

# Barrel Compost

## Bringing Harmony & Balance to the Farm

by William Shock & Lisa Shock

Barrel compost is much more than just another way to add organic matter to the soil. Understanding the principles behind barrel compost is fundamental. This will allow you to bring harmony and balance to the farm. Barrel compost could be thought of as the medium where “biodynamic compost” meets “biodynamic preparations.” In this article we will be taking a closer look at the primary ingredients: basalt, eggshells, cow manure, compost preps, and nettles. The term *barrel compost* was coined by Maria Thun to describe a very special type of compost. Originally prepared in a barrel, hence the name, it has since been adapted to preparation in a pit and renamed Cowpat Pit, or CPP compost in Peter Proctor’s book *Grasp the Nettle*. We prefer to use the original term, however.

### USES OF BARREL COMPOST

One highly popular and widely reported application of barrel compost is on fresh manure of all types to stop the noxious odors and preserve the nutrients. We have tried this with remarkable success in our own poultry house. Many farmers apply it to the field just after the cows have been moved, also running a harrow across to scatter the droppings, and following up with additional applications of homeopathic horn manure eight to 10 days later. This has resulted in up to 33 percent increase in production for fields thus treated. One farmer was able to double his hay production by using barrel compost weekly on the field and also to pretreat his stable manures and compost heap.

Barrel compost is ideal for the grower trying to become more self-sufficient since one batch will treat hundreds of acres or can be stored for many years. We collect or make all the ingredients locally on our farm, so the expense is minimal.



*A no-frills pit for making biodynamic barrel compost.*

According to Nik Kramer’s article “Barrel Compost with Maria Thun” (*Biodynamics*, Winter 2004-2005), the origins of this technology are rooted in the atomic bomb tests of the 1950s. Thun was collaborating with Ehrenfried Pfeiffer to find a remedy to radioactive fallout, and to counter radioactive strontium, they looked at calcium sources. In part this was due to experiments at the Institute at Freiburg during the 1950s where it was found that plants growing on soils rich in calcium had less uptake of strontium 90 than in nearby sandy soils rich in silica. There is a well-known relationship between calcium and strontium in bone formation, so this was a logical deduction.

Next they field-tested nine potential calcium remedies to see if any would offer the plants protection via treating the soil. Of those nine calcium sources, only the eggshells and basalt were effective. They also tested Rudolf Steiner’s biodynamic preparations, but the preparations alone were not effective — this is an im-

portant point that was highlighted after the Chernobyl disaster, when only the biodynamic farms using barrel compost were protected from radioactive damage. For those unfamiliar with Steiner’s approach to agriculture and the special “preparations,” we recommend his book *Agriculture*. Briefly, you might describe these compost preparations as teaspoon-size doses of specially prepared plant materials that work on the whole farm in a homeopathic manner.

To help explain more deeply the science behind barrel compost and its uses, we will offer a few insights into each of the components.

Let us start with my favorite ingredient: basalt. All the benefits basalt imparts are also the benefits from using Barrel compost, however the dosage is the difference. With barrel compost we can use homeopathic dosages to achieve the same results as truckloads of plain basalt. The uses of basalt in agriculture are not new. In 1937 a Swiss gentleman by the name of J. Utermohlen published

his findings on basalt meal and ever since there has been a love affair with basalt meal. Many growers have used basalt and basalt dust to revitalize soils and forests, sometimes mixing it with cow manure.

Following are some of the benefits of both basalt and barrel compost:

- Improves soil tilth and workability.
- Provides essential nutrients to the soil & plants.
- Helps with formation of humus, especially in clay soils.
- Helps warm the soil in early spring.
- Improves the paramagnetic and conductivity qualities of soil.
- Neutralizes radioactive fallout on soil and plants.
- Remedies damage by toxic farm chemicals.
- Has a nitrogen preserving ability on fresh manures.
- Basalt meal or barrel compost is especially useful in light or sandy soils.

