Dactylorhiza

Dactylorhiza are among the easiest and most rewarding garden orchids. They are both easy to propagate and easy to grow.

In-vitro propagation is straight forward if you can work under sterile conditions for instance in a home-build sterile cabinet: Harvest the seeds right after the capsules start to turn yellow/brown. Sterilise seeds in 1% hypochlorite for 10-15 minutes. Sow on my mineral fertilizer medium or almost any other orchid in-vitro medium. Incubate at room temperature, but not too warm. Follow the natural temperature cycle by chilling in the refrigerator for at least 12 weeks during winter. Most species will be ready for deflasking in spring about 18 months after sowing.

A plate of chilled seedlings ready for soil in March.

D. purpurella seedlings.

D. maculata x *majalis* second year in soil.

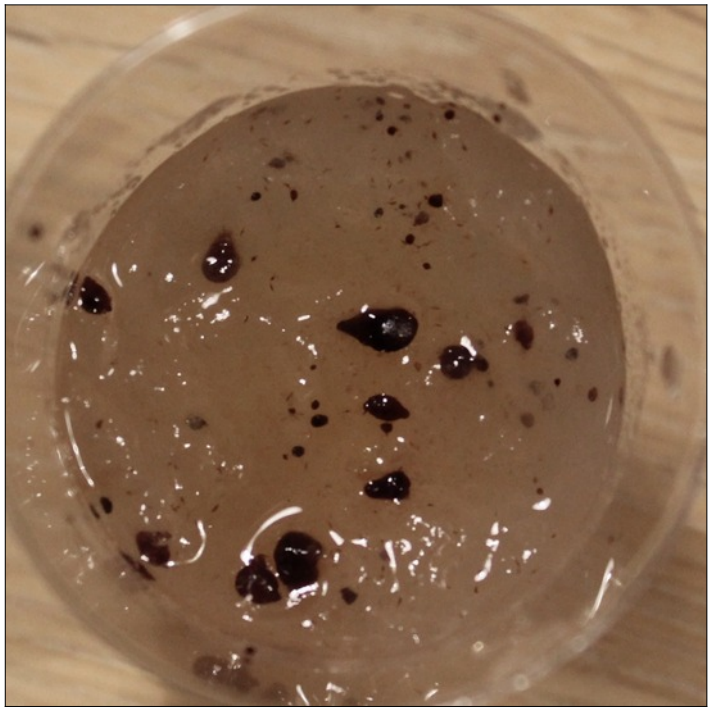
In my experience, even very small *Dactylorhiza* seedlings can be deflasked as long as they have been chilled before deflasking, and as long as the compost does not dry out. I use an almost inorganic mix of 1 part loam, 1 part moler clay litter and 1 part sand (0-4 mm). Use spagnum peat only for the acid bog species and apply only dilute liquid fertiliser for instance 1:10 of the normal strength tomato fertilizer.

Almost all *Dactylorhiza* species grow naturally in wet meadows, fens and moors, which should be kept in mind when finding a good spot for them in the garden. Most will grow well in any good garden soil that is kept moist. Dry conditions may kill them, but the largest threat is the dreaded pathogenic fungi that cause leaf disease and may hit hard in cold, wet summers.

D. maculata x *majalis* third year in soil.

Dactylorhiza self-seed very easily. I have found seedlings between the cobble stones in a paved courtyard and at the center of a large *Miscanthus*, both places are dry in summer and are not typical *Dactylorhiza* habitats. Another good spot for germination is the neglected flower pots on my sister's terrace, often in pure sphagnum peat. A few years ago, I visited a garden with hundreds of seedlings in an area of only five square meters. The ground was covered with a layer of decaying wood chips. I think, what is common for these places is undisturbed soil and no weeding.


Majalis hybrids self-seeded in a courtyard.


D. sambucina is so far the only tricky species in vitro.

Dactylorhiza hybridizes very freely, so many seedlings are of hybrid origin unless you are very careful to handpollinate flowers that have just opened and cover each pollinated flower with a piece of sticky tape to keep the flies and bees away. That is also why many *Dactylorhiza* "species" offered for sale at shows and plant markets are often hybrids from self-seeded plants found in gardens and increased vegetatively due to hybrid vigour.

Vegetative propagation

You can vegetatively bulk-up *Dactylorhiza* quite easily. The method is described in Cribb and Bailes, 1989: "*Summer propagation. The method is used just as the flowers begin to fade (which will be any time from early spring onwards, depending on the plants being grown, and the conditions under which they are housed). Remove the plant from its pot and separate the new tuber from its rosette by cutting the stolon, or at the place of attachment, The rosette and old tuber, which should have most of the root system intact, should then be repotted in the normal way, as should the new tuber. Aftercare of the two differs. The new tuber should immediately be treated as if dormant, whilst the flowered shoot and old tuber should be kept in growth for as long as possible, to allow the maximum opportunity for new tubers to develop before dormancy. Do not allow seed set, or the rosette will die off more rapidly, and reserves will be taken from tuber production to seed production. Shady, moist conditions will delay dormancy in those species which are summer, or dry season resters. After the rosette has died down, give the normal conditions for rest, and thereafter treat normally*". The process is shown in Ian Youngs Bulb log on the Scottish Rock Garden Club webpage and on the Scottish Rock Garden Club forum.


Fungal or bacterial disease?

References:

Cribb and Bailes. 1989. Hardy Orchids - Orchids for the garden and frost-free greenhouse. Page 43.

InVitroOrchids.dk

D. praetermissa.

D. incarnata f. ochrantha.

D. purpurella.

D. maculata.

D. ochroleuca.

D. saccifera.

D. sambucina, more difficult that the other *Dactylorhiza*, both in the garden and in the lab.

D. praetermissa x maculata.

D. maculata x majalis, spotting was quite variable.

D. ochroleuca x yellow *sambucina.* I hoped for some easily grown, yellow dacs, which should not be too much to ask given the colors of the parents. What I got was different shades of purple with a yellow tone.

D. maculata x majalis from the same cross as above.

D. iberica. A lovely plant and easily propagated from seeds, but it did not last long in the garden, the Danish winters are probably too cold.

D. praetermissa seedling bed.

A remake of Dactylorhiza Foliorella gx (foliosa x purpurella). There is a bit of color variation, but some seedlings have a very deep intense purple color.

Dactylorhiza are also nice in a vase though the smell is not entirely pleasant.

Natural Sphagnum bog.