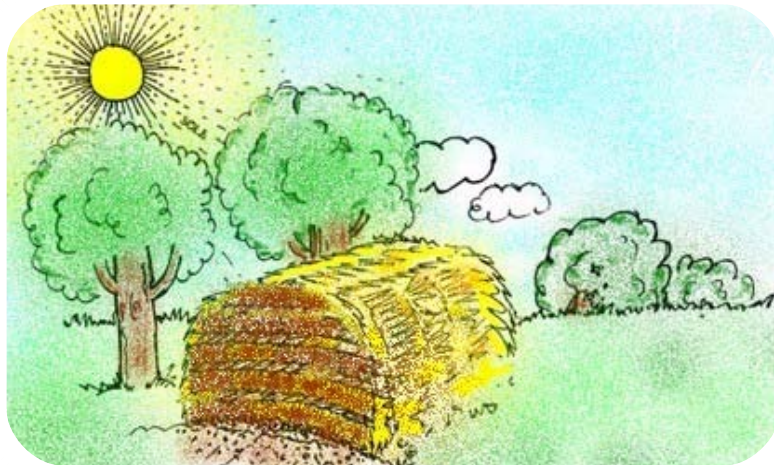


**FERTILISATION**  
**BIOLOGICAL AND SPIRITUAL**

**OR**

**WAYS TO BRING LIFE TO**  
**THE EARTH AND PLANTS**



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# **- FERTILISATION - BRINGING LIFE TO THE EARTH AND PLANTS**

## **1) INTRODUCTION**

By fertilisation we mean all activities that improve soil fertility and ultimately enhance the life of plants so that they may grow and bear fruit.

Ideally the fertiliser should know the needs of the plant in a profound and “intimate” way. The plant is sustained by two basic streams of nutrition that we can define as “vertical” and “horizontal”. The vertical stream brings the process we will call “cosmic nutrition”, while the horizontal is linked to the earthly fertilisation.

The plant is a living organism so it needs influences that support life, because life can only arise from life. It is up to us to identify the origin of this life and learn how it reaches the plant. In our work we will use the insights and terminology of Anthroposophy, the investigations and elaborations of Rudolf Steiner from early last century.

*anthroposophical  
science of  
the spirit by  
Rudolf Steiner*

## 2) ORGANIC MANURE

The process that transforms dying organic matter into vital substance works best in a well-made compost heap. The same processes of transformation that occur in a compost heap are found in the woods, where the leaves fall to the ground to be decomposed by fungi and bacteria and become that wonderful product that ultimately becomes humus.

In this transformation we can see a clear pattern: the dead leaves fall in autumn and are transformed in the humid/nocturnal environment of wintertime ready to support new life in the spring/summer. We can all feel this when we take walks in the forest and the intense aroma of humus gives us a feeling of renewed life. In this regard we recall that Goethe said that *death is the way for life to produce new life*.

On our farm we mainly find manure and other organic waste materials that can be transformed and made to produce new life. Since the life of a plant is intimately linked to the life of the soil (the plant grows, develops and reproduces through life present in the soil), only a properly fed and healthy soil will produce healthy and productive plants.

*chemical  
fertilisation*

Chemical fertilisation comes from a very narrow interpretation of this process as it is only linked to the “specifics” (nitrogen, phosphorus and potassium content) and loses sight of the “general” - of life. It does not bring any real life to the plants but only the components, the substances, that life uses to support its expression.

*transformations  
and  
transmutations*

Every time there is a living biological process chemical transformations and transmutations take place. During transmutation there is not just an exchange of electrons in the atoms involved but also the interpenetration of the nuclei. These inter-nuclear combinations are particularly common in the compost heap because of its great vitality.

The compost heap becomes like a living organism capable of transforming and developing many units of nitrogen during the transformation and transmutation of the substances present in it. We will try to help and direct this process.

To get a good decomposition of organic materials, at our latitudes the compost heap should be built above the surface of the soil, so that *aerobic* internal processes are favoured. Pit composting is not recommended because among other things the lack of oxygen makes the prevailing transformation reactions anaerobic leading to the loss of nitrogen in the form of ammonia. Building an aerobic compost heap in the shape of a truncated pyramid increases its vitality-ethericity. The great productivity of the “compost heap to garden bed” technique is the ultimate test in intensive horticulture.

In this work we will not cover all the compost heap-building techniques that can be found in many good manuals, however, we will give indications that can help us grasp the basic fundamentals and possible variations in its construction.