As we mention above, after the Chernobyl nuclear accident that contaminated a large area, local biodynamic farms using barrel compost were protected, provoking much interest. Russian scientists were able to demonstrate that the addition of basalt alters the molecular-atomic lattice. This has a beneficial effect in neutralizing the ionizing radioactive fallout. These findings (demonstrated in a laboratory setting) agreed with the earlier findings of Maria Thun in the field, and demonstrate the importance of basalt in the remedy.

More intriguing are the implications that the basalt in barrel compost could play an important role in healing soils contaminated in another manner. Amerigo Mosca, winner of 1958 Brussels World's Fair chemistry prize, observed that toxic farm chemicals act similar to nuclear radiation damage — he called it *radio-mimetic*. Some people feel, as we do, that barrel compost can also mitigate some of the damage caused by these toxic chemicals.

Maria Thun recommends using basalt particles of 0.2 to 0.5 millimeters in size (like fine sand) — when ground to a fine powder, she felt, it was too difficult to mix and would be sticky and form clumps. We have found that while it is

more difficult to mix the powder, if you take the time and effort to mix it well, it also forms a wonderful product.

Steiner also gave indications of the unique importance of basalt. In his notes on geology (see *The Living Earth* by Walther Cloos), Steiner states that basalt precipitated out of the living earth during the time when the planet was far more vital due the increased growth forces and processes. This environment allowed all four ancient elements (fire, air, water, earth) to be more closely united in “a harmonious whole” within the basalt. This concept is very important to understanding basalt's special place in the mineral kingdom.

Dr. Steiner was particularly interested in a certain type of basalt formation called *pillar basalt*. This basalt has condensed in tall five- to eight-sided pillars and demonstrates a higher paramagnetic reading and increased hardness than other forms of basalt. Steiner explained that the pillar formation is not due as much to crystalizing forces as it is to the action of the sun on the mineral. In other words, the sun force drew the basalt upward into pillars, just as today the sun draws the leaves and stems of plants in an upward direction from the earth.

Here, according to Steiner, is the key to freeing the earth from certain detrimental forces that he called “excessive moon forces” (see George Adams & Olive Whicher, *The Living Plant & the Science of Physical & Ethereal Spaces*). Steiner also postulates that all minerals desire to evolve into plants, and in pillar basalt we see minerals in a transitional state that is somewhat plantlike already. We feel the ideal basalt for barrel compost is pillar basalt, and luckily for us, it is easy to identify when collecting in the field.

Eggshells are the other substance found in the original study to mitigate radioactivity. Dry chicken egg shells contain about 95 percent calcium carbonate. Approximately 1 percent is made up of phosphorous, magnesium, sodium, potassium, zinc, manganese, iron and copper. The remaining 4 percent is an organic matrix with calcium binding properties. It is this all-important organic matrix that determines most of the strength of the eggshell. The organic ma-

trix organizes the size and shape of the crystalline (calcium carbonate) components. The ideal ordering principle leads to long pillars with specialized zones of organic matrices for the strongest shells. Gary D. Butcher and Richard D Miles explain in “Concepts of Eggshell Quality” ([www.afn.org/~poultry/flkman4.htm](http://www.afn.org/~poultry/flkman4.htm)), “The shell to organic membrane relationship is also critical to good shell quality. . . . Sometimes a thinner eggshell is stronger than a thicker eggshell. The reason for this is due to the shape and organization of the organic and inorganic components of the shell.”

Let's look at just how this might happen. The mineral part, calcium carbonate, can be found in nature in several forms. Usually calcium carbonate is found as calcite, a relatively soft crystal, (hardness of 3, specific gravity of 2.71) in rhombohedral forms — but deep in cavern deposits, hot springs and lava flows, something unusual occurs to form aragonite. Aragonite minerals are calcium carbonates that differ in structure from the usual calcite, in that the calcium is shielded by nine rather than the usual six oxygen ions. This added shielding is usually only found with larger ions such as barium, strontium or lead, but when the much smaller calcium ion



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*A specially designed basalt pit for biodynamic compost preparation.*

forms a carbonate under those special conditions with the nine oxygen ions, it forms cyclic twins, and under ideal conditions these then form hexagonal pillars called aragonite. Aragonite is harder and denser than ordinary calcite (hardness of 3.5-4, specific gravity of 2.94-2.95). At lower temperatures and pressure it changes to ordinary calcite in a relatively short time.

