Nutrient composition in *Parthenium* compost

In a study, it was found that in *Parthenium* compost, nutrients were twice more than in ordinary compost and near to vermi compost.

<table>
<thead>
<tr>
<th>Type</th>
<th>Nutrient (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Parthenium compost</td>
<td>1.05</td>
</tr>
<tr>
<td>Vermicompost</td>
<td>1.61</td>
</tr>
<tr>
<td>Farmyard manure</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Precautions

During *Parthenium* compost preparation, there is need of following precautions:

- **Pit should be in open and shady upland.**
- **Cover the pit with the mixture of soil, dung and husk.**
- **If you find fresh germination of* Parthenium* near the pit where weed was collected to fill up the pit, destroy them otherwise they may contaminate the compost after flowering.**
- **Check the moisture level in compost. If there is dryness in the pit, make a few holes and pour water to the pit and close the holes.**
- **During the process, the temperature rises up-to 60-70 °C due to which seeds are killed.**
- **While it may take about four to five months to prepare the compost in a warm climate, in cold regions, it can take more time.**

Benefits

- **Well decomposed** *Parthenium* compost has no harmful effects on crops, human beings and environment.
- *Parthenium*, a poisonous chemical of *Parthenium* is fully degraded during the formation of compost.
- *Parthenium* compost is a balanced nutrient manure which has more N, P and K than farm yard manure. Some essential micronutrients are also present in it.
- *Parthenium* compost is an eco-friendly manure that can be made by using low-cost inputs and its application in crop fields increases the fertility and productivity.

**Amount for use**

- **During basal dressing of the field, apply 2.5-3.0 t/ha.**
- **In a vegetable crops apply 4-5 t/ha.**

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Utilization of *Parthenium* to make compost

*Parthenium hysterophorus* commonly known as congress grass, carrot grass, chatak chandni etc. is a menace to farm lands, human beings, animals, environment and biodiversity. About 35 million hectares of land is infested with *Parthenium*. Previously, it was a problem of waste and barren land but now *Parthenium* is a big problem in every crop field, orchards and even in the forests.

Due to continuous and large scale use of chemical fertilizers, fertility of land is decreasing gradually. Therefore, compost and biofertilizer are a boon for soil health. We can make compost from abundantly occurred biomass of *Parthenium*. By making use of this weed, on one hand, we can increase the productivity of our crop land by weeding out of this harmful plant while on other hand, we can even earn money by making compost from this waste material.

**Farmers’ fear about Parthenium compost**

During interaction with farmers, it was found that farmers think that if they use compost made by *Parthenium* biomass, there will be more germination of this weed in their fields. Compost made by unscientific way is the reason to create confusion about the compost. During survey, it was found that compost made from flowered *Parthenium* plants by unscientific method was creating problems in the farmer's field. Studies conducted at Directorate of Weed Research, Jabalpur revealed that compost made with flowered *Parthenium* by NADEP or open pit or heap method, contained more numbers of viable seeds of *Parthenium*. In this study, it was found that 350 - 500 *Parthenium* seeds can germinate from 300 g compost made by NADEP or open pit method.

Compost made by scientific method was safe and did not have viable seeds. Hence it is good for soil health and crop productivity.

**Method to make compost from Parthenium**

It is always recommended to collect the *Parthenium* biomass before flowering for making compost either by NADEP or open pit method. But it is not practically possible to collect only flowerless plants because all the stages of *Parthenium* are available at any time due to non-dormancy of seeds, which may germinate on the availability of water. Therefore, farmers are bound to uproot plants of every stage of *Parthenium* during weeding in their fields. Following procedure can be followed for making *Parthenium* compost:

- **Make a pit of 3x6x10 feet (depth x width x length) at a place where water does not stagnate. Pit size can be increased or decreased but depth should not be compromised.**
- **If possible, cover the surface and side walls of the pit with stone chips. It will protect loss of essential nutrients of compost by the soil surface.**
- **If stone chips are not available, make soil surface compact.**
- **Arrange about 100 kg dung, 10 kg urea or rock phosphate, soil (1-2 qtl), and one drum of water near the pit.**
- **Collect all the *Parthenium* plants from your field and nearby areas.**
- **Spread about 50 to 100 kg of *Parthenium* on the surface of pit.**
- **Over this, sprinkle 500 g urea or 3 kg rock phosphate.**

**If possible, add Trichoderma viride or Trichoderma harziana (kind of fungi cultured powder), at the rate of 50 g per layer.**

- **All the above constituents will make one layer.**
- **Like first layer, make several layers till the pit is filled up to 1 ft height from the ground surface.**
- **Fill the pit in dome shape.**
- **While making layers, apply pressure by feet to make weed biomass compact.**
- **If there is no soil with *Parthenium* roots, then add 10-12 kg of loamy soil on each layer.**
- **When pit is full with above layers, then cover it with mixture of cow dung, soil and husk.**
- **After 4-5 months, we can get well decomposed compost.**
- **We can get 37-45 Kg of compost from 100 Kg of green *Parthenium* biomass.**

**Sievning of compost**

After removal of compost from pit, we may find some stems which give impression that *Parthenium* plants have not been decomposed yet. But actually, it is well decomposed. Spread this compost in the shady place to dry it. Coming in contact with air, soon the wet compost becomes dry and crumpled. Make a heap of this dry compost. If still thick, pieces of *Parthenium* stems are seen in the compost, beat them with the sticks. Sieve purpose that compost with 2 x 2 cm size mesh. For selling purpose make packets of 1, 2, 3 and 5 kg for kitchen garden and 25-50 kg for crops and horticulture.