

Field Visit Report

13th May 2014

Visit to Shillingford Organics, near Exeter (<http://www.shillingfordorganics.co.uk>)

Forum participants were shown round the farm by Martyn Bragg, the proprietor, to whom we extend our thanks.

Shillingford Organics is situated on a 140 hectare (350 acre) farm just 3 miles from the centre of Exeter. The farm started being converted to organic agriculture in 1998, and has been fully organic since 2002. About 18 ha (45 acres) are dedicated to growing vegetables, mostly for an organic vegetable box scheme where subscribers buy a box of mixed vegetables, herbs, salad leaves, edible flowers and some fruit once per week. The boxes contain a few staple items (potatoes, carrots, onions) and a further variety of items (many picked that day) depending on season. In early summer there are 7-8 items in each box, in late summer up to 12 and after Christmas usually 8-9. Other organic vegetables and fruit are sold at Farmers' Markets. The farm gives employment to 7 people.

The box scheme is essential for the economics of the farm. It became established quickly, although there was a downturn in sales in 2008/9, with the onset of the recession. This has led to the company increasing its activities in retention of customers including farm walks and newsletters and recruitment of new customers (using Facebook, Twitter and to a lesser extent leaflets). The success of the scheme depends largely on the demographics of the local population, and the company sells as many boxes in the small town of Totnes (south of Newton Abbot) as in the large town of Exeter.

The vegetables are grown on an 8-year rotation. Recently tree strips have been introduced into the vegetable plots (outside of government grant schemes, although the original conversion to organic farming was grant-aided), so this is now an agroforestry system.

In the first field we visited the trees rows contain mainly varieties of dessert apples, although with other fruit trees including a kiwi fruit bush present. The trees are pruned every winter, taking on average about 10 minutes per tree for this operation, although this time is decreasing as in early years the growth had to be corrected as the trees were being misshapen by the predominantly south-westerly wind. The rotation in the alleys comprises crimson clover (*Trifolium incarnatum*) for two years to build soil fertility, and then early potatoes, sugar snap peas, courgettes, spring onions, broad beans, beetroot (the order of the crops after potato was not made

clear to us, but is likely to have had non-leguminous and leguminous species alternating).



Crimson clover (*Trifolium incarnatum*) growing in arable alley (Photo: Jo Smith).

There was a bed outside of the rotation where salad vegetables (rocket, radish, mustards, mizuna) are grown. Soil fertility was initially provided by application of compost, but in the 3 subsequent years no compost applications have been made. The salad crops are planted directly into the soil in spring, and have been harvested by mid-summer, after which time the soil is covered with black plastic sheeting. This keeps the soil warm, and prevents the growth of weeds. The action of earthworms in this warm soil means that no cultivation is required in the spring. There seems to be little use of the area for slugs to overwinter under the plastic, possibly because of the presence of beetle predators.



The salad vegetable plot (Photo: Jo Smith).

The second field we visited was of 6 ha (15 acres), and had been newly planted with tree rows although part of it was in grass/arable. Tree strips are 4.5 metre wide, with 24 metre alleys between the strips. The tree species included nut trees (varieties of hazel), but also willow for woodchip in places. Alder trees are grown at the end of each row.

It is intended to plant gooseberry bushes between the hazel trees, and other fruit such as raspberries and mulberry. In some of the tree strips mulching with wool waste on plastic sheet is being trialled. Crops in the alleys are on a 6-year rotation, and include 2 years of grass/clover, brassicas, spinach, chard and beetroot. The brassicas include different kales, calabrese, early cauliflower and kohlrabi. The grass clover is cleared by sheep followed by chicken in the second of the two years, and currently the sheep are causing some problems to the trees.



Tree row mulched with wool waste on plastic sheet (Photo: Jo Smith).

