# Transforming Waste into Wealth: Cow Pat Pit in Sustainable Agriculture

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**ABSTRACT**

Biodynamic agriculture emphasizes working harmoniously with natural energies to sustain life processes within soil and crops. Cow Pat Pit (CPP) is a biodynamic preparation designed to stimulate soil microbial activity, enhance humus formation, and improve compost quality. Developed by Maria Thun as "Barrel Compost," CPP integrates cow dung, powdered eggshells, basalt dust, and biodynamic preparations (BD 502–507) in a brick-lined pit for fermentation over several months. This process generates a biologically active compound rich in beneficial microbes and growth-promoting substances. When applied as a soil or foliar spray, CPP enhances soil fertility, promotes root growth, and boosts crop resilience against pests and diseases. It is environmentally friendly, cost-effective, and contributes to sustainable agricultural systems by improving nutrient cycling and soil structure. The integration of CPP in organic and biodynamic farming systems represents a sustainable solution for ecological farming practices and waste utilization, turning agricultural by-products into a valuable input for soil regeneration.

## INTRODUCTION

Cow Pat Pit is known as CPP and is a specialized type of compost. It refers to cow manure mixed with crushed egg shell and basalt dust, then put into a 12-inch-deep pit lined with bricks. The dung is fermented, together with the preps 502-507, for a period of 3-4 months. It is applied in the evening during the cooler months.

1) Desi Cow dung


2) BD- 502-507

3) Egg shell powder

4) Basalt Rock Powder

5) Soil made Bricks

From fungal and bacterial plate tests of the CPP, it appears there is a wide range of colonies or families of fungi and bacteria which have proliferated during the fermentation of the original cow dung material and also from what has been gained from the biodynamic preparation BD 502-507 (Steiner, 1993).

It makes sense that the quality of the CPP will depend very much on the quality of original cow dung and in particular what type of fodder the cows have been eating. Obviously if the milk that cows produce from eating good quality grass grown bio dynamically, can be made into superb tasting yoghurt, quark grass grown bio dynamically can be made into superb tasting yoghurt, quark or cheese, the dung from such grass will also be (not superb tasting) but of a superb aroma that will make very good CPP. This is something that the discerning farmer can gradually learn to recognize. Relating dung aroma to dung quality to grass quality and then soil quality.

In a country such as India where the cow is highly venerated and the fertility quality of the cow dung is recognized, it hardly surprising that the Indian farmers have developed this biodynamic activity to a high degree since 1994 and now there are large amounts of CPP being made an used throughout India and also supplied to farmers converting.

**Ingredients of Cow Pat Pit (CPP):**

1. Cow dung -60 kg
2. Eggshell powdered -200gm
3. Basalt rock powdered -200gm
4. Biodynamic culture - (BD)- 502 to 507
5. Bricks- 100 piece

**Making the Pit:**

1. Choose a site with good drainage, well-shaded and aerated. A Vegetable Garden is ideal.
2. Dig a pit 90 cm x 60 cm x 30 cm deep (3ft x 2ft x 1ft)
3. Line the side of the pit with used bricks. Ensure that the bricks are wet prior to placing the dung.
4. The bricks are good medium for the walls of the pits in that they absorb moisture, and can be watered to keep the dung from drying out.
5. The bottom is left as bare earth.
6. The pits can be made in series of up to 100 pits in a group with a central path in between two double rows, or some system that suits the farm's needs.
7. The pits are usually situated within a shade house which is usually roofed with thatch.
8. This will keep the pits cool during the hot months and stop the dung from drying out, and will be shelter against the rain during monsoon. Make sure the shade house is high enough to work under. (Meena *et al*., 2020)




**Fig: Making of pit of the CPP by Module Students (RBCA, Wardha)**

**Making the Slurry**

1. Collect 60 kgs of cow dung from lactating cows preferably fed on bio dynamically grown fodder. No concentrates or grains should be fed two to three days before collecting the dung.
2. Add water by sprinkling it over the cow dung if dry. Cow dung should not be too dry or too wet. The dung should be firm as this facilitates the breakdown processes.
3. It is mixed with 200 grams of powdered egg shell. Heat egg shells in a hot oven for ten minutes which will aid the grinding of the shell into powder and 200 grams of powdered basalt dust. If there is no basalt, use blue granite quarry dust or bore well soil instead. Sprinkle the basalt rock or bore well soil, and crushed egg shells, over the cow dung.
4. Mix for 10 - 30 minutes. The mixing of the dung is important to aerate it. You will notice the consistency will change. Some farmers mix for as long as 1 hour.
5. Place the dung mixture into the pit. When filling the pits makes sure that they are not filled more than a brick and a half deep (12cm). Any deeper would take too long to breakdown into humus.
6. The dung should not be tightly packed. Smooth off the top of the dung.

