

Growing Redcedar in Florida

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Introduction

Two species of redcedar grow naturally in Florida. Eastern redcedar (*Juniperus virginiana*) occurs throughout the eastern United States and is one of the most widely distributed conifers east of the Mississippi River. Southern redcedar (*J. silicicola*) is much more common in Florida and is adapted better to our hotter climate and more alkaline soils than eastern redcedar. Southern redcedar is often confused with eastern redcedar which has thicker twigs, larger fruits, and less pendulous branches than the former.

Redcedars have close-grained, aromatic, and durable wood which affords them many uses, including pencil wood, fence posts, cabinet and furniture wood, ornamental landscape trees and Christmas trees. It is also an excellent tree to use as windbreaks, livestock shelter and shade.

Biology

The flowers of redcedars are small, inconspicuous, and are borne on the ends of or along short branchlets in the spring. The yellowish male flowers form short catkins while greenish female flowers are composed of several or more pointed scales, some or all bearing 1-2 ovules. Female flower scales become fleshy and fuse to form small, indehiscent strobili commonly known as "berries". As the greenish immature berries ripen, they become reddish-brown to bluish-black and are usually covered with a whitish waxy bloom. There are usually 1-4 brownish seeds per berry but many of the seeds may contain no endosperm or embryo. This characteristic is an unfortunate constraint to redcedar seedling production since seed lots vary annually in percentage of filled seed and in germinability. Seeds are dispersed in the fall primarily by birds but ripe fruits will remain on the trees.

Planting

Redcedar seeds are collected in the fall either directly by hand or by vigorously shaking the branches to dislodge the berries onto a canvas or plastic sheet spread on the ground surface. Since the number of filled seeds varies widely from tree to tree, it is advisable to perform a cutting test on at least 20 seeds from each tree before collecting from that tree. If more than 50% of the seeds from a particular tree are empty i.e., no white endosperm and embryo visible, than that tree should be avoided.

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After berries have been collected, twigs, leaves and other debris are also inadvertently present and may be removed by fanning or forced-air blowers. Seeds are extracted by passing berries through a macerating seed cleaner which uses water to float away pulp and empty seeds.

The seeds of both eastern and southern redcedar have dormant embryos and must be fall-sown or cold-stratified and either fall-or-spring-sown. Stratification is conducted by placing cleaned seeds in moist peat moss (1:4 by volume) in cans or jars. Containers are sealed and refrigerated at 40°F for 2-3 months for best germination results. Examine the contents of each container every two weeks and remoisten the peat moss. If during these inspection periods, seed coats begin to split open, then the seed must be planted immediately.

Individuals may prepare seed beds to grow their own redcedar seedlings by locating areas of moist soil with good drainage which are shaded partially from the afternoon sun either by overstory trees or with shade cloth. If beds must be located in the open, shade cloth or wooden lathe shade should be located approximately 1 meter above the bed. Redcedar seeds germinate with much higher success if the soil is kept cool and moist.

Beds should be at least 1 meter wide and as long as necessary. An analysis should be performed on soil samples from the beds to determine what fertilization, if any, should be performed prior to seeding. If fertilizing is required, fertilizer should be worked thoroughly into the soil to a depth of about 15 centimeters and afterwards the bed surface should be raked level and smooth before planting.

Cold-stratified seeds should be sown in line or drills about 3 centimeters within each drill. Seeds should be covered lightly with about ½ centimeter of soil. Seeds should be planted as early as possible in the spring.

After seeds are planted, mulch the beds with partially-decayed leaf mold or pine straw to a depth of approximately 0.5 centimeter. Water to settle the bed surface and at frequent intervals thereafter to keep the soil moist so that germination will be unhindered.

Once seeds begin germinating and begin to emerge through the mulch, care should be taken to keep the beds free from weeds to maximize seedling growth. Be sure to monitor seedlings for early symptoms of foliar blight which may be controlled by applications of fungicides such as Daconil® or Bayleton®.

