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A radical approach that is grounded in common sense

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Thirty years ago, most vineyards, like other agricultural farmlands, used chemicals to combat disease and, more importantly, increase output. But chemicals degrade land and damage ecosystems. To restore the balance, vine growers increasingly practise "sustainable" farming, which uses a minimum of chemicals, or "organic" farming, which uses none. EU regulations governing organic viticulture ban synthetic chemicals in the vineyard. Only sulphur and copper are allowed.

Biodynamic farming is organic farming that follows a strict set of non-scientific regulations and works according to the lunar cycle. It was developed by Dr Rudolf Steiner, an Austrian social activist, in 1924.

Biodynamic farmers believe soil is a living thing that is killed by the heavy use of chemicals in conventional farming.

Biodynamic farming claims to build healthy living soil through interaction with the environment. The emphasis is on soil and compost preparation.

Advocates also believe there is a link between the soil and the moon.

While these all sound credible to me, some practices - burying cow horns filled with cow manure and dynamising the compost (vigorously stirring a mixture of herbs and water for a period of time) - are regarded by many as mere superstition.

However, even in those cases, I think there are possible scientific explanations. Cow horns consist of compounds of calcium, an essential element for improving soil structure and regulating acidity. These may possibly leach into the manure and then into the soil.

Stirring vigorously, similar to whisking cake ingredients before baking, introduces more air, which could promote micro-organism growth.

I also think that using herbs and wild flowers to prevent or cure vineyard diseases and pests is akin to Chinese herbal medicine.

As for the lunar calendar, the gravitational forces that cause tides affect land as well. Biodynamic winegrowers irrigate when the tide is high on the premise that water will be "pulled" into the vines more easily. They prune when the tide is low to minimise sap loss.

The Geisenheim State Research Institute in Germany has been carrying out an experiment to compare conventional, organic and biodynamic viticulture and wine production. The first results from 2006 to 2009 show a lot more soil biodiversity in both organic and biodynamic plots compared to conventional ones, with almost twice as much in the biodynamic plot. Moreover, overall yield in organic and biodynamic plots was reduced by 10-20 per cent because of smaller and looser bunches, resulting in more concentrated and healthier grapes - the basis of good quality wine. Grapes from each plot were made into wine, and tastings

revealed that the biodynamic wine was much preferred in a good vintage (2007), although there were no marked differences in average vintages (2006 and 2008).

This research indicates that both organic and biodynamic winegrowing can reduce stress on the environment, with biodynamic practices going one step further.

There is a difference between wine made from organically or biodynamically grown grapes and wine where the actual winemaking process is organic or biodynamic.

Winemaking is a series of chemical and biochemical reactions that involve yeasts and chemicals, plus purification procedures such as fining and filtration. Winemakers can manipulate every step of the process. Organic and biodynamic wine producers advocate minimal interference. They use natural yeast fermentation and minimal fining and filtration (or none at all). The maximum amount of sulphur dioxide permitted is a third of that of conventional winemaking.

Good quality biodynamic grapes can be ruined by a lack of care in the process, and biodynamic guidelines limit options to tinker with the wine. This may explain why wines from conventional, organic and biodynamic growing systems tend to taste similar in average vintages.

I recently talked to biodynamic wine producer Christine Saahs from Nikolaihof in Wachau, Austria (importer: Cottage Vineyards). A biodynamic farmer for nearly 30 years, she says biodynamics is one step ahead of organic farming. Organic farming sustains the health of the soil; biodynamic farming improves it.

Whether conventional, organic or biodynamic, I believe it is the passion and belief of the practitioners that makes the difference. But both good and bad wines can be made whatever viticultural practices are used, and only when growers and winemakers devote their heart and attention to the task can they make good quality wine. I suppose it's rather like home cooking: mum always cooks with love and care. Copyright (c) 2012. South China Morning Post Publishers Ltd. All rights reserved.