PROPAGATION OF ALASKA WILD IRIS, IRIS SETOSA SPP. INTERIOR

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Seeds of Alaska’s wild iris, Iris setosa spp. interior, do not germinate immediately upon harvest. Seeds require a period of stratification (cool, moist pretreatment) ranging from 120 to 150 days at 4°C (40°F), but germination rarely exceeds 40%. This germination pattern is similar to other Iris species and hybrids in which dormancy may persist for several months followed by intermittent germination over several years. The purpose of this experiment was to test various treatments and germination conditions to determine possible methods of improving germination percentages of Alaska’s wild iris.

Seeds were collected near Fairbanks in August, 1985 and stratified in moist peat for 125 days at 4°C (40°F) for 125 days. Seeds were removed from the peat and soaked in water or 1000 ppm gibberellic acid (GA) for 24 hours at room temperature. Seeds were sown on moistened filter paper in petri dishes. Half of the dishes were enclosed in aluminum foil to exclude light. Seeds were germinated at 21°C (70°F) constant temperature or in alternating temperatures at 25°C (77°F) day and 10°C (50°F) night for 16 and 8 hours, respectively. Germination percentages were counted after 7 days.

To test different seed treatments under greenhouse conditions, seeds were collected near Fairbanks in September 1985 and stratified in moist peat for 125 days. Seeds were removed from the peat and soaked in water or 1000 ppm gibberellic acid (GA) for 24 hours at room temperature. Three seeds per cell were sown in 6-packs filled with a commercial peat-lite germination mix. Containers were enclosed in black or clear plastic bags, then placed in the greenhouse (minimum air temperature = 21°C; 70°F). The bags were removed after 10 days. Seedling emergence and the percentage of emptiness cells were recorded after 30 days.

Alaska iris pods average 3.22 cm (1.25 inches) in length and contain an average of 69.8 seeds per pod (range 0 - 147 seeds). There is no correlation between pod length and seed number. In other words, the biggest pods do not necessarily contain the greatest number of seeds. Each gram of seeds contain an average of 204.3 seeds (92,668 seeds per pound) with an average seed weight of 5 mg (.00015 oz).

After stratification, seeds germinate best in the dark at constant temperatures and after soaking the seeds in 1000 ppm GA for 24 hours (Figure 1). In the greenhouse, seeds sown in a commercial peat-lite mix germinated best when stratified seeds were soaked in 1000 ppm GA, then sown in flats that were enclosed in black plastic bags for 10 days (Figure 2). Stratified seeds that were treated with GA and sown in flats that were covered with black plastic had fewer empty cells per 6-pack container than the other treatments (Figure 3). In order to have at least one seedling in each cell of a 6-pack container, the following sowing rates are recommended:

- Water soak, clear plastic = 7.4 seeds per cell
- Water soak, black plastic covering = 4.3 "
- GA soak, clear plastic covering = 4.3 "
- GA soak, black plastic covering = 3.6 "
Figure 1. Germination percentage of Alaska iris seeds that were stratified for 125 days; soaked in water or 1000 ppm gibberellic acid for 24 hours; then germinated in light or darkness at constant or alternating temperatures.