The two fields of agroforestry are on the south-facing slope of a valley running east-west. Tree rows are positioned north-south, so cultivation of the arable alleys occurs down the hillside. This may give rise to some soil erosion in wet months. The hedge along the northern border of the fields has been allowed to grow up, to give shelter. During our visit the crimson clover was flowering, as were some of the weed species. There were numerous invertebrates, including bees, orange tip (*Anthocharis cardamines*), white (*Pieris* sp. and female orange tip) and small tortoiseshell (*Aglais urticae*) butterflies.

14th May 2014

After the morning presentations we visited Martin Crawford's forest garden and the agroforestry trials at Dartington. Martin manages the Agroforestry Research Trust (link: <http://www.agroforestry.co.uk/>).

Martin explained that he gained the inspiration for forest gardening from Robert Hart in Shropshire. He then had the opportunity to work with the Dartington Trust to develop a forest garden on part of their estate. Martin led a tour of the forest garden which includes both native and non-native species. Martin explained that about 1500 people per year visit the garden, and he highlighted the "Agroforestry and Forest Garden Network" which includes about 180 systems.



Martin Crawford leads a tour through the forest garden at Dartington (Photo: Paul Burgess).

During the tour, Martin explained the management of Shitake mushrooms. The Shitake management approach is quite violent! At regular intervals, the manager needs to hit the logs to release the spores to create the next wave of mushrooms.

After visiting the forest garden we moved to the agroforestry trial site. Martin started renting the 8 ha field from the Dartington Trust in 1997. To the east, the field is bounded by a line of the willow (*Salix* spp.) variety Bowles's hybrid. This suffered significant damage during the 2013-14 storms. To the west and south there are Italian alder (*Alnus cordata*) and the whole area is fenced against deer.

Part of the field is planted with 22 sweet chestnut (*Castanea sativa*) hybrids planted at 8 m spacing in 1997-1998. Some are formed by crosses of sweet chestnut with Japanese chestnut (*Castanea crenata*). The trees were thinned in 2011, with the objective of retaining the trees producing large nuts. The best yields are 20-40 kg of nuts per tree per year, with a sale price of about £5 per kilogramme. However Martin notes that combining high nut yields and timber yields is very difficult. One promising upright variety was "Marigoule", but it needs to be reproduced by micro-propagation rather than from seed. Martin also highlighted the need for squirrel control, which in turn requires the daily checking of traps starting in June. He concluded that there is no point in growing nuts without squirrel control measures.



Varietal testing of sweet chestnut and walnut in an area surrounded by an Italian alder windbreak (Photo: Paul Burgess).

Martin had also established a half hectare area of walnut (*Juglans regia*) trees. One important disease is walnut blight (*Xanthomonas campestris* pv. *juglandis*). Martin explained that on his site the German varieties tend to suffer most from blight. Walnut yields range from 200 g on the worst affected trees to 25 kg on the least affected. He explained that there is quite a lot of work on walnut breeding in France. On any site there is a need for a range of varieties as many are not self-fertile. Prior to harvest, it is necessary to cut the grass below the walnut trees, and he recommended the use of a “nut wizard[®]” for hand harvesting the walnuts from the floor. It is possible to harvest about 15 kg per hour, visiting every 3-4 days over 2 weeks. The value of the walnuts is about £5 per kilogram.

The final part of the tour included some less common species such as heartnut (*Juglans ailantifolia*), a species of Japanese walnut. Martin also demonstrated that stone pine (*Pinus pinea*) can grow in South West England, producing nuts after 9-10 years. He thought that holm oak (*Quercus ilex*), although slow growing, creates an excellent windbreak and it is possible to select on the basis of low tannin acorns.

Lastly there was an area of black locust (*Robinia pseudoacacia*) which is good for bees and produces excellent timber. At the end of the meeting, Martin was thanked for hosting an informative and interesting tour.



A stone pine tree (*Pinus pinea*) (Photo: Paul Burgess)



An area of black locust (*Robinia pseudoacacia*) growing in Devon (Photo: Paul Burgess).

Reporters: David Pilbeam and Paul Burgess