Perhaps the long pillars of calcium carbonate found in the organic matrix of egg shells are actually idealized hexagonal pillars of aragonite or something resembling it. The organic matrix might somehow allow the calcium to form these strong, dense hexagonal pillars that resemble in form the pillars we also see forming in basalt. We can thus see where basalt and eggshells have something in common — and perhaps the answer to how they work as a biodynamic remedy lies in this common form.

In the original barrel compost recipe, duck and goose eggs were used as well. These eggs are even stronger than chicken eggs and thus probably show even greater organization of the calcium carbonate (calcite) into an aragonite-like substance. When grinding eggshells for barrel compost, it is suggested that ideal particle size should be small, but not a fine powder. There should be very small flakes of shell for the best results. Of the common farm birds the waterfowl

and guinea have stronger eggs than the chicken, and they may work even better than chicken eggs in barrel compost.

Maria Thun explained that the calcium in the inner skin of the eggshell is a “young” calcium. This is a very important concept in explaining the role it plays to revitalize matter. What does it mean when we use the term *young* to describe a mineral? These are minerals in a living state or that have just been transmuted from another element. This occurs in several manners — in eggshell formation it is a living process where the bird converts silica or magnesium into calcium. Ever since Prout demonstrated the increase in calcium during development of a chick, researchers have searched to explain its source. We now know it is converted from other elements that decrease in the developing embryo. This is termed *biological transmutation* to distinguish it from transmutations that occurs in non-living systems (see *Biological Transmutations* by L. Kervran). This, then, is an example of *young calcium*.

### **COW MANURE & PREPS**

In biodynamic farming, the cow manure and preparations are considered the “carrier” for the basalt and eggshells. The preps help bring the decomposition of the manure into harmony and make the soil and plants receptive to the

formative forces. We might think of the preps as the bridges or maps to and from the physical and etheric/astral realms, enabling the forces to flow harmoniously.

Cow manure, in turn, is well known in biodynamics for its role as the most highly digested plant material. The cow is the animal that corresponds to the metabolic pole geared to digestion — this is the opposite of the bird, which digests very little. What the bird eats can pass through its system in minutes, but cows eat, ruminate, chew cud, digest more, and only after a long time (up to several days) is manure produced. The complex and highly evolved digestion with four stomachs accounts for most of the mass of the cow’s body.

In biodynamics, with both bird and cow products, the animals (astral components) are represented in their polarity, and the cow manure (because of its highly digested form) is the material that works to create a brain-like substance in the soil, enabling it to become receptive and sensitive. Of course the manure used should always be of the highest quality to obtain the best results. Ideal cow droppings should have a solid form without too much moisture. The cow should be lactating and fed quality (organic) feed in the form of pasture or hay to achieve the best manure — but don’t let a lack of prime manure stop you from making barrel compost! We have made wonderful barrel compost using less-than-optimum manure.

### **NETTLES**

Dr. Steiner revealed “a great secret,” namely, “All healing forces have their origin in the rhythmic system.” In the plant this comprises the stem and leaves; in the farm organism it is the humus — nettle harmonizes both. A number of biodynamic practitioners (including us) feel that nettles greatly improve barrel compost. We use up to 50 percent nettles by volume. Nettles do have an animal-like quality in their odor, and their sting. They also contain histamine and formic acid — both are found in animals but are rare in plants. According to biodynamic concepts, plant poisons are due to “the Astral” working too strongly into the plant. In the nettle, these excessive

astral forces have been controlled via the iron and zinc and thus “tamed,” resulting in formic acid, a substance that helps to bring dead materials back into the living stream. This puts the nettle in a very special place, one that makes it a universal plant for the rhythmic system of man, plants, animals and soils. It is the one plant for which Steiner said there was no substitute in the making of the preps, due to its unique position.