The compost heap **should be placed in a slightly elevated area** like on a ridge and not in a depression, in order to avoid stagnant water pooling below the pile and preventing earthworms from entering the pile (Fig. 1).



*fig. 1 Setting up the compost heap*

Before constructing the compost heap, the surface of the soil should be loosened slightly. The compost heap should be located by a row of trees that can protect it from the midday sun, so that an internal humidity level of about 60% can be maintained.

*controlling  
the  
humidity*

To see if the compost heap has the right consistency, (ie if it has the right humidity,) take a handful of material from within the compost heap and gently squeeze it into a lump in our hands. If it remains coherent after we open our hand and continues to be so even after prodding it with a finger the humidity is too far above 60%. If it crumbles apart gently on prodding then it has the right humidity. If it had a humidity too far below 60% the lump would crumble when we opened our hand.

*the elder  
and nitrogen*

A compost heap that sits in the sun can dry out too quickly and consequently the transformation phase does not happen in an optimal way. Observation teaches us that if the compost heap is built close to some elder trees then the nitrogen percentage increases because the elder promotes nitrogen fixation in the compost.

*layer-starter*

After we have raked the ground ideally we would begin with a first layer of good quality mature compost or onions skins, potatoes, and some coffee grounds to attract earthworms. If our compost heap will be in the same spot as a previous heap then we do not need to start with an inoculant.

## **2.1 PLANT-BASED COMPOST HEAP**

*plant-based  
compost heap*

In the plant-based compost heap we start by adding layers of branches (well chopped), grass clippings, dried leaves, garden and kitchen waste, etc. alternating with fine soil (10% of the total weight). Then we add some bentonite (5-10 kg per cubic meter of organic material). Bentonite is the clay most commonly used in construction. The best [in Italy] is an airy type that comes from Sardinia as it has a greater absorbency. With its absorbing ability, bentonite reduces excess moisture in the heap and also has the function of putting all the processes in motion.<sup>1</sup>

*bentonite*

*Calcified seaweed*

*Lime* should be added to the compost heap as well (also at around 5-10 kg per cubic meter). Lime draws everything to itself and there will be a different role if it is slaked or quick lime. *Calcified seaweed (Lithothamnium)* is another form of lime that has a regenerating action.

*choosing the  
type of lime*

*Hydrated or slaked lime* ( - hydrated with water and thus with its absorbing ability partially satisfied) is already “slaked” in regard to the etheric because water

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<sup>1</sup>Note that the function of clay for the plant is to play the role of a regulator of the ascending and descending fluids. See our work “Nine meetings with biodynamic agriculture” by the Author).

is its main physical representative. The absorption of water means the lime is “full” of etheric forces, the forces of life. Quick lime, however, has not undergone the process described above. For this reason it retains a greater absorbing capacity and attracts the etheric to itself.

Hydrated lime being already “satiated” with etheric forces is hungry for and thus attracts soul or astral forces. A plant-based compost heap, because it is already rich in etheric forces, requires these astral forces so slaked lime should be particularly good for its transformation. Lime not only attracts the etheric world, but the “imponderables” in general. It is important to retain this influence within the compost heap as it would normally be lost. Nitrogen for example, is extremely volatile and has a tendency to escape from the compost heap: lime reduces that loss.

*the action of  
lime on the  
“imponderables”*

We consider protein to be the basis of life and the four elements are always represented in it: Carbon, Oxygen, Nitrogen and Hydrogen. In protein, we can see two “axes”: the first H-O forms water which is the basis of life, and the second C-N forms cyanide, which is deadly poisonous. These four substances correspond to the four elements of Greek philosophy (Earth, Water, Air, Fire) and four steps of evolution of the solar system (old Saturn/Hydrogen, old Sun/Nitrogen, old Moon/Oxygen, Earth/Carbon).

*protein and the  
four elements*

During a transformation processes in which oxygen is lacking, carbon tends to bond with hydrogen and form methane, and nitrogen bonds to hydrogen forming ammonia. Methane and ammonia are volatile so in an anaerobic (without oxygen) transformation there is a loss of nitrogen in the form of ammonia and carbon in the form of methane (see Figure 2). On the contrary in the aerobic compost heap oxygen is present and allows both carbon and nitrogen to bond and form CO<sub>2</sub>, nitrite and nitrate, which are all important for fertilisation.

As we said, in the fundamental constituents of protein we can see two “axes”: the first H-O forms water, which is the basis of life (the axis of life), and the second C-N creates cyanide, which is deadly poisonous (the axis of death). Life and death are thus intertwined within protein. What did Goethe say?: “*Death is the way for life to produce new life!*”

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