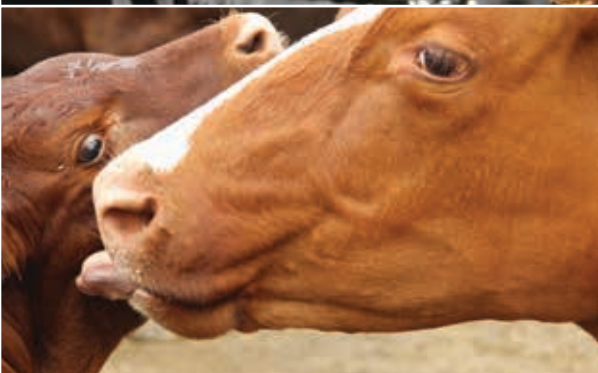




# Convert your Farm to Biodynamics

*From an interview with Timothy Brink*



**There are a range of scenarios for conversion of a farm to biodynamics – a non organic farmer who decides to convert their farm to biodynamics, an organic farmer who is converting to biodynamics, an established biodynamic farmer who is moving to a new farm that is not a biodynamic farm, or an apprentice or student who has finished their training and is starting up on a farm that is not a biodynamic farm. In each case the farm will need to go through a conversion to biodynamic practice, and for each different matters will need to be considered and put into practice.**

We will probably cover the most ground if we consider the case of the non-organic farmer who is converting to biodynamic farming.

## **ADJUSTMENT**

The attitude of the farmer is a key consideration. We could ask why we have a conversion period. Part of the reason is to clean the land of residues from agrochemicals. Another important reason is to allow for a period of adjustment – both for the farmer and for the land. In my mind there are several things. The farmer has to move from attitudes that are prevalent in agriculture today (especially in non-organic

agriculture although they seep into organic agriculture as well) and change their thinking to the biodynamic approach. I think that the fundamental change in attitude is to think the farm as a living organism. This has huge ramifications for the crops that you grow, the livestock that you keep, the mixture of livestock and crops, and so forth. The farm organism principle is at the heart of the biodynamic approach. It is the first thing that Steiner talked about in the Agriculture Course. And the longer I work with biodynamic farming the more I see this as being the absolute core of biodynamic farming – The Farm Organism Principle.

To expand, the industrial model has taken over in agriculture in the past 100 years. It is basically an input-output model where productivity is the main factor that guides management decisions. E.g. put in so many tons of seeds, fertiliser, herbicide, pesticide, and lime, and you expect to get so much out. Optimum production is the guiding factor.

The biodynamic approach is completely different. It is about how to build up a healthy sustainable farm organism in which you grow a wide diversity of crops. The crops you grow are appropriate and belong to the place you are farming, the livestock you keep are appropriate and belong to that place. They do well in a natural system without being propped up with fertilisers, herbicides and pesticides for the crops, and veterinary interventions for the livestock. It

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is a different way of thinking about the farm. It is a way of organising your farm so that it is diverse, so there's balance between different crops, there's balance between the numbers of livestock and the amount of arable land, and a balanced diverse whole is mutually supported. The different parts of the farm organism benefit each other and support each other.

That's a totally different way of thinking about your farm than the way most farmers think about their farms today. It requires a change in thinking. What happens sometimes is that people convert to organic agriculture and all they do is to substitute natural inputs for artificial inputs and they still treat their farm in an industrial way. With biodynamic farming and good organic farming, the farm organism principle is at the core. You have got to change the way you think about your farm.

The principle of the farm organism is there in organic farming as well. This is probably in part due to the influence of the biodynamic movement. It is there in the organic standards but it is much more consciously worked with in the biodynamic method.

### **FARM ORGANISM**

This means seeing the farm as a living system with various parts that interrelate and that mutually support each other. In modern non organic farming it is typical that in different parts of the country farms specialise in one or the other enterprise. So in some parts of the country the farms are all arable and have no livestock at all. In other parts of the country there's a lot of dairy farming. Other places there's a lot of sheep farming. On arable farms it is common that the same crop is grown in the same field year after year. There is usually a rotation, but it is continual arable cropping and you often have the same crop in the same field in successive years.

