PROGRESSIVE FARMING

Preparation And Application Of Compost

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Introduction: The addition of compost or artificial farm yard manure from organic matter has never been a generalized farm practice in the Philippines. Although its effects in improving the physical, chemical and biological properties of the soil and increasing crop yields are known, yet most of our farmers as well as gardeners fail to use compost in renovating the depleted soil. From field observations as well as literaure on the subject, it appears that the preparation of this artificial farm yard manure from agricultural wastes and city garbage is not common in this country.

According to literature, Switzerland is credited as the originator of making compost. Once upon a time every home in Switzerland either urban or rural had a compost pit as it was a national requirement to every family home. Later, the system spread to other countries of Europe through immigration and colonization.

Definition: Compost is defined as a mixture of earth along with every sort of decayed organic matter or refuse.

Systems of composting: There are three systems known; namely, the shed, the tomb and the pit. The first two are considered standard types, and they are used by the most civilized countries of the world. The third type which the open pit system is a practical one, and is being adopted gradually nowadays by practical farmers and gardeners in this country. As the third type is the most economical of all, it will be discussed lengthily in this article.

Procedure of preparing the compost by the open pit system: Select a place in the garden, on the farm, or in the orchard, preferably under a shade where you will not grow food crops. A shady place is preferable because shades foster quicker fermentation. The place should be high enough so that it will not be flooded during the rainy season. It should be located at the side, corner, or rear of a garden or farm. The size of the pit depends upon the availability of garden refuse or agricultural wastes. The recommended one is 3 meters by 4 meters for a large size pit and 2 meters by 3 meters for a small size pit. Dig the portion selected to a depth of two to three feet. The depth of course depends upon the water table. If the water table is shallow or near the surface of the soil, the excavation should be shallow, and vice versa. This is an important factor to consider because the presence of water in the pit will interfere greatly in the decomposition of the organic matter to be dumped into the pit. A clay wall of about two to three feet high may be constructed around the pit to prevent the compost materials from falling off and avoid leaching. See the first sketch.

Dump the garden refuse into the pit to a foot high as the first layer. The garden refuse before dumping it should be sprinkled uniformly with water in order to hasten the decomposition. Put on any animal dung or excrement, two to four inches thick, covering entirely the first layer. Earth may be substituted with animal dung if this is not procurable in the locality. Wood ashes can be mixed with animal dung. Ashes, besides supplying the soil with potash, are also deodorizers. They relieve the foul odor from the pile. For the second layer, place another sufficient quantity of agricultural wastes to a height similar to the first layer. See to it that they are also moistened with water before dumping them. Animal dung and ashes should be alternated after every layer of garden wastes. Continue building the pile until it reaches a height of six feet. Make a shallow concave surface at the top of the pile to hold moisture when it rains. (See the first sketch.) The rain water accumulates in the basin-like top which percolates and ramifies through the different parts of the pile; thus moistening uniformly the entire pile. On the top of the whole pile, spread enough soil two inches thick to serve as covering to prevent drying up of the compost materials within. It would be better if a vine (squash or cucumber) is allowed to creep on the top of the pile to minimize the evaporation of water from the heap. (See the second sketch.) Under field or open air conditions, the compost is ready for use within four to five months. If there is an abundance of garden wastes around, it is preferable to build a new pile rather than to exceed the prescribed height which is six feet.

When the compost is used to fertilize a large area, it is advisable when taking it away, to leave a thin layer of the old compost on the ground. Then build up the new pile on this residue. This residue will serve as a starter and help greatly in the early decomposition of the agricultural wastes to be deposited later. All sorts of plant refuse free from pests and diseases, chaffs from threshing, kitchen garbage containing peelings of fruits and chicken offals, road scrapings free from stones and sticks, seaweeds, hedge trimmings, slaughter house refuse with horns and hoofs, and bone meal can be used as compost materials.

Uses and application of compost: It is recommended that compost should be used only in backyard gardening owing to limited quantity that can be produced. For practical application, for every garden plot with an area of 10 square meters, use six to ten petroleum canfuls of the compost. Mix it thoroughly with the soil by using a spading fork.

Compost is used also to conserve soil moisture. It increases the moisture-holding capacity of soils and prevents gullying, washing away and baking.

Additional information: 1. Different periods of the decomposition of compost materials under laboratory conditions as experimented by Mr. Isidoro Romero, College of Agriculture, University of the Philippines—

a. From 81 to 85 days—straw with soil
b. From 96 to 100 days—straw with ash
c. From 78 to 84 days—straw with carabao dung
d. From 75 to 79 days—straw with horse dung

2. Mr. Ehrenfried Pfeiffer does not recommend the use of concrete, grass,

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Mechanizing...

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The products of the farm are not yet sufficient to feed the ever-growing inhabitants.

