

GOAT MANURE NATURAL COMPOSTING AT PLANT GROWTH

Submitted in partial fulfillment of the requirements for the award of

Bachelor of Science degree in Microbiology

By

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BONAFIDE CERTIFICATE

This is to certify that project report is the bonafide work of GOMATHI.S (38300005) Who carried out the project entitled “**GOAT MANURE NATURAL COMPOSTING AT PLANT GROWTH**” Under our supervision from

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DECLARATION

GOMATHI.S (38300005) Hereby declare that the project Report entitled
“**GOAT MANURE NATURAL COMPOSTING AT PLANT GROWTH**” Done by me under the guidance of
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Fulfillment of the requirements for the award of bachelor of science degree in Microbiology

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SIGNATURE OF THE CANDIDATE

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ABTRACT

This study investigated the Goat manure natural composting at plant growth with or without microorganisms. Composting was done for 3 months .changes in temperature ,PH during composting were consistent with generally observed with other composting system .the highest measure from goat manure compost was 60 C but much lower maximum temperature of 40 C. using goat in garden beds can create the optimal growing condition for your plants. The naturally dry pellets are not only easy to collect and apply , but are less messy than many other types of manure .there are endless uses of goat manure . goat manure can even be composting and used as mulch .Goat manure makes an excellent soil conditioner for new gardens. It improves the soil texture so it uses water more efficiently and allows more oxygen to reach the plant's roots. Goat manure, like all manure, offer a low cost, natural source of nitrogen and other nutrients. About 30 percent of nitrogen, 60 to 70 percent of phosphorus and 70 percent of potassium are available to the first crops .the dropping of goat contain higher nutrients than farmyard manure and compost. This an composting types of aerobic composting. The Composting microorganisms is *actinomycetes*.

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INTRODUCTION

Natural organic fertilizer comes from animal wastes and plants; for example, cow dung, sheep or goat manure, chicken droppings, urine, decomposed weeds and other plant, food waste and so on. In this article, we will introduce a guidance to compost goat manure for organic fertilizer.

One of the important aspects of goat farming business is having an effective waste management plan which reaps the benefits and reduces the risks caused by improper disposal of goat manure waste. The goat manure discussed here not just contains the urine and feces from goat, but also the bedding, runoff, spilled feed and anything else mixed with it. It is a way of decomposing goat manure waste to create a fine and rich human materials that is applied as a soil amendment and plant nutrients. Utilizing the goat manure properly – composting manure organic fertilizer can not only reduce the potential and benefit the crops.

According to investigation, a goat with about 100lbs can produce 4lbs of manure daily, the equivalents of about 0.06 cubic feet per day. Currently the global goat quantity stands at more than 1 billion head with 19 percent found in Asia and Africa, AND EU and EFTA region has assessment by the food and agriculture organization of the united nations. Goat manure nutrients come from the feed that the animals have eaten, so it should be no surprise that the excrement is an excellent fertilizer.

Goat manure contain protein, organic acid, cellulose, Aliphatics and so on, and its organic matter content is higher other livestock manure. Without fermentation, goat manure has various harmful bacteria that cannot be directly used on plants growing, or there would bring germs and parasite spreading.

What's worse, without proper disposal, goat manure would generate heat to consume oxygen in soil and burn seedling and root, causing serious damage to crops production. Therefore, composing goat manure composting fertilizer is an effective animal manure management tool that reduces volume, kills pathogens and weed seeds, and also improves soil health and fertility.

The goat manure natural composting is essentially good manure composting. finishing compost is dry and very rich. Set up your composting device. which is most cases consist of a bin – type of structure. Mix the manure in with other organic materials. keep the compost moist and occasionally stir the pile to mix everything together and increase airflow, which helps break it down. Depending on size, this can take weeks or months. Keep in mind that the smaller the pile, the faster it will de compost.

Using goat manure for fertilizer is the fact that the pelletized dropping allows more airflow into compost time as well. When to work the pile throughout fall and winter for spring application, or you can take out what you need for a given job until the compost finished.

Composting manure can add nutrients to soil, promote healthier plant growth, and increase crop yields without the use of harmful chemicals.

Although lower in organic matter than other traditional manure, goat manure natural composting has Lots of value in the plant growth. The next next day improve the plant growth. in fact, many gardeners find this source of nutrients for optimal soil and plant growth.

Goat urine as liquid waste is very potential to be utilized a liquid fertilizer because it contain the nitrogen, phosphorus, and potassium.

WHAT IS MANURE?

Manure is a mixture of feces and urine and can include other things such as bedding, spilled feedstuff, feathers, hair and soil.

