed even after the applications of manures in the field, manurial benefits are derived over long period of time in contrast to quick availability of large quantity of nutrients when fertilizers are applied.

Recently some new practices are added in preparation of FYM

1. Biogas slurry which is rich in nutrients is diverted into pit along with other residues whereas washing and urine from cattle are directly diverted into the pit.
2. Ideally the cattle urine can be collected in soaking medium (saw dust or straw) and later used for manuring.
3. Superphosphate is added in between the layers of dung and crop residues to prepare p-rich manure (phospho compost).
4. Micro nutrients enrichment of FYM is tried by using various micro nutrient fertilizers
5. Trichoderma (bacterial culture) is added to FYM pit in between layers of crop residues to improve / fasten the rate of decomposition.

RESPONSE APPLIED FYM

The benefits derived by application of FYM are reported ever since the documentation on experimental results . Farm yard application can result into chain of effects in soil besides increasing the crop yield. The response to applied FYM could be studied in 5 groups:

- 1. Improved crop yields**
- 2. Improved physical properties of soil**
- 3. Improved nutrient availability**
- 4. Improved microbial activity**
- 5. Residual benefits to succeeding crops**

In our college academics we have learnt about the organic farming theoretically.

On our field trip held by the college, we have gone to the farmhouse. There we learnt how the various useful resources have been used to make the farmyard manure and also the production of methane gas. This methane (bio fuel) has been used to make living also not only we have learned it but also applied and guided these techniques to the uneducated farmers.



