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Perspective

Effect of farmyard manure applications on soil properties

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DESCRIPTION

Farmyard manure is a term used to describe a degraded mixture of animal excrement, urine, litter, and by-products from roughages or fodder fed to cattle. Average amounts of well-decomposed farmyard manure contain 0.5% N, 0.2% P_2O_5, and 0.5% K_2O. Farmers' current procedure for processing farmyard manure is flawed. Wasted urine has a 1% N and a 1.35% K content. Nitrogen present in urine is mostly in the form of urea which is subjected to volatilization losses. Even during storage, nutrients are lost due to leaching and volatilization. However, it is practically impossible to avoid losses altogether, but can be reduced by following improved method of preparation of farmyard manure. Since all plants require nitrogen, which chicken manure has a high concentration of, it is probably the best manure for gardens, but it must be aged and composted properly to avoid scorching the plants. It is ideal to apply chicken manure in the fall or spring after it has had time to compost because it is a rich source of nutrients.

There are trenches that are 6 to 7.5 metres long, 1.5 to 2.0 metres wide and 1.0 metres deep. In order to absorb pee, all available litter and waste are combined with dirt and put inside the shed. The following morning, dung and waste that has been submerged in urine are gathered and dumped in the trench. To fill with daily collection, a part of the trench from one end should be taken up. The top of the heap is formed into a dome and plastered with cow dung earth slurry once the area is filled up to a height of 45 cm to 60 cm above ground level. When the first trench is fully filled, the process is repeated and a second trench is prepared. After plastering, the manure takes around four to five months to be ready for usage. If urine is not caught in the bedding, it can be collected in a cemented pit with the washings from the cattle shed and added to the farmyard manure pit later.

In order to prevent losses and improve farmyard manure, chemical preservatives can also be utilised. Gypsum and superphosphate are the most often utilised compounds. Spread throughout the cattle shed is gypsum, which not only contributes calcium and sulphur but also absorbs urine and stops urea from being lost by volatilization. Superphosphate likewise has a comparable effect on lowering losses and upping the level of phosphorus.

In general, 10 to 20 t/ha are applied, but fodder grasses and vegetables receive more than 20 t/ha. To prevent nitrogen immobilisation in such circumstances, farmyard manure should be applied at least 15 days in advance. The existing practice of leaving manure in small heaps scattered in the field for a very long period leads to loss of nutrients. Spreading and integrating the material by ploughing immediately after application can minimise these losses.

Potato, tomato, sweet potato, carrot, radish, onion, and other vegetable crops respond well to farmyard manure. Sugarcane, rice, Napier grass, orchard crops like oranges, bananas, and mangoes, as well as plantation crops like coconut, are among the other resilient crops. It takes time for all of the nutrients in farmyard manure to become available. About 30% N, 60%-70% P and 70% K are available to the first crop.

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