To develop a farm organism you first of all have to have diversity. You have to have a mixed farming system. So ideally you want to have livestock and cropping. Some horticultural systems and some vineyards are all cropping – that's a compromise. Ideally you want to have livestock and crops. Some parts of the country are not suitable to arable cropping, so you can't achieve this ideal everywhere. But ideally you have some diversity of cropping so that through the crop rotation you have some crops that give back to the soil and some crops that take from the soil. A grass/clover ley is a very good example of a crop that builds soil fertility and structure. At least 3 years of grass/clover is usually a key part of the crop rotation on a biodynamic farm. By means of a good crop rotation you develop a sustainable system.

An appropriate mix of livestock and crops means that the manure from the livestock fertilises the crops and therefore you don't have to bring in fertility from outside the farm. The ideal is that the manures from the livestock support the cropping and that the crops provide the feeds and straw for the livestock. The different parts of the system support and benefit each other. And with diversity comes health and resilience. The crops are healthier because disease organisms have a more difficult time attacking plants that live in a diverse situation. Nature is always diverse. We are working with natural systems and ways of working. Diversity tends to bring health to crops and livestock.

We also want to have diversity of livestock. A mix of

cattle, sheep, pigs, poultry, horses, or goats that is in balance and appropriate for our farm. When we have diversity of livestock we tend to have healthier livestock. Internal parasites is a good example. Clean grazing systems help to make an environment in which the livestock are not under pressure from internal parasites.

### **WHERE DO YOU START?**

The challenge is that everything interacts and so you have to start all together. You have different components.

**The soil**

**The plants – the crops and grassland**

**The livestock**

**The Farmer**

### **RIGHT ATTITUDE**

You have your own attitudes – and that is probably the place to start – with oneself and what it means to be working with the farm organism concept. So it is important to study biodynamics through an apprenticeship, through a full time course, an online course, etc.

If a non organic farmer converts to biodynamics the first thing they have to do is to introduce a good crop rotation with fertility building crops – normally a grass clover ley. So one has to establish a good 7, 8 or 10 year rotation and get it working. That rotation develops the soil life. That is the other critical thing that has to happen with conversion, because soil life and soil fungi are depleted through the use of agro chemicals – herbicides and fungicides in particular. The plants in a biodynamic system are fed by an active healthy soil. So the crop rotation needs to get established, all use of artificial fertilisers has to stop because we don't want to suppress the soil life. And we have to start to use the biodynamic preparations.

### **BIODYNAMIC PREPARATIONS**

The next thing after attitude is starting to use the biodynamic preparations as these will help to stimulate the biological activity of the soil and to balance and harmonise the various processes that take place within the soil and the life of the plants.

### **MANURING**

Good levels of organic matter need to be built up in the soil through at least three years of soil building crops in the rotation. The organic matter holds nutrients for the plants in an accessible form, holds water in the soil and makes the soil friable. This is the foundation for healthy plant growth and development. Then we must choose crops that belong to the farm. In non-organic farming it is common to choose plants that don't belong to the environment and then to prop up these crops with the use of fertilisers, herbicides and fungicides. The only fertilisers we use are our own livestock manures. In some situations, as a temporary measure, some brought in manures may be used from extensive farming if necessary. However if the plants are appropriate and belong to that farm then we should get to a situation where our own livestock manures are sufficient to fertilise those plants and that the soil is sufficiently alive biologically so that the plants can actually get the nutrients they need from the soil. They will be healthier because the rotation is correct and there is diversity. And also because the plants actually belong there



and are suited to that environment – therefore they are not weak and vulnerable to disease and pest problems.

## **ANIMALS**

When converting a farm you will probably already have animals. You then have to think of the animals that you have. You have to decide if the types of livestock, the breeds and the numbers you have are appropriate or not. For example if you have a dairy farm with dairy cows, you may decide to bring some sheep into the mix. The sheep and the cattle work well together, they complement each other. If you only have dairy cows your cattle are going to be more vulnerable to disease for whole variety of reasons and then you use more veterinary medicines to prop them up. Veterinary medicines, herbicides and pesticides are all propping up a system that is not inherently healthy and is out of balance.

