Fall Meeting and The Scape Conversions

You know you're a hemoholic when after spending the full day at the ODS Fall Meeting talking hems with other addicts, you go home and check out the daylily electronic round robin to get yet another dose of hem-talk. Yes I am a hemoholic! (My family has been aware of my little dirty secret for some time and now friends and neighbours are starting to suspect that something is amiss).

It seemed rather ironic that as I sat there perusing emails that a member of the robin posted a question about scape conversions. Didn't Gary Schaben just provide a brief overview of this technique as part of his presentation earlier that day? I felt obligated to reply to the robin since I was very interested in Gary's technique and had taken some notes during his presentation. The following is an overview of Gary's scape conversion process and a brief description of the meeting.

Gary uses an 18G (gauge) syringe needle tip for this technique. The 18G is a pretty large needle and he feels that solution can drip through this diameter needle fairly easily. The needle tip is inserted into the lumen of the scape (the hollow area in the center of the scape) about 2-3" below a bud cluster. The reservoir end of the needle tip is facing upwards so that it can be filled with the colchicine solution.

One of the keys to this technique is the timing of the bud development. From his slides it looked like the largest bud was about 1 - 1 1/2" long. At this stage of development the drug (colchicine is used medically to treat gout) is able to affect the still developing anthers within the bud and possibly convert them to tetraploid tissue.

Gary uses a 0.025% (by volume) concentration of colchicine and water with a few drops of DMSO (a solvent) and a few drops of blue food colouring in the mix. The purpose of the food colouring is so that you can see the buds have taken up the solution since the sepals exhibit the blue colour.

The needle tip reservoir is filled with the solution a few times over the first day or two. He also recommends watering the plant after the treatment, which encourages the solution to move up the scape to the buds. Gary does not routinely seal the needle tip but did suggest covering it with aluminum foil to prevent degradation of the drug by sunlight. Colchicine comes in amber bottles to prevent degradation. It was also speculated that it might be useful to cover the solution with foil in the traditional cutting of the crown conversion process. This is because the cells do not require light for the few days that they are being treated and you do want to prevent the chemical from being degraded and therefore lessening its effectiveness.

When the treated bud opens, it is often deformed since there is a combination of diploid and tetraploid tissue involved. It is still necessary to check the anthers with a microscope to ensure that you have a successful conversion.

To me, this process offers a few advantages. Perhaps most importantly, you do not risk losing that valuable diploid which has those characteristics you want to introduce to your lines (why did you want to convert it in the first place?). At the most you lose a scape and always have the option to treat another scape or try again next year, but you do not lose the plant as can happen with the traditional technique. It was pointed out that with this technique you do not get to see an actual converted bloom on a tetraploid plant, but you do have the opportunity to get the genetics into your line, which I think is the whole purpose of the exercise.

By Dave Mussar