Plant Data Sheet


J.S. Peterson @ USDA-NRCS PLANTS Database © Br. Alfred Brousseau, Saint Mary's College

Species (common name, Latin name)

Deer fern (hard fern, ladder fern, rough spleenwort) *Blechnum spicant*

Range

Deer fern has a sporadic circumpolar distribution. In North America it is distributed from coastal Alaska to California (Del Norte to Santa Cruz Counties). Deer fern occurs mostly west of the Cascade Range but is also found in northern Idaho. (5)

Climate, elevation

Deer fern is found in moist to wet forests from sea level to montane zones in southwestern Washington and western Oregon. It is an indicator of hypermaritime to maritime subalpine boreal and summer-wet cool mesothermal climates. Deer fern is also an indicator of moist to wet, poor-nutrient to moderate-nutrient forests in British Columbia. (5)

Local occurrence (where, how common)

Deer fern is scattered to abundant (to a dominant understory component), and occasionally dominant, in understories of coniferous forests on "water-receiving" sites (5), sporadic and less vigorous on water-collecting sites. (2)

Habitat preferences

Deer fern is found in moist to wet forests and generally on heavily shaded sites. (5) Grows best on well decomposed organic materials; on nutrient-rich soils, confined to decaying coniferous wood. (2) It is also found on fresh to very moist nitrogen-poor soils. (5)

Plant strategy type/successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)

In Alaska, it is found in old-growth and climax western hemlock (*Tsuga heterophylla*)-Sitka spruce (*Picea sitchensis*) stands. After disturbance, deer fern forms dense clumps if tree regeneration is sparse, but declines in cover as the shrub layer develops (20-25 years after logging). After 50 to 60 years, ferns, including deer

fern, begin to increase in abundance and cover and eventually dominate the understory. (5)

Deer fern is found in old-growth and climax western hemlock, Sitka spruce, western red-cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), and Pacific silver fir (*Abies amabilis*) forests throughout its range. (5)

Along the west coast of Vancouver Island, British Columbia, deer fern may be present in young seral stands in floodplain succession. However, its cover increases in climax stages and it is typical of the rich climax forests of the region (5)

Associated species

Some species commonly associated with deer fern include:
Alaska cedar (*Chamaecyparis nootkatensis*)
noble fir (*Abies procera*),
lodgepole pine(*Pinus contorta*),
Alaska blueberry (*Vaccinium alaskensis*),
red huckleberry (*V. parviflorum*),
thimbleberry (*Rubus parviflorus*),
salmonberry (*R. spectabilis*),
devil's club (*Oplopanax horridus*),
menziesia (*Menziesia ferruginea*),
salal (*Gaultheria shallon*),
Oregon oxalis (*Oxalis oregana*),
bunchberry (*Cornus canadensis*),
false lily-of-the-valley (*Maianthemum dilatatum*),
twisted stalk (*Streptopus spp*.),
threeleaf foamflower (*Tiarella trifoliata*),
woodnymph (*Moneses uniflora*),
pioneer violet (*Viola glabrella*),
western swordfern (*Polystichum munitum*),
ladyfern (*Athyrium filix-femina*),
bracken fern(*Pteridium aquilinum*),
oakfern (*Gymnocarpium dryopteris*),
woodfern (*Dryopteris spp*.),
stiff clubmoss (*Lycopodium annotinum)*
(5) (2)

May be collected as: (seed, layered, divisions, etc.)

Deer fern reproduces from spores and by sprouting from rhizomes. (5)

Collection restrictions or guidelines

The spores ripen from June to August. (4)

To test for ripeness, pick a small pinnae and place it spore side down on smooth white paper. The spores should drop within 24 hours and will be rounded globes. The spores ripen from the base of the frond upwards towards the tip so there is some latitude in timing. (1)

Seed germination (needs dormancy breaking?)

Could not find any need of dormancy breaking procedures to take place.

Seed life (can be stored, short shelf-life, long shelf-life)

Unknown but see 'Recommended seed storage conditions'

Recommended seed storage conditions

The best method for storing spores is in glassine envelopes or in packets or waxed paper. Spore viability varies among species from just a few days to several years, specific information for deer fern could not be located. The packets are best stored in the refrigerator (1-4 degrees C) or freezer in moisture-tight and air tight containers. (7)

Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.)

Sow spores into containers with moist soil and cover with a lid. Provide 12 hours a day of light from cool white fluorescent lights until the prothallia emerges. This can take from 1 to 3 months. Keep soil moist during this time by spraying with water. Once prothallia are big enough to move, transplant them to allow more growth space in to sterile soil with some leaf compost added. Cover with a clear plastic lid and keep soil moist. Transplant prothallia, once they are producing mature fern fronds, into small pots and repot as necessary. (1)

Over-winter for the first year in a greenhouse and plant outside in late spring or early summer. (4)

For dividing deer fern, division can occur in spring or autumn. Larger divisions can be planted straight into their permanent positions while smaller clumps are best potted up and kept in a cold frame until they are growing well. (4)

Soil or medium requirements (inoculum necessary?)

Sterilized potting soil (1)

Installation form (form, potential for successful outcomes, cost)

General fern propagation advice is that one-and-a-half to two year, sometimes longer, are generally required to produce a fern of garden-ready size from the initial sowing of spores. (1)

Recommended planting density

Deer fern (1 gallon) can be planted at a spacing of 3 foot centers.

Care requirements after installed (water weekly, water once etc.)

Care should be minimal, especially if planted in the fall, rainy season. Watering may be needed the first year during the summer.

Normal rate of growth or spread; lifespan

?

Sources cited

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5. USDA Forest Service, FEIS website: http://www.fs.fed.us/database/feis/plants/fern/blespi/introductory.html

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7. Holloway, Dr. Patricia S., "Tips on Collecting, Processing, and Storing Fern Spores" Georgeson Botanical Notes, No. 17. University of Alaska Fairbanks, April 1994. http://www.uaf.edu/salrm/gbg/pubs/Notes/17.pdf

Data compiled by (student name and date)
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