

European Innovation Partnership (EIP) Wales project

An examination of the practical and financial potential for growing small scale asparagus organically at two locations in south Wales

Interim report

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Background

Asparagus has good potential in Wales as it is a high value crop, which is a good draw for farm gate sales. The crop falls into the hungry gap period from the end of April to the end of June when few other crops are available in the UK. The crop benefits greatly from freshness and short supply chain markets that supermarkets are generally unable to compete with. While there is a great demand for asparagus, the high establishment costs and long period before first harvest can make growing the crop unattractive to small scale growers.

The aim of this project is to monitor outputs and benchmark organic asparagus growing from establishment through to first harvest on field scale at two farms in Monmouthshire. Assessing the viability of organic asparagus will allow a thorough understanding of the practical and financial requirements of growing the crop, and would provide useful information for the wider sector.

Summary of Project - Year 1

With no organic asparagus crowns available, derogations from certification bodies were required to source 'approved non-organic' asparagus. The varieties Geinlim, Portlim and Backlim were chosen as they present a spread of harvesting peaks. A total of 40,000 crowns were ordered for the two sites, a total of just under one hectare on each site (22,000 crowns per hectare or 2.2 crowns/m²).

The two fields were soil tested and showed a requirement for lime. Soil phosphorus (P) and potassium (K) levels were low on both farms. Initially it proved difficult to source the small amount of lime required for the two fields at four tonnes/ha. It also proved difficult to source contractors with experience of planting asparagus. Contractors were eventually procured but, along with farmers, needed advice on methods of planting and mentoring from horticultural specialist Chris Creed of ADAS.

Asparagus was delivered in late April 2018 and the field at Square farm planted first. Ground conditions were generally good and the field was freely draining. It took eight days to complete ground preparation and planting due to rain. Asparagus beds can give rise to soil erosion so grass headlands/buffer strips were left to minimise soil loss from the fields. In conventional systems erosion is more of a problem as there are fewer weeds to prevent run-off.



Planting the crowns at Square Farm.

Weather conditions deteriorated and Trealy farm could not be planted for a further two weeks. Crowns were stored in an open roofed shed with a single layer of nets covered with a tarpaulin. Two adjacent fields were planted at Trealy. Soil type was heavier and ground noticeably wetter during planting. Again planting took longer than expected.

Establishment/Pests

Asparagus established well on the two farms, despite the wet spring and hot/dry summer. Weeds such as Fat Hen (*Chenopodium album*) and thistles (*Cirsium* spp.) established themselves but were not deemed a significant threat to the developing asparagus. Both farms ridged up the asparagus beds. Given the proximity to the woodland it was thought that deer could be a threat to the young asparagus plants. However they do not appear to have had any impact on the crop as yet. Slugs became a problem at Trealy farm and organic approved ferric phosphate pellets were applied at label rates. This cured the problem.

Stock have been introduced to graze off the senescent asparagus ferns. It can be seen from the photographs of Trealy below, that grass has established as the dominant weed.



Weeds at Trealy Farm - early spring 2019.

Assessments

Assessments of the fern were made on both farms on 9 July 2018. Results are shown in Table 1. Fern heights for Geinlim at Trealy farm were lower due to the later planting date.

Table 1: Fern assessment results.

Variety	Site	Average no. of Ferns / m	Average Height (cm)
Portlim	Square Farm	8.4	97.9
	Trealy Farm	5.1	95.9
Backlim	Square Farm	12.0	101.5
	Trealy Farm	6.1	91.7
Geinlim	Square Farm	10.8	91.2
	Trealy Farm	9.4	75.2

Crown size, weight and bud number were assessed on 29 March 2019, shown in Table 2.

Table 2. Crown assessments results. Crown scores: 5 is large and 1 is small.

Variety	Site	Average Crown Weight (kg)	Average no. of Buds per Crown	Average Crown Score (1-5)
Portlim	Square Farm	0.6	11.5	3.4
	Trealy Farm	0.5	12.6	3.9
Backlim	Square Farm	0.9	14.1	4.3
	Trealy Farm	0.45	10.4	2.5
Geinlim	Square Farm	0.9	15.3	4.3
	Trealy Farm	0.39	11.9	2.5

The asparagus generally did better at Square farm where the field was prepared well ahead of planting whereas the planting at Trealy farm was slightly delayed. Both the fern height and number were higher at Square farm; however, establishment was good on both sites and the crops grew well considering the dry season. This was also the trend in the results for the weight of lifted crowns, except Portlim, which was slightly heavier at Trealy farm.

Year one is the most difficult year in establishment so these results are encouraging and it seems as if regular cultivation and light ridging up are effective in terms of growth and weed control.

Next Steps:

A fertiliser strategy will be developed as the crop becomes better established. There is access to a supply of organic chicken (layer) manure which could be utilised.

Weed control will need to be carried out in the form of ridging up. Chris Creed, ADAS is to produce a protocol for ridging once the crops can easily be seen to avoid cultivation damage.

As crowns emerge in the spring, each field will be monitored for vigour, spear numbers and pests and diseases.

Project Summary (End of Year 1)

Both farms have established the asparagus beds on their farms. Heavier soil and wetter conditions meant that establishment at Trealy farm was less successful than at Square farm. However establishment was deemed satisfactory on the whole.

Costs of establishment were higher than anticipated, reinforcing the fact that asparagus has high start-up costs with no immediate return on investment. Lack of skilled labour to carry out establishment, and the relatively small areas involved were also noted as issues.

Farmers have worked well with the organic specialist (Chris Creed) who has provided ongoing mentoring to the group. As the new season approaches emphasis will be placed on appropriate nutrition and weed/pest control to ensure the crop can further establish itself prior to harvesting in the future.