

# Biodiversity at Liberty

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A year ago, the European Union passed a new regulation allowing people to market seeds of what they call organic heterogeneous material. Until now, all crop varieties in the EU had to be genetically uniform, all the individual plants essentially the same. The new regulation allows a certain amount of diversity, which is important for organic growers, who use biodiversity to help them control pests and diseases and to cope with climate change.

At the 10th annual meeting of Let's Liberate Diversity, in Budapest, I heard from two organisations that are using OHM. First, Lucas van den Abeele, who points out that very little of the raw material that goes into Belgian beer actually comes from Belgium.

**Lucas:** Indeed, even even way less than 8% were, maybe at 3 to 4% in total. So I always tell the people we were very proud of our Belgian beer, but there's not many Belgian ingredients in Belgian beer. As the cereals are all imported, the hops are often imported too, the yeasts come from the industry. And so it's the water mainly.

Drie Fontenien Brewery is a very old traditional brewery and it's so special in its way that it makes lambic beers, brews lambic beers through a natural fermentation process, let's say. And so that means that we won't add any yeast to the beer, but that we leave the beer in the open air and that the natural yeast and bacteria from the air come into the beer. And so once that's done, the beer goes into barrels, oak barrels, and we leave it for a very, very slow and long process fermentation. Up to three years afterwards, we will select different barrels: a barrel from typically one year old, two year old and three year old. We will blend them together, put them in a bottle, leave it for six months in a bottle re-fermenting, and that makes the gueuze. So the gueuze is always a blend of three lambics from different ages.

**Jeremy:** And it's quite sour. I mean, I liked it, but it's quite an acquired taste.

**Lucas:** It is a special taste. People who are not used to drink this type of beer wouldn't even think of beer sometimes. It has this, indeed this sour taste. But it's much more than just the sourness, than just the acidity, but indeed the spontaneous fermentation that this natural yeast and bacteria make, that another taste appears. And then the fact that it's such a slow process, that it really takes up to three years time, makes that all these different varieties of microorganisms will develop their own taste and aromas and values, which makes it a very diverse beer.

**Jeremy:** So you're working with local farmers rather than buying in your barley and your wheat. So what what was the impetus to use local grains?

**Lucas:** We have this very traditional way of brewing. And we we kept being very stubborn on our process. We didn't industrialise it, we didn't accelerate it. But actually the link to the farmers got totally lost. And up to five years ago we didn't know any farmers from our region any more. And so that's why the incentive came to to rebuild this link and to reconnect to the farmers and to look at who is growing the fields around the brewery and can we connect them? Can they grow again, the cereals for us?

**Jeremy:** And how's that process work?

**Lucas:** So it was difficult in the beginning because, as I said, we didn't know these farmers any more. And so there wasn't any trust between ... The farmers didn't know the reality of the brewery and the brewers didn't know the reality of the farmers. And so it took really a lot of effort and energy to get in touch with these farmers and to gain the trust and to think together of how should we organise ourselves to make this project profitable for everybody. And, for example, there was a couple of kind of lock-ins in this system, for example, the storage of the cereals, the seeding, the cleaning of the cereals, but also the varieties, which were not really available, the good varieties, the organic farming, the knowledge. A lot of the knowledge, of the know how, which was there in ancient times, got lost somehow. And so we really needed to recreate this whole link as the food chain. And that's a very general thing. As the food chain got so industrialised, it got very

fragmented. And so every actor is very independent, very specialised in his thing, but doesn't know the next actor.

**Jeremy:** So how did you go about rebuilding this link between the farmers and the brewery and helping them to understand one another?

**Lucas:** Yeah. So first of all, it was really through practical things. The farmers in the beginning were a bit bit skeptical. They were like, This looks a nice project, but not sure if it will really work. And so through inviting the farmers, first of all to other farmers and have them visit fields and variety collections, that was a first step. But then also, of course, inviting the farmers at the brewery and having the brewers explain the whole story of how they work, how they how they process the beer. But then the opposite too, of course, inviting the brewers at the farm and having the farmers being proud to be able to tell how they work on their fields, which varieties they use, how is the history of their farm. They recreated this, this awareness and this respect for each other's work.

**Jeremy:** So did the brewery know which varieties it wanted to farmers to grow? Or did the farmers say we're growing these varieties? Can you brew with them?

**Lucas:** No. So actually the situation, especially for the organic farmers, as we were working with organic farmers, is that there were no real organic varieties available. And that's the industrial system actually. The modern varieties which are sold on the market as seed are all varieties which are made for conventional farming. And then they are tried in organic farming and if they perform good enough, they are sold as organic varieties, but they are not made for organic farming. And so this was one of the big issues we encountered. The second issue was at the brewery, as we are for making lambic, we use one third of raw wheat and two thirds of malted barley, so we use both wheat and barley. And for this raw wheat it was difficult to find the good properties in the wheat available on the market and actually in literature.

