

## HARDY FERNS

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I have been interested in the production of hardy ferns for the past ten years and have been producing a limited range for the last five years. These are mostly grown in 3 litre containers for sale to retail outlets.

Ferns have been around for 400 million years, so they say, but hardy ferns only became really popular with British gardeners in the last half of the 19th century. Then hundreds of types were grown by some nurseries but since 1914 interest has greatly declined.

There is certainly a place in the modern garden for hardy ferns. Many forms grow well in damp shady places and stand considerable neglect. There are attractive low growing ferns which grow well in the shaded parts of rockeries, their foliage giving a good contrast to dwarf evergreens. Some of the larger species such as the royal fern (*Osmunda regalis*) or the ostrich plume fern (*Mateucia struthopteris*) grow well in very wet conditions and make excellent marginal plants.

**Propagation.** Division is the simplest method of propagation. Those ferns that grow from rhizomes can easily be divided. The best time is early April as the roots are starting to grow. I pot them straight into 3 litre containers and they are often saleable in 3 or 4 months. Some of the crown-forming species can also be divided satisfactorily. A reasonable selection of hardy ferns can be produced by division, which is a simple low cost method giving quick results when it is practicable.

Ferns can be produced in large quantities from spores which are produced in vast numbers. However, it is a very slow process, taking as many as four years to produce a reasonable sized plant. Hygiene is most important in the early stages to avoid contamination by fungi, mosses, and liverworts.

After considerable trial and error, I now sow the spores on moist sphagnum peat, which has been sterilised, in sealed white plastic boxes. Spores can be collected in autumn and sown the following March. The exception is *Osmunda regale* which must be sown as soon as spores are shed in June or July. The spores germinate to produce a prothallus and these can be pricked out in small clumps into trays when they are large enough to handle, normally after four months. They must be kept moist at this stage to enable fertilisation to take place and after 2 or 3 months the first fronds should be pro-

duced. I overwinter these boxes in cold frames. The following spring the young plants can be pricked out individually into trays at a rate of about 100 to a tray. When large enough they are potted on into 3-in pots and the following year into 3 litre containers.

Some ferns produce bulbils in the axils of the fronds, which will root and produce young plants when the fronds are pegged down on a suitable compost. This method can be used for *Polystichum setiferum* cultivars, but I have yet to get consistent results with it.

Hartstongue ferns (*Phyllitis scolopendrium*), of which there are many attractive cultivars, can be produced by sowing the stubs from the base of dead fronds, cut off close to the crown, on a moist sterilised compost. They may produce a number of small bulbils that can be grown on. I have yet to obtain consistent results from this method.

I have no experience with micropropagation but the potential for hardy ferns is obvious. The main problem would seem to be one of effective marketing.

**Growing on.** I grow all my ferns in a netting house giving 30% shade. This gives the necessary protection from wind and sun in the early summer to produce attractive foliage. The cultivars I grow are all extremely hardy. My nursery is cold in winter. In 1981/2 temperatures were down to  $-20^{\circ}\text{C}$ , but my losses of container-grown ferns in a netting house were negligible.

I use the same compost for fern production as for shrubs. This includes Aldrin, as vine weevil can be a serious pest. Generally I have had no serious pest or disease problems, apart from those in the early stages of spore production.

**Species.** There are very many species of hardy ferns, some attractive — others grotesque. The few I grow at present are listed below. They have been selected with hardiness and ease of production in mind.

1). *Produced by division.*

<i>Athyrium felix-femina</i> 'Minutissima'	<i>Gymnocarpium dryopteris</i>
<i>Blechnum penna-marina</i>	<i>Mateucia struthopteris</i>
<i>Dennstaedtia punctilobum</i>	<i>Onoclea sensibilis</i>
<i>Dryopteris filix-mas</i> 'Crispa Cristata'	<i>Polypodium vulgare</i>

2). *Produced from spores.*

<i>Blechnum spicant.</i>	<i>Osmunda regale.</i>
<i>Dryopteris dilatata</i>	<i>Phyllitis scolopendrium</i>
<i>Dryopteris filix-mas</i>	

3). *Produced from bulbils.*

*Polystichum setiferum* 'Acutilobum'