In addition to looking at whether you have the right diversity of livestock, you also need to think about whether you have the right breeds. It is very common for farmers to keep continental breeds of beef cattle which don't belong in the environment of many parts of Britain. A farmer converting to biodynamics may consider changing their breed to a traditional native type of cattle like Angus, Hereford or Galloway which are well adapted to the climate in the UK and to the soils and plant life. They will be healthy because they are suited to the environment.

In the past every region has its own breed of cattle and sheep. Those livestock were bred and acclimatised to the environment as they lived there for long periods of time.

In non-organic agriculture the main factor determining decisions is often productivity. Many farmers have thus brought in large muscular continental beef cattle into grassland areas of Scotland, Wales or North of England where few if any arable crops are grown. But those cattle need to be finished with large amounts of concentrates which are arable cereal and protein crops. The traditional UK beef breeds don't need finishing with concentrates. They can be finished on grass which is far more appropriate to many parts of the UK. Bringing in concentrates to feed these cattle works outside of the Farm Organism principle. With the Farm Organism principle you know what belongs to that place and you know its potentials, so you select crops and livestock that do well there without the use of inputs from outside the farm (feeds, fertility or vet medicines).

## **MANURE**

Manure management is another very important point. This in fact needs to be changed early on in conversion, because very often there is no respect for the manure. It is considered a waste product. This is part of the attitude change as indicated earlier. Manure is not a waste product, it is our fertiliser. It is a key component of fertility. It is not the only one as the grass ley also brings in fertility. Growing clover brings nitrogen into the soil and when the ley is ploughed the breakdown of the root mass also brings fertility. But manure is a key fertiliser in the biodynamic (and any organic) system. Our manure is precious! So we have to treat it with respect, so instead of just heaping it up in a field somewhere, biodynamic farmers put their manures into heaps which will compost quickly and effectively. We add the compost preparations to the heaps which facilitates the decomposition process. We thereby minimise losses – otherwise a lot of

the fertility in manure can be lost if we are not careful. For example nitrogen goes into the air through a process called volatilisation. If we are in a rainy area the nitrogen and other nutrients can leach out. This is not only a loss of fertility for the farm, but is also a danger to the environment by bringing nitrates into the water courses.

We set the manure up into heaps. Many biodynamic farmers also cover their heaps with a semi permeable layer that lets in air but keeps excess moisture out. They turn the heaps once or twice to bring oxygen into the heap and add the biodynamic preparations so that they compost quickly and effectively and the nutrients are stabilised.

How you bed your animals is also important. Bedding straw is part of what becomes a fertiliser in well composted manures. You need to have the right balance between the manure and the straw which is the carbon/nitrogen ratio. That balance needs to be right.

Buying in straw is a compromise. An ideal farm has both arable crops and livestock. Thus one of the products from the arable crops is straw for your livestock. But in grassland areas farmers have to buy in straw. Unfortunately it is often not possible to obtain biodynamic or organic straw as most biodynamic or organic farms have their own livestock and thus keep the straw. Therefore it is permitted in the Demeter Standards to buy in non-organic straw. In good thorough composting residues are broken down, so for bought in straw the farmer needs to be sure that the manure is well composted (at least 6 months and often 1 year). Well set up heaps and turning helps this. You can see by the results as the finished compost is like humus and no longer smells of manure.

## **SELF-CONTAINED**

Another aspect of the biodynamic farm organism is that it is as self-contained as possible. It is never possible to be completely self-contained since there will always be something coming in (e.g. seeds, plants) and something going out of the system (e.g. sales). It is more of an ideal principle that the farm should be as far as possible self-contained. This may take some time to achieve. Sometimes in the beginning one has to bring in manures from other farms. That is also allowed as long as it is from an extensive farm. Ideally it should be from an organic or biodynamic farm, but that is difficult as biodynamic farmers don't want to part with their manure.

In non-organic farming it is very common to bring in livestock on a regular basis, whether that is breeding stock, store cattle or sheep, or weaner pigs for finishing. Livestock are even moved around the country with Somerset dairy calves going up to Scotland for rearing and finishing. This is a great way to move diseases around the country. The biodynamic farm works towards the ideal of a closed herd or closed flock. This is part of the ideal of being self-contained. Ideally you have your own breeding animals (cows, bull, ewes and rams) and produce your own young stock that are born and reared on the farm. You are not moving livestock all over the place, but you have a closed herd and a closed flock. Many biodynamic farmers even raise their own chicks for layers and table birds.

