

# Growing fritillaries in clay granules



*Fritillaria assyriaca* subsp. *melanthera*  
four years after sowing in Seramis  
- it flowered after three years

Photographs: Paul Cumbleton

PAUL CUMBLETON describes how germination and growth of *Fritillaria* (and *Calochortus*) can be improved using Seramis

**G**ROWING BULBS from seed is very rewarding, but it can seem to take a long time from sowing until first flowering. So, anything that could reduce the wait would be most welcome. In recent years I have been raising bulbs – mainly *Fritillaria* and *Calochortus* – from seed using a clay granule growing medium called Seramis. While developing this technique I

realised that one of the benefits was a significant saving of time. In particular, *Fritillaria* seedlings grow so well in Seramis that the time taken from sowing to first flowering can be reduced by a year. This article describes my techniques.

#### What is Seramis?

Seramis is a growing medium developed and made in Germany. It

is composed of reddish-brown granules, 90% of which are in the size range of 2mm to 4mm, with 10% consisting of finer particles. It is made from clay from the Westerwald region. This clay is mined from deposits laid down 25-40 million years ago during the Tertiary period, and consists mainly of the minerals kaolinite, illite and quartz. It also contains iron and ➤



A 13x11cm pot filled with Seramis, ready for seed sowing



*Fritillaria purdyi* bulbs 2 years after sowing. Bulbs raised in Seramis are on the left, those raised in compost are on the right - note the difference in size

titanium compounds. The clay becomes reddish-brown in the firing process as the iron oxidizes.

The production process involves first liquidising the clay and then using a special technique to make it porous. It is then dried, broken into pieces, sieved and fired to make the final product. It has a bulk density of 390g/l and the pores make up more than 80% of each granule. This high porosity means it has a high water-absorbing ability (it behaves a bit like a sponge), capable of absorbing more than 100% of its own weight in water, while maintaining excellent oxygen supply at the roots. It has a neutral pH value of 7.

More information about Seramis can be found on the importer's website at [www.seramisuk.co.uk](http://www.seramisuk.co.uk) and it can be bought at some garden centres or from websites .

### Method

I use deep plastic pots, 13cm deep and 11cm diameter. A circle is cut from some old shade netting to put in the bottom of the pot – this helps to stop the Seramis trickling out of the rather large drainage holes, and to prevent any deeply delving young bulbs from escaping by the same route. Next, I fill the pot with

Seramis nearly to the brim, leaving just enough room for a topping of grit later. I use the Seramis straight out of the bag – I do not sieve it or prepare it in any way. Then I sow the seed on the top of the Seramis.

Because I intend to leave them until they flower, I aim to sow thinly so there are not too many in a pot, so I take my time and use tweezers to space the seed out, putting only 7 to 10 seeds per pot. Then I cover the seed with about 1cm of grit and water them. For species requiring stratification I put them outside to expose to winter cold.

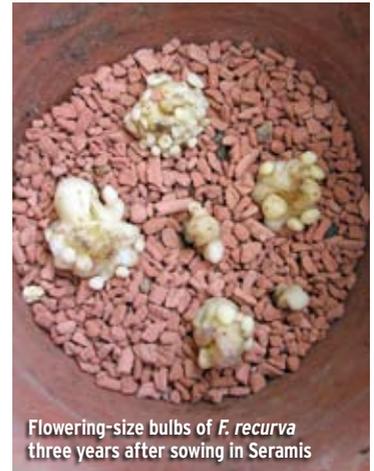
Also, at first, I sowed in normal seed pots and pricked out later in the usual way. I no longer do this as the experiments showed there was another way to save time and get better results: sow in Seramis and leave them until they flower. The Seramis does not compact or lose its structure so there is no need to repot. You save on time and on compost, making up somewhat for the initial expense of Seramis.

Seramis contains no nutrients, so regular feeding is important. As soon as I see germination starting I give a first feed of a half-strength balanced feed such as Chempak No. 3 (NPK 20:20:20). After that it is important

to feed at every watering. I use the balanced feed for about the first three or four waterings then switch to a high potash feed for the rest of the time. For the first year I always use half-strength high potash feed, but switch to full strength in the second year. Treat them as you would any other bulbs while dormant.

In addition to this, in the second and subsequent years, I use a feeding tip supplied by Ian Young of the Scottish Rock Garden Club – sprinkle a teaspoonful of sulphate of potash over each pot. For seedlings, he does this as soon as the leaves are full size. If this has been very early in the season, a second dose is added in spring. For adult bulbs it is added just after flowering.

There is one further important point about feeding. I have found that anything grown in Seramis seems to require additional trace elements – i.e. more than may already be in your liquid fertiliser. I do not know why this should be so, but it is. So I give each pot a dose of soluble trace elements twice a year, each time at half the strength on the packet. I do this firstly soon after they come into growth, and the second time about half way through the growing season.



## Results

When I first started developing this technique I would divide each packet of *Fritillaria* seed into two and sow half using Seramis and half into normal seed compost, in order to be able compare results. However, having done this dozens of times I no longer need convincing. The results in Seramis are so superior that I now sow in this exclusively and currently have over 150 *Fritillaria* sowings happily growing in Seramis (not to mention 50 pots of *Calochortus* that also respond well to this approach).

I have tipped out lots of pots one and two years after sowing to see the differences. In every case, more seedlings had survived in Seramis, and in every case the young bulbs were far larger than those sown in seed compost.

However, while Seramis proved best for the majority of *Fritillaria* and *Calochortus* I have tried, there are a few exceptions. In particular, *Fritillaria* that like to be more moist than

most during growth do better in a standard bulb mix. This is presumably because of the higher moisture holding capacity of compost.

While most of my experience is with *Fritillaria* and *Calochortus*, I have tried small numbers from other genera with success. However, one group of bulbs that do not do well in Seramis are the winter-growing bulbs from South Africa. I suspect that this is to do with fertilising. Bulbs from this region need much less feeding than most other bulbs. They also come from soils that are very low in phosphate and are best fed with a phosphate-free fertiliser. Grown in Seramis, it is difficult to get the feeding regime just right.

## Growing on

Bulbs raised in this way can be grown in Seramis permanently, or moved when adult into a normal bulb mix. If left in Seramis you must feed at every watering and give additional trace elements. Repotting need only be done when the bulbs are over-

crowded. At RHS Garden Wisley we often move them to clay pots when they are adult, just because they look more attractive on display, but Seramis works equally well in clay or plastic pots.

The longest I have had bulbs in Seramis from sowing is six years, and I am keeping some in Seramis and some in a normal bulb mix side-by-side to compare how they perform in the long term. In the short term, the superior performance of those in Seramis has been obvious.

## Conclusion

I am not sure why cultivation in Seramis is so successful, but I suspect it is due to the frequent fertilising and high porosity of the medium.

Raising *Fritillaria* and other bulbs in this way can cut at least a year off the time from sowing to flowering, compared to seed sown and grown in normal mixes. Time is also saved due to there being no need to prick out seedlings or to repot. I recommend you try this for yourselves, and I am sure you will be delighted with the results.

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