CPP Manure production

In Organic and Biodynamic agriculture with the Perennial and Annual crops production, there will be in need of methods in controlling the pest infestation and disease incidences. Similarly the crops will be also showing some micronutrient deficiencies that will have a direct influence over the growth and yield. The supply of balanced nutrition to the crops can solve the above-mentioned problems by increasing the vigour of the crop. In Biodynamic farming, the best way is to use the Biodynamic herbal preparations (BD 502 – BD 507), which are rich in all the essential nutrients that are needed for the crop health and also have the power of getting the planetary influences to induce the resistance power, vigour and growth. The effectiveness and usefulness of the herbal preparations (BD 502 – BD 507) can be exploited easily by the use of 'CPP Manure' in all the possible agricultural operations. The production of this manure with good quality requires proper attention and care.

Selection of site:

The site in which this manure can be processed should be selected based on the following criteria: -

- There should not be any water logging that means the area should have good drainage capacity to drain the water during rainy seasons.
- It should be away from big trees. If it is not possible to get places without trees in the farm/ estates, then a deeper trench is essential around the CPP manure shed to avoid tree roots entering into the CPP manure pits.
- The area should not be contaminated with toxic chemicals.
- Should be nearer to a water source.

Material requirement:

1. ***Cow dung***: 75 – 80 kg.

   Since the cow-dung is one of the main ingredients, the quality of the cow-dung will decide the quality of CPP manure. The cow-dung has to be collected preferably from the lactating cow, which is not injected with antibiotics and vaccines. While

feeding the cow it is better to avoid the 'commercial feed concentrates'. To get good consistency of cow-dung it has to be fed with almost equal portions of green and dry fodder.

2. ***Eggshell powder***: 200g.

   The main intension is to get 'Calcium' from an organic source. This can be collected easily from the hatcheries or from the restaurants. Before pounding, it can be slightly roasted over a pan to break the membrane that adheres to the inner surface of it. Then it should be sieved nicely after pounding to get a finer particle.

3. ***Rock dust or deep bore well soil or quarry dust***: 200g.

   The purpose is to get the 'Silica'. The material also has to be sieved to get the finer particles.

4. ***Biodynamic herbal preparations:*** 3 sets.
5. ***Burnt bricks***: 200 number for a pit of size 3ft x 2ft x 1ft with double brick lining.
6. ***Gunny sac***: 1 No.
7. Few sticks and thatches to make a small shade over the pit of size 3ft x 2ft x 1 ft.

Procedure:

1. ***Construction of pit***:

   The pit with the inner dimension of 3ft x 2ft x 1ft has to be constructed with walls of double brick thickness. The bottom side of the pit should not be lined.

2. ***Kneading of the Cow-dung mixture:***

   The 75 – 80 kg of cow-dung is first cleaned well to remove the straws and other dirt's. To this 200g of eggshell powder and 200g of rock dust is sprinkled and mixed by kneading it for an hour. Clean water can be added if needed to bring proper consistency of the mixture.

3. ***Filling the pits & inoculating the Cow-dung mixture:***

   After proper Kneading of the cow-dung mixture it is then filled into the brick lined pit. The cow-dung mixture will form a 6 – 7 inch thick layer inside the pit.

   To inoculate the Biodynamic preparations five small holes are made in such a way that the hole reaches the center of the cow-dung mixture layer and also at equiv.-

distance from each other. In these five holes three grams of each Biodynamic herbal preparations are added separately and covered with the cow-dung. The 30ml of BD 507 can potentised with 1.5lt of water using a bottle by shaking it in a rhythmic pattern for 3mts and sprinkled over the cow-dung mixture layer.

The Biodynamic preparations can also be inoculated in another method. For this half of the cow-dung mixture is filled into the pit first. In this the three grams of all the Biodynamic preparations are added in five different spots separately at equal distance. Then the 30ml of BD 507 can potentised with 1.5lt of water using a bottle by shaking it in a rhythmic pattern for 3mts and sprinkled over the cow-dung mixture layer.

After the inoculation the cow-dung mixture layer is fully covered with a wet gunny sac. The pit should be protected from direct sunlight and rain by providing a shade made out of thatches or any other material.