**Fig: Making of slurry for the pit**

7. Knead (mix) for 10-30 minutes. The kneading of the dung is important to aerate it. You will notice the consistency will change. Some farmers mix for as long as 1 hours.

8. Place the dung mixture the pit. When filling the pit make sure that they are not filled more than a brick and a half deep .

9. The long should not be tightly packed. Smooth off the top of the dung.

**Fig: Filling of the pit with the cow dung slurry with mixture of other ingredients**

**Inserting the BD Preparation: -**

a) Make six holes: 2 inches (3-4cm) deep after gently patting the dung into the pit.

b) Insert 3 sets of preps BD502-506 individually into the holes by placing each into a handful of compost (Thun, 2003; Steiner, 1993; Meena *et al*., 2020).

- 3 sets of BD502 in a handful of compost into hole 1,
- 3 sets of BD502 in a handful of compost into hole 2 and so on.

c) Then close the holes with the holes with some compost. Stir BD507 in 350 ml of clean water for 10 minutes.

d) Add ½ of stirred BD507 into the remaining hole, then sprinkle the balance over entire pit and jute bag that will cover the pit.

e) Place a wet sack over the cow pat pit to maintain moisture.

(Waterproof covers should be raised at one side to allow water.)


**Maintenance:**

1. Once a month gently turn/aerate with a garden fork, leaving the surface smooth and covered on completion to avoid excessive drying. If manure worms – Eisenia foetida (gold banded lavender color) or Lumbri cusrebullus (small red) are not already present they can be introduced to aid the later stages of break down.

2. After the first months, turn each week. This will speed up the breakdown process.

3. Remove mature CPP in 3-5 months.

4. When ready CPP will be a good earthy smell. It can be used straight away, or stored in a earthen pot in Maintain moisture and use within 6 months.

5. The empty pits can be refilled again.a cool place.

6. 60 kg of cow dung gives about 30-35 kg of CPP after fermentation.

**Application:**

1. When it is mature, it is mixed with water at the rate of 1 kg in 40 liters of water per acre. This means one CPP pit should be enough to cover 40 acres. It should be stirred for at least 10 minutes as this encourages good bacteria development. For larger areas the amount of liquid can be stirred in a 200 liters drum with tripod stirring arrangement or with the flow form for 15 min before using.

2. It can be sprinkled or sprayed over the land. It is sprayed on to trees or foliage, it should be first strained through a fine mesh.

**Intended Benefits:**

1. It will also contain a wide range of beneficial fungi and bacteria and growth promoting hormones, which can be very helpful in many areas of agriculture and horticulture. It has a wide range of uses.

2. Ground spray at 1kgs per acre CPP to 40 liters of water. Soak overnight prior to application, stir for 10 minutes, if necessary strain through a cotton cloth, and spray as required.

3. Stir with preparation BD500 at 25gms BD500 to 100gm-1kg CPP. Add during the last

4. 15 minutes of stirring.

5. Soil inoculant over land being converted to BD/organic management. Use on the soil around all fruit trees as a soil inoculant or soil conditioner. Use before any mulching is applied around the trees.

6. Soil or foliar feed on all crops at all stages except those close to harvest. It can be sprayed every 7 or 14 days. Best sprayed in the evenings. Excellent for all field crops, i.e. wheat, lucerne, paddy and potatoes. Also mangos, papaya, all tropical fruits and citrus, apples, stone fruit, avocados, grapes, coffee and tea. When used as a foliar feed on all fruit trees, it will strengthen the plants against possible fungus or insect attack. Apply every 14 days before and after flowering (Thakur & Singh, 2019).

## CONCLUSION

Cow Pat Pit (CPP) serves as an effective bridge between traditional wisdom and modern sustainable agriculture. Its formulation—comprising cow dung, eggshell powder, basalt dust, and biodynamic preparations—enhances soil biological activity and fertility while promoting ecological balance. The inclusion of biodynamic preparations (BD 502–507) infuses the soil with beneficial microbial life and trace minerals that improve plant vigor and productivity. Studies indicate that regular application of CPP not only improves compost quality but also enhances soil structure and water retention capacity, leading to improved crop yields. In a global context where soil degradation and synthetic input dependency threaten long-term agricultural sustainability, CPP offers an eco-friendly, low-cost, and efficient alternative for farmers. Its widespread adoption could strengthen the movement toward regenerative agriculture, positioning biodynamic methods as essential tools in addressing contemporary environmental and food security challenges.

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