It may also include wash-water from milking parlors or egg-wash facilities, and run- on water

Manure can be used as fertilizer source, soil amendment, feedstuff, bedding and energy source.

Manure from any source can cause water quality pollution if not managed proper.

AIM

Goat manure composting at plant growth.

OBJECTIVE

Plant growth in composting methods

MATERIALS

The organic materials

Grass clipping

Leaves

Straw

Kitchen scraps

Eggshells

WHAT IS COMPOST

Compost is a dark, crumbly and earthy- smelling from of decomposed organic matter. It is composting of organic material ranging from leaves and wood chips to house refuse. When broken down, these material become one of nature's best garden fertilizer and richest medium for potted plants. It is made up of waste material that is generally high in either carbon or nitrogen. While frequently referred to as yard and kitchen waste, it could be argued in fact it is not waste at all but a valuable resource for composting, the only real waste is not to recycle it.

An important issue with composting in small batches is when is it really compost while an over simplification, if you do everything right you can produce fresh compost in about 2-3 week in many of the fully enclosed compost bins. However if you want cured compost it will take at least another 2-3 months. You can empty your compost aside to cure for 2-3 months before using or for outdoor application, just spread/mix it on the ground and let it finish curing it place. For indoor application you might consider curing it outside for at least 30-days before using it in a living space. Curing time will very based on temperature and conditions.

COMPOSTING RECEPIES

Based on volume and listed in approximate descending order from hottest to least hot mixes;

Recips1

Dry leaves

Straw or shredded newspaper (black print only)

Manure

Fresh grass clipping

Fresh garden weeds

Food scraps

Compost starter/activator per 20lbs of material

Blood alfalfa meal per 20lbs of material

Recipe2

Dry leaves

Fresh grass clippings

Fresh garden weeds

Food scraps

Compost starter

Recipe3

Dry leaves

Food scraps

Fresh grass clippings

Finished compost and/or 1 cup compost starter /activator per 20lbs of materials

Recipe 4

Dry leaves

Fresh grass clipping

Finished compost and/or 1 cup compost starter / activator per 20lbs of materials

Recipe5

Dry grass clipping

Fresh grass clipping

Peat moss

Compost starter/activator per 20lbs of material

Coffee grounds per 20lbs of material(including filters)

Recipe6

Fresh grass clippings

Peat moss

Shredded newspaper or cardboard

Coffee grounds per 20lbs of material(include filter)

Food scraps

Compost starter/activator per 20lbs of materials

Blood or alfalfa meal per 20lbs of material

WHY COMPOST

Below are just a few of the excellent reason why so many gardens and horticulturists are taking advantage of tis time – testing practice.

- Ideal for growing organic herbs.
- Saves money on fertilizer and other store-bought gardening products.
- A good alternative to chemical fertilizer for parents, pet-owners and other concerned with safety and health.

- Easy, convenient way to dispose of garden refuse(often prohibited from landfills)
- Helps wards off pests and weeds without chemicals pesticides or herbicides
- Improve plants growth and quality
- Reduce erosion and nutrients run-off.
- Restore nutrients back into the soil
- Helps loosen soil and can be used as mulch.
- Break down clay based soils.

TROUBLESHOOTING COMPOST

SYMPTOM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Compost is not heating up	Small compost batches are harder to heat so more care is needed. Be sure you prepare and add material all at one time to create a single batch.	If you add your material slowly over time, you may need to live with cold composting.
	Not enough nitrogen in mix	Mix in fresh grass clipping , manure, blood meal or other material high in nitrogen
	Not enough oxygen	In small, confined batches oxygen can burn off very quickly when it does start to heat. Keep mix aerated
	Compost may be finished	If it look dark and crumbly and smells earthy. It may be done.

Most trouble can be avoided by following the recipe guidelines, having the right C/N ratio, keeping it moist but not wet, and keeping it aerated. Here are some possible symptoms, causes, and solutions;

GOAT MANURE COMPOSTING PROCESS

Parasite, hormones, and pathogens contained in goat manure can be reduced by proper composting. Odors are reduced and fly eggs die due to the high temperature occurring during microbial decomposition. Making good compost need the proper balance of carbon to nitrogen is critical to the composting process. The ideal ratio is about 30 parts carbon to 1 part nitrogen. Using whirlston compost turner machine to turner the compost pile will keep it aerated and speed up the composting process. Goat manure wastes typically take several days to two weeks to finish the compost in long open piles.

