INTRODUCTION

Asparagus (*Asparagus officinalis*) is a perennial plant grown for its succulent young shoots. Asparagus plantations take three years to establish before a crop can be harvested, but once in production, the asparagus spears command a high price.

ESTABLISHING A NEW CROP

Planting material

Asparagus can be established from field grown crowns or from module raised transplants. Either method will give good results, but using crowns usually give a bigger plant and can mean a saleable crop is produced a year sooner than would be the case with transplants.

Modules need ordering from suppliers in January. This means the seed is sown in heat and the plant should be ready to go out at the end of April. This enables it to establish quickly and evenly and cropping should commence in year 2- 3.

Asparagus crowns can be bought without pre-ordering, however, it is best to order early to avoid being disappointed on varieties and numbers. Holland is the main source of planting material.

Planting method

The crop is planted either on a flat seedbed or in a 50mm furrow. The spatial arrangement is not important as long as 22,000 plants are planted to the hectare (or 2.2 plants per m^2). Normally tractor wheel centres will define the spacing.

Soil is ridged up around the plant during the dormant season to get the base of the crown some 20cm (8") deep in the soil at the end of the first or second season.

Varieties

The variety Geynlim is currently favoured although some growers are looking at American varieties with Jersey Giant being the most popular. Other varieties of interest include Cito and Dariana.
If new varieties are to be trialled, it is sensible to only allocate a relatively small area for this, as once planted the fields will be tied up for several years.

Planting site

Asparagus can be grown in most soils including heavier clay loams, but a sandy soil is ideal. As the crop will be in the ground for up to ten years it is essential that the site preparation is thorough. This includes ensuring the area is free from perennial weeds, especially creeping thistle and couch grass. It is also worthwhile building up the organic matter content of the soil prior to putting in the crop.

Fertilising

In the early years, fertiliser is applied along the rows only (to prevent waste) and is based on:

Nitrogen 75 kg/ha
Phosphate 125 kg/ha
Potash 200kg/ha

In practice, the crop is fed on a little and often basis in relation to the crop development.

Asparagus has been shown to have an economic response to **salt** applied at 1.0 tonne/hectare, however it is not absolutely necessary and crops are grown without it. The benefit of applying salt is seen in the higher number of bigger spears produced and an extended plantation life. Asparagus beds should not be allowed to become acidic so regular checks are needed and **lime** must be applied in advance of a pH drop. Beds should be kept at pH 6.5 or over.

Weed control

It is possible to use chemical methods of weed control after planting, but black polythene could also be used and will be more appropriate for organic growers.

Pests and diseases

There are not many pests of asparagus, so there is NO routine pesticide spraying. Asparagus beetle may appear over the years and will need treatment and there are also occasional fungal attacks.

Asparagus beetle (*Crioceris asparagi*)

SUBSEQUENT YEARS

Maintenance

The annual cycle is harvesting from the end of April until the 21st of June. The top (or bower) is then allowed to develop and build up the plant's reserves for the next season. If the top is cut after this date, the plant will often go into decline. The bower dies down with the first severe autumn frosts. This is then cleared and the crop overwinters below ground.

Fertilising

Maintenance dressings of N, P & K are needed and are

HARVESTING AND MARKETING

Asparagus spears have to be cut slightly below ground. In hot weather the crop will have to be picked daily, in cooler conditions, picking twice a week will suffice. The spear must be picked while the apical bud is still tight.

Generally the crop is picked into a plastic tray and carried off the field for sorting and grading. As soon as possible the crop must be cooled down to 2°C-3°C to aid shelf life. The spears also have to be protected from drying out. If the weather is hot the crop can be held for 10 days or so to even out the supply but discerning customers may notice the resulting reduction in quality.

To present the crop to customers it is usually graded for size and the biggest sold as jumbo, the middle as premium and the small as sprue. Some farms also offer a soup grade which anything else can go into. Some farms put the spears in a polythene sleeve and some put it in bundles of around 0.5kg with a rubber band to secure it.

FINANCIAL DATA

The following table shows indicative costs of production and revenues per hectare. They are based on a medium scale (1 to 2 hectare) operation and assume the crop is established from crowns and contractors are used for management tasks.

Asparagus production - costs and revenues per hectare

	Year 1	Year 2	Year 3 onwards	Average annual margin over 5 years
Spray off weeds with Glyphosate	£30			
Plough	£37			
Power harrow	£32			
Fertiliser @ £120 / tonne	£60	£60	£120	
Plants (crowns) 22,000 @ £165 / 1,000	£3,630			
Planting at 2p/plant	£500			
Herbicide / weed control	£120	£150	£150	
Mowing off		£22	£22	
Ridging up		£35	£35	
Harvesting labour (784hrs @ £5.00/hr)			£3,920	
Total costs	**£4,409**	**£267**	**£4,247**	
Revenue 3.75 tonne / ha				
Retail @ £5.50/kg			£20,625	
or wholesale @ £2,575 / tonne			£9,565	
Margin if sold retail	**-£4,409**	**-£267**	**£16,378**	**£8,891**
Margin if sold wholesale	**-£4,409**	**-£267**	**£5,318**	**£2,255**

In practice, an asparagus plantation should last longer than five years – the longer it lasts the better the profit margins will be, provided soil fertility and product yield are maintained.