



Tissue Culture Roses

Bill Smith

I fell in love with old roses way back when I was a teenager with my first *Sunset* garden book on roses. There was only one small photograph of an old rose within its pages. It was labeled 'Autumn Damask'. That photo hit some kind of nostalgic memory in me, and I fell in love with old garden roses then and there. I have been admiring them and learning about them ever since.

I've wanted to start an old rose company for decades now, and we're finally at the point in our lives that we can do just that. I approached the curator of The Friends of Vintage Roses (TFoVR), Gregg Lowery, with just a simple request to get a few cuttings to experiment with propagation through plant tissue culture. That propagation experience was part of my PhD work in the Plant Science department at the University of Connecticut. Roses can be pretty easy to propagate through tissue culture, but I had experience only with miniature roses at the time. While at the University, I was teaching assistant for three semesters for the Plant Tissue Culture Lab, and we propagated miniature roses as an easy lab for the students to learn shoot multiplication. For available



'Souvenir du Dr Jamain' (left) (photo by D. Schramm); buds in Petri dishes (top) are 'Souvenir du Dr Jamain'; the self-dividing plantlet 'Erinnerung an Brod' (center); red and blue lights in grow room (above) (photos by B. Smith)



'Variegata di Bologna' (photo by D. Schramm)

space I have just a spare bedroom in an old Victorian, so tissue culture is really the only way I could start a collection.

After getting to know Gregg more and discussing that we ultimately wanted to get these old garden roses into commerce again, he surprised me and gave us access

to the entire old rose collection. Gregg said that TFOVR believes that getting them back into commerce is the best way to preserve these old roses. I couldn't believe it! All these wonderful old Albas, Gallicas, Damasks, Centifolias, Mosses, Portlands, Bourbons and Hybrid Perpetuals were within our reach. What an amazing company that could make. So I spoke with my old college buddy and the two of us decided to go for it. We're starting an antique rose company in Connecticut, and we'll be propagating them through plant tissue culture. We would be able to establish a collection here in the Northeast, assist in any propagation needs of TFOVR and get all these beautiful old roses back into commerce. We may even be able to assist in getting additional collections going in the historic old homes and cemeteries throughout New England.

Gregg has been wonderful in sending us cuttings during the growing season. Once received, these bud cuttings are sterilized and plated out to petri dishes containing nutrient media to get the buds to break. After a few weeks, the healthy young shoots are transferred to culture tubes, then later to baby food jars as they multiply. We are still working on developing the best cultural conditions for such a diverse collection. When everything goes right, the little shoots multiply by about seven times over 6–8 weeks. The media promotes bud break. So from one shoot in six weeks we'll have seven shoots that will then get separated and transferred to fresh baby food jars. Then after another six weeks, we'll have forty-nine little shoots to transfer and so on. Once we have enough, we then transfer the individual little shoots to rooting media. Once rooted, we'll pot them up and grow them.

I've noticed that some of these old cultivars aren't multiplying very well, and the foliage looks odd in tissue culture. I'm guessing that they must be internally contaminated with something that is holding them back. That may make sense with such old cultivars. It does, however, appear that we can clear these plantlets with an antibiotic treatment. After treatment they appear to be much healthier and normal in appearance. It will be interesting to see if the treated plantlets grow better than the source plant they were collected from. It's a possibility.

Our next step is to find more suitable laboratory and greenhouse space so that we can expand production beyond my spare bedroom. We are currently exploring farm land in Connecticut. Hopefully, we'll have production in full swing by next summer. Be watching for us over the next couple years as we begin selling mail order online. ■