Windrow goat manure pile on the site, and sprinkle the special organic fertilizer fermentation agents on the surface of raw materials. In general, if the water content of goat manure is higher, people need to add moderate dry materials for mixing, so as to lower moisture. The moisture should be controlled within 60%-65% because too high (bed ventilation, slow temperature rising and foul smell) or too low (slow fermentation) are adverse to fermentation.

The goat manure pile should not be too small. For better fermentation, the height should be between 1.5m and 2m-3m, the length should be over 3m, depending on the model of compost turner.

Use the compost turning machine to tum and mix the goat manure pile, under the action of this machine, goat manure with large pieces can also be crushed into small pieces, saving the cost of crushing mill. Ture the pile once a day and fermentation process would be finished within 7-10 days





NUTRIENTS OF GOAT MANURE

PARAMETERS
C –ORGANIC
NITROGEN
PHOSPHOR
KALIUM
C/N RATIO
MOISTURE

SUPPLEMENTS TO COMPOST

ELEMENTS	FUNCTION IN PLANT	DEFICIENCY SYMPTOMS	EXCESS SYMTOMS
NIROGEN	Gives dark green color to plant. Increase growth of leaf and stem. Influences crispness and quality of leaf crop. Stimulated rapid early growth.	Light green to yellow leaves. Stunted growth.	Dark green. Excessive growth. Retarded maturity .loss of buds or fruit.

PHOSPHORUS(P)	Stimulates early formation and growth of roots. Gives plants a rapid and vigorous start. Is important in formation of seeds gives hardness to fall-seeded grasses and grain.	Red or purple leaves. Cell division retardation.	Possible tie-up of other essential elements.
POTASSIUM(K)	Increases vigor of plants and resistance to disease. Stimulates production of strong, stiff stalks. Promotes production of sugar, starches and oils. Increase plumpness of grains and seed. Improves quality of crop yield.	Reduce vigor. Susceptibility to disease. Thin skin and small fruit.	Coarse, poor colored fruit. reduced absorption of magnesium and calcium.

GOAT MANURE GRANULATING PROCESS

Goat manure without granulation is difficult and costly to transport. Additionally, the quality and nutrients content within unprocessed manure may vary greatly, making it difficult to properly treat soil and yield optimal results. Goat manure composting and granulating for organic fertilizer can not only assist in efforts to follow livestock waste disposal regulation, but also create new source of revenue, making it a win-win proposition. After composting, send the mixed goat manure raw materials into the granulation system. A professional new-type organic fertilizer granulator, Processing for spherical particle organic fertilizer. Then use the conveyor to transport granules into dryer, next entering the cooling system after drying process. the granulated organic fertilizer will be at room temperature when starting screening, and the particles would be packaged after meeting the requirements of screening machine. Those do not meet the requirement would be returned to granulation system, continue to granulate. The granulating process of goat manure create commercial organic fertilizer, which is easy to package, transport and sale.

MICROORGANISMS AND PARTICLE SIZE – PRODUCTION A HIGH QUALITY YIELD

Compost mix is a direct result of what you put it. Better quality and varied organic matter yield higher quality compost. Practically anything growing in yard will compost. As they all contain carbon and nitrogen in varying degrees.

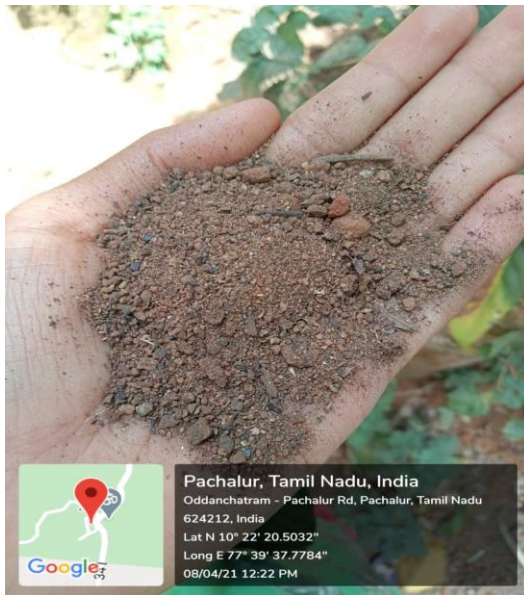
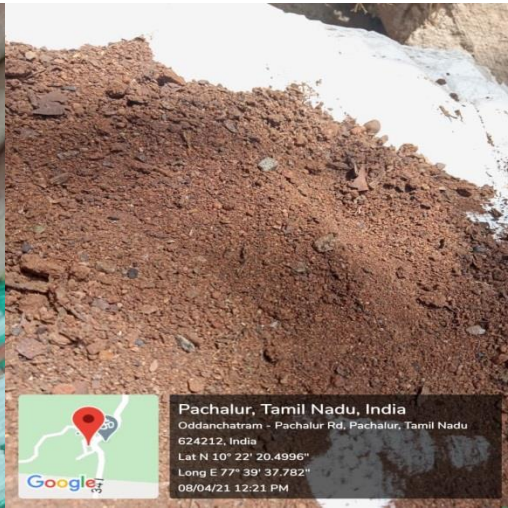
Microorganisms use the carbon as an energy source and nitrogen contains the raw elements of protein to build their bodies. You might say the nitrogen eats the carbon and in the process produces heat based on the speed they do it.

