Germinating Iris Seeds

By Norman C. Deno

Juno, oncocyclus, and regelia iris and other iris such as *I. aphylla*, *I. italica*, and *I. zenaidae* have seeds that are notoriously difficult to germinate. A procedure has now been found whereby fully developed seedlings of *I. magnifica* have been achieved in just FIVE MONTHS from the time the flowers were pollinated. Anyone growing these iris species is strongly urged to try this "cold green" procedure. If it proves to be widely applicable, it will increase the availability of these beautiful iris. The procedure is as follows: Flowers of I. magnifica were hand pollinated using a small paint brush. On June 12, 2006, four seed capsules were collected just as the outermost cover of the capsule started to turn from green to brown. The seeds were immediately separated, placed in moist high wet strength paper towels, and placed in the refrigerator at a temperature of 40 degrees F. The pads with the seeds were enclosed in loosely folded polyethylene bags as described in my books on seed germination. The pads containing the seeds were stacked so the developing roots traveled downwards along the inner surface of the towel.

On September 16, the pads were examined and, astoundingly, 60 of the 120 seeds had germinated. The seedlings were kept at 40 deg. for another week. By this time they had developed an inch long root and the start of a leaf. They were then shifted to 70 degrees and lined into pots of soil that had been surface sterilized by pouring boiling water over the soil three times and then allowing the soil to cool for several hours before planting.

The pots were placed under fluorescent lights indoors. Within 7-14 days after the shift to 70 degrees, the single leaf developed to its full length of five inches. The seedlings

were still healthy two months later. The seedlings will be grown indoors under the fluorescent lights until next spring. Then they will be dried off over the summer and planted outdoors in the fall.

Germination continued at 40 degrees over the next six weeks. By then 36 more had germinated, making a total of 80% germination. These later germinations developed somewhat more slowly, suggesting that they had ripened beyond the optimum time. The seeds that did not germinate remained firm and were likely too far advanced in the ripening process.

A separate twenty seeds were kept at 70 degrees as a control. The surprising result was that these seeds failed to produce a single germination by Dec.1. Green seeds have been used before with success but always with seeds that developed impervious seed coats, and germination was always at 70 degrees.

The literature on germinating Aril Iris seeds, and particularly the slicing technique, has been recently reviewed in an extensive article by Elm Jensen entitled "Another Look at the Forced Germination of Iris Seeds," published in the 2005 Yearbook of the Aril Society International. This topic was also the subject of Chapter VI in the First Supplement of my book *Seed Germination Theory and Practice*.

It was proposed in this Chapter that these Iris seeds have an impervious inner membrane surrounding the embryo. This would explain the success of the slicing technique. It would explain why these seeds germinate better in outdoor treatment where the temperature oscillations expand and contract the membrane leading to ultimate rupture much the same way impervious outer seed coats are ruptured. It would explain the erratic nature of the germination and why germination is so extended. A few seeds might germinate

immediately because the impervious inner membrane was not perfectly formed. Finally, an impervious inner membrane could have survival value. By extending germination over years, they could survive periodic wipe outs by fungi. Incidentally, these periodic wipe outs are evident in many of our native species here. They survive only by abundant self sowing.

Editor's note: Norman Deno has indicated that at the age of 89 he has retired and is no longer distributing copies of his Seed Germination & Practice publications.

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