Propagation of *Drosera magnifica* Rivadavia & Gonella *in vitro*

Manuel Reimansteiner • Salzstraße 4 • 2102 Hagenbrunn • Austria • m-re@gmx.at

Most species of *Drosera* sect. *Brasiliae* comprise easy-to-propagate taxa *in vitro* with a high rate of multiplication on media without cytokinines (Fig. 1). However, *Drosera magnifica* Rivadavia & Gonella differs from other species in this section in the lack of shoot production of young plants on "plain media". Therefore, plant hormones are vital to clone a substantial amount of genetically different plants in a short amount of time and help to establish it as quickly as possible in cultivation.

Figure 1: *Drosera villosa* A.St.-Hill. - a species with a high self-multiplication within *Drosera* sect. *Brasiliae*.

Seeds of *D. magnifica* were surface-sterilized in a solution containing 25% of the original Murashige & Skoog salt and vitamin-mixture, 4% PPM™ (Plant Preservative Mixture), and 1.6 ml l^{-1} Polysorbate 20 as a wetting agent. Three different soaking durations were tried lasting 6, 8, and 10 hours, respectively.

The *in vitro* medium (No. 1) consisted of 30% of Murashige & Skoog-medium including vitamins, 25 g l^{-1} sucrose, and 2.75 g l^{-1} Gelzan™. The initial pH of the medium (5.7) prior to autoclaving was adjusted by 0.5 M KOH and HCl.

Each seed was transferred aseptically – without rinsing in sterilized, deionized water – on ca. 7.5 ml of medium in gamma-sterile 50 ml Falcon™ centrifuge-tubes. The racks of tubes were then placed under white fluorescent lights (25 µmol m^{-2} s^{-1} PAR) at a light/dark-regime of 15/9 hours and a temperature of 22±1°C.

Figure 2: Six different clones of *Drosera magnifica* growing inside the Microbox™ vessel.

First germination occurred after 24 days with an average germination time of 32 days. In total ca. 67% (n=24) of the sowed seeds germinated. The best results were achieved when sterilizing the seeds for 6 hours, whereas germination consistently decreased with longer sterilization times. It is further recommended for *Drosera* to use a pH ranging from 5.7 to 5.8 or a buffer (e.g. MES monohydrate), as the plants accumulate H^+, which results in a more acidic medium.

After 174 days the plants were transferred to 80 ml of medium (No. 1) into vented Microbox™ - vessels (Fig. 2, red HEPA-filter), which allows a constant gas exchange. The individual clones were not multiplied so far, however, will be replated soon on new media (No. 1) supplemented with 0.4 mg l^{-1} 6-BAP for shoot induction. As *D. magnifica* generously produces roots *in vitro*, there will not be the need of using auxins before hardening off *in vivo*.