Essential precautions & aftercare procedures*:*

- Before filling the brick lined pit with the cow-dung mixture it should be properly made wet by sprinkling adequate quantity of water.
- After making the CPP manure inside the pit care has to be taken to keep the area surrounding the pit always in wet state.
- If the gunny sac covering the CPP manure is dry it has to be made wet by taking it outside the pit and soaking it in a bucket of water and then laying it over the CPP manure.
- After every 20 days the whole content of the pit is taken out and kneaded properly for an hour or at least for 30 mts and put into the pit. While turning the water is added if needed to have 35 – 40 % moisture content and also to have a crumbly sate after kneading. The ‘C’ shaped Rhinoceros beetle young grub has to be removed.

Expected changes & recovery:

The colour of the cow-dung changes from the green to slight brown in the first turning. Then in the subsequent turnings the colour of the cow-dung changes from slight brown into dark brown or coffee brown. Similarly the odour of the cow-dung also changes from its real smell to a decaying straw smell in the first turning. In the subsequent turnings the decaying straw smell changes into a odour less state or into a soil smell. The

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consistency of the cow-dung also changes from the pasty state into a crumbly state at the end.

Generally after three turnings in 60 – 70 days the cow-dung gets a dark brown colour and a soil smell, which can be considered as a proper state for recovering. There will be around 35 – 40 kg CPP manure recovery from each pit.

Storage:

The CPP manure recovered from the pit has to be stored in a good condition to maintain its quality. For this, it has to be kept inside a dark and cool place. To attain this state of storage condition it can be kept inside a glazed earthen jars or Kadapa stone tanks with wooden lid, which is in turn surrounded by coir waste or mosses as an insulator and kept inside a wooden box. This condition is provided to avoid fluctuation in the temperature inside the jar / tank. If the recovered CPP manure is exposed to heat or if it allowed to dry or to too much wet will enhance the state of decomposition that can spoil the quality of the CPP manure.

Usage & dosage:

a. **Soil application:**

Take 1250g of CPP manure for a hectare of land and dissolve it in 37.5 lts of good quality water from natural stream or well or deep bore well. Stir this solution for 20 mts in clockwise and anti-clockwise direction alternatively and repeatedly till a deep vortex is formed every time to potentised it. The same quantity of 'CPP manure' can also be added along with the 'Horn manure – BD 500' while it is meant for sprinkling. The potentised CPP manure solution is finally sprinkled over the ground as big droplets with the help of itch leafy broom or brush or sprayer with low pressure. Use this in the evening hours of the descending period of the month and preferably on the selective zodiac based on the end produce of the crop. To improve the soil it is better to use atleast four times in a year, while the soil is in moist state.

b. Foliar spray:

For this purpose take 5.0 kg of CPP manure for a hectare of leaf canopy. Dissolve this quantity in 60 lts of good water and stir it in clockwise and anti-clockwise direction alternatively and repeatedly for 30 mts, till the deeper vortex is formed every time. If the spray is meant for any big trees the dosage for making the solution is the same, whereas the quantity of the solution should be increased based on the tree-canopy surface area. Spray in the ascending period of the month and in the morning hours, preferably on the selective zodiac based on the end produce of the crop.

The spray has to be planned based on the critical stages of the crop so as to suit the nutrient requirement of the crop to perform better. Drench the trees and bushes atleast once in a year.

c. For rooting:

In the nursery before planting the cuttings in poly bags the cut end of the cuttings should be smeared with the CPP manure paste. This will help the cuttings for better rooting.

d. Seed dressing:

Make slurry of the CPP manure and sprinkle it over the seeds. Then mix it in such a way that it covers the entire seeds and shade dry. This practise will help in good germination and establishment of healthy seedlings. The seed born and some soil born pathogens can be controlled.

e. Root dipping:

The roots of the seedlings uprooted from the mother bed or nursery can be dipped into the CPP manure slurry before it is transplanted in the main field or in the poly bags for better establishment.

f. Tree paste:

This is one of the best methods to adopt in any orchard or for perennial tree crops. This method will supply the essential nutrient of a crop in a balanced manner through the lenticels that are available in the cracks and crevices of the bark. The cambium of the trees will perform well to have good lateral growth and quick bud breaking. It also serves like a bio-control against several insects that are staying in the bark region of the tree, so some insect infestations can be controlled. Similarly the diseases seen in the bark of the trees also will be controlled.

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Here the CPP manure, fine rock dust and potters clay are mixed in equal portions to form slurry state by mixing them with adequate quantity of good water or any liquid manures. The slurry made can be pasted around the bark of the tree or bushes with the help of a brush or with a piece of jute gunny sac. The piece of gunny sac soaked with the tree paste slurry can be hold at particular height and moved downwards to smear the slurry. For better results descending period of a month can selected.

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