Looking back at the history of the lambic brewers, we found that there was an old variety, a landrace typical from this region grown by the farmers for this type of brewers, but this variety — in English, it would be translated to the little red wheat from Brabant, which is the area — this variety, we went looking after it in all the seed banks all

over the world, even to the US, USA and in England and in France and in Germany, everywhere, we couldn't find it. And so that was a very sad thing.

And so together with the farmers, as there was both this issue at the brewery and at the field, we said, okay, let's do variety trials, Let's try different land races, different old varieties, not specific from this region, but from regions close by with maybe similar properties and have a selection together with the farmers, kind of participatory breeding (participatory selection, rather) to identify which varieties are most suited for the farmers, they are happy with, and really with their own criteria. So this would be like the first testing phase and the varieties who would behave the best at the farmers, and so the farmers would select them themselves saying, okay, we go on with this and this and this variety, these varieties. We would multiply them up to 300 kilos to be able to brew one beer. And so the second trial was the brewing trial and seeing if those varieties who were selected by the farmers would be also selected by the brewers.

**Jeremy:** And did you find one, two, five? How many varieties did the farmers and the brewers kind of agree on?

**Lucas:** In total on the field, we tried maybe up to 70 or 80 varieties, so a lot. But some of them we only tried them one year on two square metres. And if the first year they were extremely susceptible to diseases, we wouldn't sow them again. So I mean, we need to be practical and we need to move forward. And so I think still we did maybe 30 trials at the brewery, so 30 different varieties we have grown up. The problem is as the seeds, if we get it from the seed bank, we get five grams just exactly 100 kernels. This we need to sow it on one square metre. It takes five years before having 300 kilos. But on this five years, we learn a lot that's interesting. And afterwards, brewing our beer takes also three years and a half. But so we did a lot of brewing tests. But we are not at the end of the whole trial. So it's difficult now to say which varieties are really standing out. We haven't really selected one variety. The aim now is rather to have a couple of these varieties which perform best to mix them together and to sow them as a mixture on the field, have them evolve year by year to create kind of a new population and to be able to brew with this population.

**Jeremy:** But now how does it work for the farmers? Because they're growing a crop which presumably is not as good as a conventional crop might be in terms of yield. So you maybe have to pay more for it, but you don't know how good it's going to be. I don't understand how you kind of share the profits, because the farmers are enabling you to make your beer and you couldn't do it without the farmers, but you're also spending time and money to make the beer. So how do you work that out?

**Lucas:** Yeah, exactly. So the first thing is indeed, the yield in average will be slightly lower for these landraces, but you put less energy in your system as these landraces demand less fertilisers, less work somehow, less inputs. So for the farmers, it's also — even if the quantity is a bit less — it is profitable as it's worth for their farming. It's also high straw. So they capture a lot of carbon, which is interesting for climate change and they can put it again in their soil, which adds to the humus, which is a very good thing. So if you look at the general picture, not only kilograms per hectare, it is an interesting thing, but still, as you say, pricing needs to be correct. It needs to be fair. And sometimes we have years where the quality is less good because rain at a certain point, not ideal. So we developed a whole new pricing model between the brewery and the farmers where actually, instead of just paying a price per tonne, which is the general system and where if the quality is not good, the farmer isn't selling anything. And so the climate change risk is totally onto the farmer here. We split it in two and we have partly a price per hectare, partly a price per tonne, which means that the brewery compensates the farmer for the work he does on his field.

And it's not the fault of the farmer if the quality is bad because of climate change. And so that means that the farmer is really sure to have a certain price. And so the second aspect is still a price per tonne, but which is defined on the quality of the cereal. So for example, in a bad year where the quality is not good and we as a brewery cannot brew with it even if we try to be flexible, the farmer gets this price per hectare, he doesn't get his price per tonne, but he can still sell his cereals. He remains the owner of the cereals. He can still sell it as animal fodder, for example, which makes that for a bad year his situation is not too bad and the opposite for a good year, which we hope, and which is actually most often the case. The farmer gets the price per hectare and the price per tonne and which gives him a good salary for his work. And this is for us very important

because we are earning a good, good ... I mean we are surviving, we're earning good money what with brewing our beer and it's not fair to the farmer who comes before us on the food chain doesn't earn money with his job, with his work.

**Jeremy:** So as a farmer, I know that I'm going to get a certain base price per hectare no matter what happens. And then if the cereal is good, you pay me for the cereal. And if the cereal is not good, I do what I like with it.