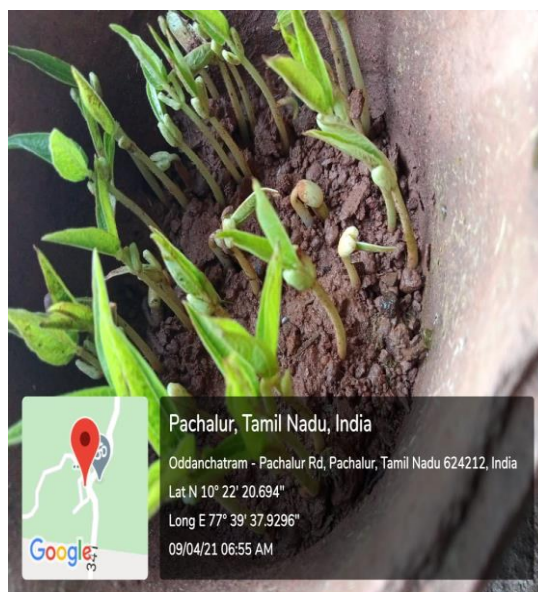
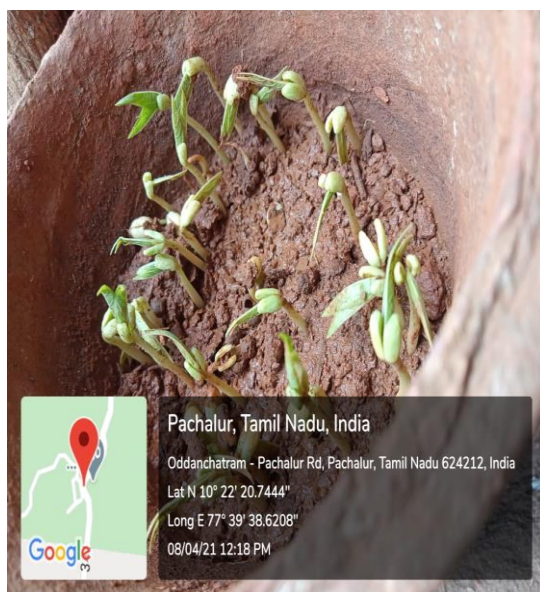
Particle size plays a role in any composting effort, but is even more important in small batch composting. In generally ,the smaller the particle size the greater the surface area of the materials is so the faster and more completely it will compost as you increase the surface area of the materials you are providing more access for the microorganisms to do their work.

BENEFITS OF GOAT MANURE COMPOSTING FERTILIZER

- Compost with other animal manure, goat manure fertilizer has low nitrogen content that won't burn the plants but high phosphorous and potassium content that is great for plant growth and soil fertility.
- The organic matter in goat manure fertilizer is valuable because it makes soil easier to manage, less likely to erode, and more likely to absorb water.
- Composted goat manure can be applied to agriculture field as a fertilizer, added to improve soil structure so as to help hold water and air, contributing to crop yield and agricultural product quality significantly.
- Composting goat manure for fertilizer can greatly reduce environment pollution, lower the harm to people health and economic profit.
- Improve water retaining capacity of the soil.
- Makes the soil porous and exchanges of gases become easy
- Improves the texture of the soil.
- Replenishes the soil with necessary nutrients.
- Improve transportability
- Reduces odour
- Pathogens are destroyed
- Reduce weed seeds.
- Can be applied to land when convenient.
- Improves nutrients qualities
- Nutrients from compost are released slowly and steadily.

- Decreases pollutants







CONCLUSION

There are many benefits for you and your community if you compost at home. Composting reduces trash disposal and saves limited and fill space and fuel to transport refuse. When gardening, it provides valuable nutrients and improve the quality of soil. Wet clay soils drain better and sandy soils hold more moisture when amended with compost. Compost encourages the growth of earthworms and other beneficial organisms whose activities help plants grow strong and healthy.

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