If large numbers of redcedar seedlings are required, commercial nurseries would be more efficient than individual homeowner-managed nursery beds given the former's economies of scale. Private nurseries as well as several managed by the Florida Division of Forestry offer high-grade redcedar seedlings at competitive prices. Ordering the seedlings in July for delivery in December for the same year is the key to assuring that your order is filled. Too many people wait until winter to order seedlings only to find that these are no longer available.

Redcedars should be planted during the colder months of December, January, and February. Redcedars are currently used for ornamental landscape plantings, shelterbelts/visual screens and Christmas trees.

Individual trees are planted for ornamental uses while double offset rows of redcedars are planted for shelterbelts. When grown for Christmas trees, redcedar seedlings are planted at a 2 x 2 meter spacing to provide 484 trees per hectare (1,210 trees per acre). After 4-5 years, redcedar seedlings should be in the 1.5-3 meter height range and ready for sale. If the trees are left to grow for timber purposes over long rotations (40+ years), this same spacing is also adequate and will promote shading and ultimately shedding of the lower branches for producing clear, knotfree stems.

Cultural Practices

Redcedar seedlings grow best in unshaded areas free from weed competition. In plantations, weed competition for water, sunlight, and nutrients may stunt redcedar seedling growth. Excessive growth of weeds may promote fungal disease of the foliage due to the higher humidity retained around lower branches. Dew formation on branches in the spring and fall encourage fungal infection by providing ample moisture on the foliage which spores may utilize to germinate and later penetrate cells to establish infection. Certain fungicides such as Bayleton® and Daconil® are effective against foliar blight diseases when used at recommended dosages according to label directions. However, reducing the likelihood of disease development through proper weed control is an important first step and promotes better redcedar seedling growth as well.

Redcedars are sensitive to most “over-the-top” herbicidal sprays and are easily stunted or killed. Care should be taken to avoid applying herbicides which will contact the foliage. Contact herbicides such as Roundup® are most effective when shields attached to spray booms prevent accidental application or drift of the herbicide to foliage.

Rooted cutting are another means of obtaining planting stock. Although a more expensive means of production, rooting selected foliar cuttings allows you to choose from the best trees so that high-quality progeny are ensured. Shoots should be collected from the uppermost portions of the parent tree where shoots grow in a more upright fashion. Lower branches, while easier to collect, often grow in a strongly lateral direction and rooted cuttings from these areas continue to grow laterally before finally orienting vertically. Certain basic facilities are required for rooting redcedar cuttings and these include (1) a mist bed, comprised of soil mix (peat:vermiculite:perlite 1:1:1) with a PVC irrigation system designed to release moisture intermittently through the day, (2) a closed greenhouse to retain high humidity levels while allowing ample light for cutting growth, and (3) a series of timer clocks to control misting intervals and artificial lighting schedules.

Branch tips 15-25 centimeters long should be removed from preferred trees and foliage removed at the base of the cutting to provide a clean span of 2 ½-3 ½ centimeters long. The base of each cutting should be dipped in a rooting powder containing at least 0.8% indole-3-butyric acid (IBA) as a rooting hormone, a fungicide to control possible microbial contamination of freshly-cut surfaces, and talc as a carrier.

Dipped cuttings are “stuck” in the mist bed and misting schedules are timed to provide a brief interval i.e., 8-15 seconds of mist every few minutes during the day. The exact schedule will be determined based on the most efficient misting which permits a visible water film to remain on the foliage surface. This film is necessary to ensure the proper cooling effect so critical energy reserves are directed towards root regeneration rather than maintaining higher respiration levels stimulated by higher ambient temperatures. Heating coils placed in the bottom of the mist bed may be used to improve rooting success if cuttings are propagated during the winter.

Redcedar plantations or pure stands do not thin themselves naturally so spacing is important to maximize growth while not providing too much growing space to stimulate production and retention of lower branches. The thin bark and prevalence of roots near the soil surface make redcedars susceptible to fires which are their principal enemy. Few insects cause serious damage to redcedars and, except for a few decay fungi associated with mature and overmature trees, and two fungi which cause foliar blight, redcedars suffer little from pests. Establishing health, high-quality seedlings and minimizing weed competition during the early years are keys to growing vigorous redcedars suitable for a variety of uses.

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