**Lucas:** Yep, that's kind of the case. But what is very important too is that this quality of cereals, we we need to redefine it too, because today the quality criteria are set by the big industry and they are extremely severe for artisanal brewers like us. But even artisanal bakers or other people, artisanal craftsmen, we can be more flexible on quality, but we have to redefine which is the basic quality we need. And this we need to really do trials. So every time that the quality is just slightly not enough for the industry, we will do a brewing test and we will inform the farm, inform the farmer, and say, okay, we need to be able to brew good quality beer, that's for sure. But we can try to be a bit more flexible on our process of of brewing. And if we find a way to brew with these cereals, then it's fine. If we don't, yeah, then we can't buy the cereals from the farmer.

**Jeremy:** And I know it's only been five years or so, but is the brewery happy and are the farmers happy?

**Lucas:** Everybody is extremely happy. The brewery is really happy because it really adds to this whole story, which is such a long history of this way of brewing beer, which is just so particular. And actually just to tell the history, in the nineties, 2000s, almost all these breweries disappeared of lambic. And so all, they moved into being more industrial breweries, so they got rid of the very traditional recipe. And it's really only a handful of old brewers who were so stubborn and who preserved this way of brewing. And so this connects so well to this, to these farmers. And on the other hand, of course, the farmers are so proud because they know that they make the beer too. If they do a good job on the field, then this beer will taste good. And so they know that they are somehow producers of beer. And so instead of being just a producer of cereals and we just buy cereals, we become collaborators on the same product. And that's just so much added value for everybody.

*The new OHM regulation allows Drie Fontenein's farmers to market grain that is not absolutely uniform, that contains the diversity needed to adapt to changing conditions. But even old traditional varieties — landraces — which are more diverse and adaptable have their limits.*

*Yumi Biagini works with organic farmers' in the south of France, where cereals are an important crop, although modern varieties don't suit their way of farming. Many of them turned back to famous old traditional varieties, such as Rouge de Bordeaux. But now things are not going too well.*

**Yumi:** The problem now is our condition in our region. We are in the South of France, are getting every year more drier. And we can face it. We can feel it, and farmers, too. So right now it's like all the traditional and local varieties, we're using conservation, multiplication. The yields already are lower than the modern varieties, but now with climate change, it's getting worse. So we need, we have to find and to develop new seeds and varieties that are getting from the traditional varieties but that we can mix to create new varieties that are adapted to our new conditions.

**Jeremy:** But it's very strange, because I think there's this idea among people who know about landraces and traditional varieties, this idea that they're perfect for the environment. But of course, if the environment is changing, then where do you go to find adapted varieties?

**Yumi:** Yeah, that's the problem. And the idea we have is that through this kind of network, our national network, but also European network, we can get in touch with groups that are far away from our land, but that are more and more in drier zones, in more Mediterranean climate, like in the south of Italy, south of Spain. And these are places where groups of producers have been working but in conditions that used to be arid for a very ... a longer time than our area. So what we want to do is to have exchanges with these collectives, these groups, to find solutions together. Because if we stay in our just local group, we cannot manage to have all the resources. And exchanges between groups of farmers is really a way we see that we can make a mix of tradition and innovation because they are the people that are innovating the traditional varieties we have. They are the result of thousands years of producers' innovation.

**Jeremy:** And are the farmers ... Are the farmers keen to do it? Are they really interested or do they just see this as an emergency?

**Yumi:** No, they are the one that are asking us to find solutions and to get in touch with other collectives. This is difficult because most of the time they don't have a lot of time to dedicate to a trip or a journey to another country. But when we manage to do it in the right season, it's some of the action that have really sense for them.

**Jeremy:** How do you think consumers, the people who buy the bread made from the grain or the beer made from the grain, how do you think they will respond to these new traditional varieties?

**Yumi:** I think the problem we have is that we're not very good at communicating and we're so busy and there is so many work to do that we don't put our energy in knowing how we can communicate and how we can get to the consumer to make him understand what we're doing. But I think if we collectively work on this communication, about how adapting to new climate change conditions is about not only getting old varieties but also innovating, a very concrete work in fields that is made by collective and groups of producers, I think they can understand it.

And also what I want to say is that even if we make new varieties, they still are traditional and population varieties, and that means that they have an important diversity inside and also that we want to select this population where it is not only on yields and climate change criteria, but also on gustative and nutritive criterias, because we know that the wheat, for example, that is produced and transformed in the industry, it has lost a lot of its gustative and nutritive properties. So that is one of the points we have to communicate to the consumer, because eating a bread which is from even a mix of traditional varieties, which is a new varieties, will have more nutritive interest and gustative interest that the flour they will buy in the supermarket.

**Jeremy:** Yeah, sure, But they'll have to pay more for it.

**Yumi:** So we have to make the government and public authorities support this kind of consumption. And we think as a farmers organisation that we lost the price of what really means getting healthy and sustainable food. And today we know that a lot of people

aren't economically able to get that food. So we have to make some food policies with support of public authorities to make that possible.

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