Modern farm motors and power machinery have the definite advantage of giving better quality of work and of doing the job in much less time then by the man and animal labor. By increasing the area under cultivation with the use of mechanized units, it is possible to supply food to our millions of population plus food for additional millions outside of the Philippines.

The use of carabaos and of bullocks as the main source of native power has the disadvantage of being slow, weak, and subject to attack of pests and diseases. With mechanized units unnecessary delays can be minimized or ultimately cut out, and land preparation, planting, cultivating, harvesting, threshing, preparation of finished agricultural products, and delivery to market will all be done on time.

Although estimates made in the College of Agriculture always indicate better economy with the use of modern implements it is difficult to figure comparative costs owing to different rates of local wages and of unfixed prices of motors and machinery. In large sugar centrals and in Koronadal Valley where power-driven machinery have been found to be an absolute necessity and where no other tools are used or called upon to do various heavy farm work for so many days in the year, the utilization of modern farm mechanical equipment proved desirable and profitable.

MECHANIZATION PROBLEMS

There are thousands and thousands of individual farmers in the Philippines at present who consider the native plow the one and only tool that seems to be able to do good tillage work on their small farms. The College of Agriculture has gathered plenty of local data to prove the suitability of tractors and of some agricultural machinery in raising some crops. Some big sugar centrals, the Government owned Land Settlement Administration at Cotabato few big landed estates, and the Bureau of Plant Industry have demonstrated to some extent the efficient and profitable use of some of some mechanized units in large tracts of land. Where men and women are still to be had for planting and harvesting by hand, where method of farming, specially that for lowland rice, has to be carried on in small plots of well puddled mud or on limited areas, and where farmers are still available to work with the meager returns that they get from their farms either as part owners or as tenants, it will not be an easy matter to generalize the use of mechanization. A very thorough process of proving, approving, disapproving, and improving of various farm power and farm machinery will still have to be carried out extensively. What types of farming can best be mechanized, what size of land and machines must be secured to suit various farm conditions, what engines and devices will give the most efficient and profitable return, and what will be the ultimate effect of mechanization to the mode of living, happiness, and welfare of the Filipino people, are the problems that must be well considered in relation to the mechanization of Philippine agriculture.

FOOD FOR THOUGHT

(Reprint)

"The progress of the Western civilization is marked by the improvement of the plough. The pre-historic plough was the crooked stick drawn by man. It was merely a scratching tool. Every man was his own draught animal Somehow the farmer and his family could manage to eke out their existence with this crude method of tillage. In India too we find reference to this kind of tool in the hands of Balaram, the brother of Sri Krishna who is considered to be the father of Indian agriculture, Balaram used to carry a plough as his emblem and was also called by the name of Haladhra or the carrier of a plough.

"In ancient Egypt a form of hoe made from a crooked stick used to serve the purpose of a plough.

"The Roman plough which Virgil describes used to be made of two pieces of wood meeting at an acute angle and plated with iron.

"In the middle ages no improvement of the plough was noticed. The Dutch were the first people to greatly modify the Roman plough. They first conceived the fundamental ideas of the modern plough. They made their plough with a curved mouldboard, a beam and two handles. In England in the beginning of the eighteenth century the Dutch plough served as a model...

"In America after the Revolutionary War the English plough was gradually replaced by ploughs made in the United States. Among those who gave first thought to the improvement of the plough, the names of Thomas Jefferson, Daniel Webster, Charles Newbold and Jethro Wood are prominent...

"The Indian plough is a wedge-shaped toothed implement provided with one handle, a long wooden beam and a long iron pointed share all attached to its wooden body. It stirs the soil all right but inverts it very little. It closely resembles a medieval plough. It takes much time and labour to prepare a seed bed with this plough...."

—The Allahabad Farmer, (India)

Preparation And...

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or turf as floors of the pit. He believes that these materials are obstacles for the earthworms to get access into the compost materials. Earthworms and microorganisms in the soil aid greatly in the decomposition of the compost materials. Earthworms provide fertilizing substance when they die after performing humus formation activity.

3. The maintenance of the proper amount of moisture is one of the most important requirements of the com-

4. The fermentation occurring inside of the pile is a life process, hence the pile must be allowed to breathe. and it should be well aerated.

5. A compost pile that is too dry requires watering. Dry compost gets hot very easily and fermentation is destroyed.

6. The guiding principle is the fact that the compost pile itself must be treated as a living organism because of the bacterial content and its internal fermentation.

7. In the case of a big compost heap, turning the pile is necessary. In turning, the outside of the orignal heap should be made the inner part of the new, and the former inner part now becomes the new outside. It results into a uniform decomposition of the compost materials in the same heap.

8. Weeds should not be allowed to grow on the compost pile. A growth of grass on the pile is harmful because it prevents the air from coming into the pile due to its thick root system, thus precluding fermentation.