
Crosstalk: Seed Germination

How do you germinate arilbred seed? How do you germinate pure aril seed?

Howard Shockey: My practice is the same for both aril and arilbred seed, but may not apply to areas having different climatic conditions. In early October, the seed is sanitized in a 50% clorox solution for 30 minutes, rinsed well two or three times in water, and left in clear water to soak for 24 to 48 hours. The water is then poured off, and the seed planted directly in the ground around October 15. If I plant earlier than this, some will germinate before really cold weather and be lost during the winter. If I plant later, the seed apparently are not in the ground long enough to foster good germination.

The seeds are planted about 1¼ inches deep and spaced 8 inches apart for arilbreds and 5 inches apart for arils, in rows 12 inches apart. The seedlings remain in place and are not transplanted until after maiden bloom. I am fortunate to have the space to do this, for it saves a lot of labor in transplanting. Seedbeds are kept damp at the seed level throughout the winter, with increased watering beginning about March 1. Germination of aril and arilbred seed usually begins in early April, but this varies with the weather.

Aril seedbeds remain in place for up to 10 years, with water being withheld following each bloom season, as is done for the mature plants. It has been necessary to leave arilbred seedbeds in place for the second bloom season, for many seeds do not germinate the first year. Our weather conditions favoring germination last for a relatively short time, and then it soon becomes too hot. Germination of aril and ¾-bred seed is very erratic—some years none will germinate the first year; some will germinate during early fall a year after planting.

Occasionally, I will plant seed from wide crosses in cans (with plenty of drainage holes punched in the bottom) and sink the cans in the ground up to the can lips. This is

primarily to save space, as the anticipated germination of such seed is very low.

Luella Danielson: I have tried many ways and have found that the most success comes from natural planting in the ground (I'm referring to field planting in my area). They come up quite well, but not all seeds come up the same year. This is not acceptable with most growers, because of lack of space or patience. But when we want instant plants we destroy nature's way of germination, and soon the slow-germinating part of the planting will be destroyed automatically. Then what? Not many new hybridizers will ever see nature, only "instant growing." Some of the most beautiful irises I have germinated came up in later years of the same planting. This alone tells me something.

John Wight: We use normal propagation procedure. Our loss rate is high with $\frac{3}{4}$ -bred and pure aril crosses, when there are few seeds in the pods.

Lin Flanagan: I germinate both arils and arilbreds by planting outside in my seedbeds. Germination is sometimes slow (two or three years), but the percentage that germinate is usually pretty good (although I do not keep detailed records).

Harald Mathes: Because of my limited garden space, I cannot grow many seedlings every year. So I raise only those that I think are most important. Important seeds are embryo-cultured, so most of my plants come into the world out of a test tube. Seeds that are in good supply are usually germinated in clear plastic bags, in a sifted mixture of peat moss and sand. The bags are labeled and stored at temperatures at or slightly above the freezing point. In spring when it warms, the seedlings can easily be pulled out of the loose stuff and planted in soil in little pots.

Geoff Wilson: I use forced germination (not embryo culture) for both arilbred and pure aril seed. This method gives me all the seedlings with which I can reasonably cope in any one season, as I get better than 80% germination and seedlings when I want them. The timing of germination is important.

My seedlings are started as early as possible (February). As they are very tender, they are raised in greenhouse conditions, then repotted and hardened off as the season progresses. I need the longest possible growing season to build up stout plants that will survive the first winter. Seed is sometimes germinated conventionally (sown in pots), if I have a surplus of arilbred seed. It is pointless to sow onco-cyclus seed in this way, since its natural germination time is late summer. Any seedlings produced rarely make it through the winter.

Sharon McAllister: I've tried in-the-ground planting, with some success for halfbreds previously subjected to cold stratification, but for the most part it isn't appropriate for the type of crosses I make. I've also tried forced germination, peeling and chipping the seeds. While this is quite effective, especially for recalcitrant subjects, I find it isn't always necessary.

For the most part, I use enhanced germination techniques for arils, arilbreds, and wide crosses alike. I start with warm stratification, follow it with cold stratification, then alternate the warm and cold treatments until the seeds germinate. I grow the seedlings under lights over the winter and line them out in early spring when the mature arils and arilbreds have broken their winter dormancy. I'm still experimenting with the temperature and duration of the various cycles, trying to improve my survival rates.

[See McAllister's article, "Enhanced Germination Techniques," on page 12.]

Caroline Ryan (hybridizing robin): I've been doing a series of experiments on germination of pure aril seed from the seed bank. I now have an *I. lortetii* and two *I. atropurpurea* growing well, and I'm hopeful of many more successful germinations. I'm in the middle of it now, and it's probably a three-year project, considering that they don't all germinate at once like radishes—more's the pity. 