

mities; my *D. × nagamotoi* has ragged petals. Some hybrids will be too malformed to be of value. All hybrids may not be so adversely affected by colchicine. *D. × beleziana* does not seem to exhibit much deformity, while *D. × obovata* is extremely malformed and not worth reproducing.

I wish anyone else thinking of undertaking a treatment project good luck. It is fun just to think of the possibilities. More people will likely want to simply cross-breed the different polyploids rather than use a dangerous chemical. I do hope to see others produce some outstanding new cultivars through the use of colchicine.

References:

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COLCHICINE HAZARDS

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(While Ivan Snyder's experiments are exciting, we wish to ensure that the biohazards associated with colchicine are clearly understood by readers of *Carnivorous Plant Newsletter*. We invited Sean Barry, from the University of California, to comment on the compound—BAMR)

Colchicine is by far the most dangerous chemical that home-based cell culturists might encounter in their experiments. It is part of a disparate group of chemicals that are capable of altering genetic material, in this case by disrupting the mitotic spindle that aligns and "tracks" the chromosomes during cell division. Cell division is thus arrested, and the result is polyploidy, or multiple sets of chromosomes (>2) within a single cell. This is potentially desirable in plant genetic engineering, but extremely hazardous if it affects certain tissues in the user, particularly germ cells (sperm and ova) and the developing embryo. For this reason, colchicine is classed as a teratogen (a substance that causes birth defects) and may also be a potential carcinogen. Colchicine is also very toxic. A single oral dose of as little as 3.0 milligrams (that is 0.003 grams, or 0.0001 ounce) has caused death, and the rat LD50 (i.e. the dosage that is lethal to about 50% of an experimental group) is as little as 0.125 milligrams per kilogram of body weight (and is presumably comparably toxic to humans). The material is equally toxic when ingested, inhaled as powder, or absorbed through the skin. Potential users of colchicine should first be trained in proper storage, handling and personal protection measures, and they should observe state and local disposal regulations.

References: Mallinckrodt-Baker and Abbott Labs Material Safety Data Sheets for colchicine reagent and pharmaceutical preparations.