PROPAGATION PROTOCOL FOR

Jack-in-the-pulpit (*Arisaema triphyllum*)

| Jan Schultz

KEY WORDS
Araceae, container, wildflower

NOMENCLATURE
USDA NRCS (2004)

Jack-in-the-pulpit (*Arisaema triphyllum* (L.) Schott [Araceae]) is a unique, shade-requiring species that is found in rich, moist deciduous woods and floodplains. It is a long-lived species (25+ y) and will spread and colonize over time. The flower is an unusual green and maroon striped spathe surrounding a fleshy, maroon-colored spadix that bears the tiny, embedded flowers. It flowers from March to June and is pollinated by small flies. The showy berries each contain 1 to 5 seeds and ripen in fall. When ripe they are bright red, have the consistency of a ripe tomato, and are an attractive food source for birds such as the wood thrush. The unusual flowers, attractive 3-parted leaves, and showy fruits make this species an attractive addition to a shady native plant garden.

Leaves and fruits contain calcium oxalate that can irritate the skin so it is important to wear gloves when collecting and cleaning the berries. Seeds need to be cleaned as soon as possible after collection because they are recalcitrant and lose viability if allowed to dry out. We smash the berries with a large spoon or by hand, then separate the seeds by rinsing them in a strainer and picking out the large debris. Following cleaning, we immediately place seeds into cold moist stratification for 60 to 90 d by mixing them with an equal amount of moist perlite and placing the mixture into a Ziploc®-style bag or a Rubbermaid®-style container, which is then kept in a refrigerator. Anecdotally, we have observed that we can toss ripe fruits directly into a restoration site and obtain high rates of germination the following spring.

Jack-in-the-pulpit (*Arisaema triphyllum*)
Photo by Joseph G Strauch Jr

For container seedling production, we have found that Jack-in-the-pulpit grows well in 24-cell flats, where each cell is 5 cm (2 in) in diameter and 10 cm (4 in) deep. We have noted that it can be grown in virtually any container as long as the diameter is greater than 5 cm. Containers are filled with Scott's Redi-earth® Plug & Seedling Mix (Sun Gro Horticulture, Canada Ltd) that contains a mixture of 55% to 65% Canadian sphagnum peat moss, horticultural grade vermiculite, a starter nutrient charge, dolomitic limestone, and a wetting agent. We sow 2 seeds into each cell by hand and barely cover the seeds with the growing medium, which usually produces a seedling in each cell. Germinating seeds and seedlings need to be kept evenly moist during establishment. Within a week or two of germination, extra seedlings can be transplanted. If 2 seeds germinate, we allow both to grow in the cell.

Seedlings are grown in a greenhouse at a constant 18 °C (65 °F) under partial shade. We find that the starter fertilizer in the medium is sufficient for growth. In early to late spring, seedlings are moved into a cold frame with 40% shade cloth that diffuses sunlight to prevent scorching of the plants. In early summer, when danger of frost has passed, we move the plants into a shadehouse to continue growth and, as late summer turns to fall, undergo hardening with ambient conditions. To encourage hardening, we irrigate plants less frequently during late summer and fall.

During the first growing season, seedlings form a small corm and 1 or 2 whorls of leaves. Seedlings need to be handled carefully during extraction from containers because the seedling only produces a corm, not a root-tight plug. We have successfully outplanted corms in spring, summer, and fall. Outplanted seedlings flower after 1 or 2 y in the field.

REFERENCE

[USDA NRCS] USDA Natural Resources Conservation Service. 2004. The PLANTS database, version 3.5. URL: http://plants.usda.gov (accessed 11 Jan 2005). Baton Rouge (LA): National Plant Data Center.

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