## BREEDING

How do you avoid problems?

I had a powerful experience of this when I converted the farm at Loch Arthur together with some colleagues. We had to buy in to start with. After about 3–4 years we managed to achieve a closed herd and flock apart from the male sires. We experienced the health of the livestock increased dramatically. This is because whenever you bring in livestock from outside the farm those livestock have to adapt to the disease challenges on the farm – whether it's internal or external parasites, or mineral deficiencies in your soils. They may even need to adapt to the climate or the buildings you have that might have a risk of some types of disease.

You establish your own closed herd or flock. Just as breeds adapt to a locality over centuries, the herd or flock in the same way adapts to your farm – to the plants that grow there and the conditions you have on that farm. They adapt and become able out of their resources to live a healthy life because they have adapted to the environment.

## DO YOU GET IN BREEDING WEAKNESSES?

The one exception is that the male sires are often brought in – i.e. bull, rams or tups. If you bring in male sires that brings in diversity. The ideal would be if there was another biodynamic farm nearby from where you could bring in a bull or ram. But because it is very difficult to find a bull or ram of the breed you keep and from a biodynamic or organic farm, the Demeter standards allow you to bring in sires from non organic farming when necessary.

## PLANT AND SEEDS

Brought in seeds should be from biodynamic or organic production. The biodynamic movement is a leader with the seed work, and even more so with the new seed project that is being launched. Only when seeds are not available from a biodynamic or organic source are non-organic seeds allowed, and only with derogation from the certification office. These are relatively few. Most biodynamic farmers do not use non-organic seeds. Some producers keep their own seeds, but normally that would be for certain crops and not for every crop. Some biodynamic farmers keep their own grain seeds for many years and they do very well. The crop begins to adapt itself to the conditions. This goes against conventional thinking that seeds must be brought in every year as the seed quality and production will decline. But that is not the experience of many of our biodynamic farmers who have kept their seeds for many years and do very well.

## HOW LONG DOES CONVERSION TAKE?

Normal conversion to biodynamics under the Demeter Standards is three years for a farm that has been farmed non-organically. There are reduced conversion periods for farms that have been farmed extensively and haven't had intensive use of fertilisers, herbicides or pesticides. The conversion period can then be reduced to two years, but only if the biodynamic preparations have been used correctly and comprehensively during that period. A one year Demeter conversion period is possible for an organic farm that has been certified for at least three years, and if biodynamic preparations have been used correctly and comprehensively.

Having said all that, when I started farming I was told it takes seven years for a farm to become really biodynamic. And having converted the farm at Loch Arthur it certainly seemed like a reality to me. I found that for the first two to three years the farm had a huge adjustment to go through. The plants had to change from being fed by artificial fertilisers to gaining their nutrition from the soil as the soil life began to develop. In the first year the yields were pretty good because there were still residues from the fertilisers in the ground. But in the second and third years the yields were very low and I could see that the land was going through a big adjustment to the new system. Then the system began to work, the soil started to become more active, we started to get a rotation working and to grow appropriate crops. I could see that by the fourth year the crops were beginning to do better. The same was true with the livestock. We had brought in a lot of livestock at the beginning to establish our herds and flocks. We also experimented with different breeds. We didn't find the right breeds all at once, so we got to the point of a closed herd and closed flock after about three years. Then there was a great improvement in livestock health. By about seven years I experienced the farm organism was beginning to work and be healthy, and the farm was really starting to do well.

One thing I have sometimes seen is that farmers think of the biodynamic preparations as something extra – like icing on the cake. They think they have to do all the 'important things' first, and then they get around to applying the preparations. When Jimmy Anderson visited us at Loch Arthur for our first Demeter inspection, he helped us to see that the biodynamic preparations are fundamental to everything we do. That is what gets the system working. So the preparations have to be there from the very beginning.

*For details on how to convert your farm according to the Demeter International Production Standards see: [www.biodynamic.org.uk/certification](http://www.biodynamic.org.uk/certification)*

