

Non inversion organic farming: an oxymoron or a step change in organic farming?

The recent study trip to Friedrich Wenz's organic farm near Baden Baden organised by IOTA in association with Organic Arable promised a radical new technology which could offer better soil management and answer our conventional min till critics.

Ever since the Saxons started to replace the ard with the mouldboard plough, inverting the soils has seemed to be the easiest way of killing turf, controlling weeds and providing a suitable tilth for sowing crops.

Unfortunately, there are a number of negative consequences, including an "unnatural" soil inversion which has an adverse impact on soil life, a risk of creating a soil pan, excessive oxidation of organic matter, excessive energy consumption in both the ploughing and subsequent cultivations and in some cases, weeds such as wild oats are actually aggravated by ploughing.

Given our ambition of maximising soil life, and in particular earthworms, it is very unlikely that the soil, let alone the worm forgives the plough.

Following the IOTA Non Inversion Tillage Research Review (see www.organicadvice.org.uk) and Friedrich Wenz's presentation at our meeting in Yatesbury in July (ORC Bulletin No 94), the chance to see the practical results of 25 years of non inversion tillage was eagerly sought by a group of 6 organic farmers and advisers.

What we saw was a small stockless, biodynamic arable farm with low levels of weeds, producing reasonable, but not exciting yields, using a single piece of very refined, non powered cultivation machinery which has been developed over 20 years, offering a radical alternative to the plough.

More importantly, what we found on this farm was a sophisticated level of understanding of what an organic system is really about – and putting that into practice with some rather novel kit. An absolute focus on maximising soil fertility, organic matter build-up and feeding the soil life while avoiding all bought-in mineral fertilisers and manures has resulted in a cropping system centred on green manuring at every opportunity. A focus on maximum production from minimum energy input has produced a "zero energy" farm. The soil was the greatest testament to the fact that there was something special going on here – it was simply a teeming mass of worms, insects, fungi and the rest,

consuming and incorporating prodigious amounts of green manure organic matter into the soil.

There has been very little detailed monitoring of this farm and its system. The crop yields given were general rather than detailed. Soil analysis results were available and showed organic matter levels of 4 percent, which is probably high for these circumstances, but frustratingly there is no comparative analysis with neighbouring organic and conventional farms. So while it may give some pointers to potential for carbon sequestration, it certainly doesn't provide clear evidence. While annual and perennial weeds are undoubtedly present, they are clearly being well contained with the system. Its overall energy requirement is significantly lower than that for the standard plough and cultivator system.

Having passed the "doubting Measures" test, it was then a question of "will it work over here?"

The growing conditions are, of course, very different, with our shorter growing season and less predictable climate. However, what is promoted here is not a blueprint attached to a piece of kit. It is a way of thinking about soil and farm management which requires a detailed knowledge of one's farm, cropping and green manure options, and use of rigid tined equipment with a wide range of hoe points and sweeps. It involved a degree of expertise and timeliness rarely found in Britain.

A plough and power harrow is an easy option by comparison, but with dedication it does seem from Friedrich's work on his own farm and many other farms through central and Eastern Europe that the system can be made to work under a wide range of soil and climatic conditions.

What is required is the site-specific application of the approach. Having the right kit – namely a frame with rigid tines and an array of attachments, including a multibox seed drill, seems to be important although there are farms trying with standard cultivating equipment.

IOTA in its work in supporting the development of more climate change friendly techniques will continue to maintain links with Friedrich and we are planning further study visits to see the application of the system under different conditions. For further details contact mark@organicadvice.org.uk

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