On a more physical level, the nutritional profile of nettles shows it to be very high in calcium and magnesium and high in iron. In basalt, the main minerals are augite and pyroxene, both of which are rich in calcium, magnesium and iron. The high calcium, magnesium and iron in both basalt and nettles reveals another clue as to why they work in a complementary manner. Nettle is also described in *Biodynamics* as a carrier of the iron radiation that detoxifies and controls the calcium process.

### THE BARREL OR PIT

If a barrel is used, the bottom should be removed, and as with all compost, the soil with which it is in contact should be of the highest quality. Thun once tried to make compost in a barrel where the bottom boards had not been removed. It failed to turn into compost until she used an iron bar to smash the boards and allow soil to contact the material. We have also experienced failure when the soil under the barrel was dead subsoil, showing the importance of good quality dirt at the bottom of the barrel. Any soil removed should be banked up against the barrel to help elevate it from the surrounding soil.

Our best barrel compost so far was made in a pit constructed using pillar basalt rocks. The compost is covered to prevent the sunshine or excessive rain from entering the barrel or pit, and sometimes a damp burlap sack is used to keep the material from drying out. If

the climate is very dry, it may need some water occasionally to keep it moist.

The barrel itself may need to be cleaned if it had been used previously for items with preservatives such as pickles or olives or if it had wine or whisky, as these leave residues that interfere with the process. To clean the barrel, first let it soak with water for a few weeks. Follow this with a good scrubbing of wood ashes. Finally, rinse with nettle tea made of one quart (approx. two pounds) nettles in ten quarts water. Let the barrel sit until a violet color appears, indicating fungi are now growing on the wood. Storage can be simply a matter of leaving it in the pit, where the earthworms will find it. We have noticed it just seems to get better as the earthworms work it. You can also place it in a pottery jar and store in a cool, dark place, such as basement or cave.

### MAKING & USING BARREL COMPOST

The spring is always the best time to make every type of compost including barrel compost, but it also can be started at any time and only takes two months to mature. As with all digestive processes, the waning moon — the time from full moon to new moon, when the moon is decreasing — is a good time to start the process.

Ingredients:

- About 50 liters (12.5 gallons) fresh cow manure
- 500 gms (1.1 pound) basalt meal
- 100 gms (1/4 pound) finely crushed eggshells
- One or more sets of the compost preps
- 25 liters (6 gallons) nettles chopped if you are using that version, and reduce cow manure to 25 liters (6 gallons)

*Preparation:* The basalt and eggshells (nettles also) are mixed well for one hour with the cow manure — this should be

done either in a wheelbarrow or on a clean floor. At this point the odor undergoes a subtle change — instead of fresh manure, it now smells more like rumen contents (the odor usually found on the cow's breath and cud).

Next, the pit or barrel is half-filled, the preps are added (except valerian), and the rest of the manure mix is added. On top another set of preps can be added. The valerian prep (3-5 drops, stirred for 10 minutes with alternating vortex motion) is used on the surface, and all is allowed to sit and work for four weeks. Check the progress and stir well at this point, but leave another four weeks before using. It should be dark and crumbly, smell wonderful, and be full of humus and earthworms. Additional sets of preps can be inserted if needed during the composting to speed up the process.

*Application:* To treat one acre, add 1/3 cup barrel compost to 3 gallons water, stir biodynamically (alternating directions, creating vortices) for 20 minutes, and apply to bare soil as a spray in the evening. Repeat three times each spring and fall. Also apply to fresh manure as often as needed. Some of the liquid can also be added to the compost heap if you have extra left over. Barrel compost is especially useful in problem soils, heavy, cold, poor soils, and also at the start of conversion to organic or biodynamic. It is also great for restoring pastures that are worn out, overgrazed, or have mineral problems.

Dr. William Shock is a retired large animal veterinarian who grows berries and medicinal herbs biodynamically with his wife, Lisa. Their current focus is sustainable agriculture and the etheric formative forces. To find out more about the Inland Northwest Biodynamic Group contact them at 79 Vertical Dr., Cocolalla, Idaho 83813, phone 208-265-0512.