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Propagating Grasses, Rushes, and Sedges[®]

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INTRODUCTION

Fifteen years ago, in 1993, Sempervirens Botanical Company was founded with a focus on producing liners of herbaceous perennials. The first plant that was propagated happened to be the tender perennial grass, *Pennisetum setaceum* 'Rubrum' or purple fountain grass. In the years since, ornamental grass liners have become the mainstay of our production. The growth in popularity of these plants has come with the awareness of their structural beauty, seasonal interest, and relative ease of culture. I would like to describe the production methods that we use at Sempervirens and highlight a few of the noteworthy grasses, rushes, and sedges that we grow.

You will find Sempervirens Botanical Company situated on 2 acres of land in Torrance, California, a suburban community of the sprawling Los Angeles area. We are 15 miles south of downtown Los Angeles, California, and 5 miles from the Pacific Coast. The nursery resides on land leased from the regional electric utility company. Favorable climatic conditions allow us to produce material year round. Our facilities consist of 8800 square feet of poly-covered Quonset-type greenhouses, with the rest of the acreage composed of open liner and containerized stock beds.

A crew of five staff members produces our product, which is solely lining out material in two sizes: a 72-plug tray and an individual 2¼-inch liner pot known as a rosepot. All of our liners are direct-stuck into the finished pot size. The generally high percentage of success in propagation allows us to forego the extra transplant labor involved with using community propagation flats.

We use the same basic medium for all of our propagation. This is a soilless mix composed of redwood sawdust, pumice, coir or coconut husk fiber, and perlite. Fertilization is accomplished through the use of portable injectors with water-soluble liquid feed.

PROPAGATION METHODS

The grasses can generally be grouped into two categories, warm-season and cool-season grasses. Growing during the warm months of the year, warm-season grasses are generally winter dormant. In southern California, this growing period stretches from February into November. Exhibiting their growth during the cool seasons of the year, the cool-season grasses may or may not have summer dormancies, but they definitely slow down and do not look their best when it is hot. In our region, the cool season would extend from October through early May. These categorizations provide a strong seasonal factor into the propagation of the grasses and influence the methods we use for each variety.

With the over 130 taxa of grasses, rushes, and sedges that we grow, propagation by division is the method that we utilize most frequently. This vegetative method allows us to maintain cultivar integrity in our product line.

A basic process for division is employed for most taxa we grow. Stock plants, which are mostly produced in-house, are lifted from their containers and excess foli-

age and most of the rootball are removed. The divisions are then separated by hand with the use of pruners. With most taxa, we attempt to produce single-stemmed divisions, thus maximizing the yield from each stock plant. Making use of the natural dividing points in the clump allows for easier separation and enhances success. When dividing fine-textured, tight-clumping taxa, we will take small bunches as the division rather than separating a single stem.

Once a division is made, it is potted directly into the 72-plug or individual liner pot. The planted flats are sent to one of three locations depending upon the method specific to the plant being produced. With warm-season grasses, preventing desiccation of the new divisions is necessary. These divisions are placed in a propagation house under intermittent mist, as we would treat a cutting. The plants remain in this environment for periods lasting from 1 week to 3 months until we see new root growth. By using mist propagation and its cooling effect, we can also extend the propagation window on cool-season grasses. Taxa which are not as susceptible to drying out are placed directly in poly-covered quonset houses. The third option is to place the newly potted flats outdoors in liner beds. The beds are covered with a lightweight polyester cloth designed for frost protection. This cover allows for air exchange, yet provides shade and increased humidity underneath. This environment works very well for taxa which require less protection during propagation. As roots form and new growth appears, the cloth cover is removed.

Seed propagation is utilized when possible, accounting for factors such as seed availability, purity, and germination percentage. Seed is hand-sown over a 288-count plug tray. The germination medium is a prepackaged plug medium and the trays are top-dressed with medium grade vermiculite. When the germinated plug is transplantable, they are potted into the finished liner. Germinating seed in the 288-plug tray saves a great deal of transplant labor and minimizes shock to the seedling.

NOTEWORTHY VARIETIES

The genus *Calamagrostis* includes several excellent selections, two of which I would like to point out. One is *C. ×acutiflora* 'Karl Foerster' or Foerster's feather reedgrass. This cool-season clumping grass is one of the most popular in cultivation, having been named Perennial Plant of the Year in 2001 by the Perennial Plant Association. 'Karl Foerster' makes a beautiful, upright clump with dark-green foliage growing 2–3 ft tall. In late spring, flowering stems emerge with a slight purplish coloration to 6 ft tall. These seed stems then mature to a straw color and persist on the plant. This plant is hardy to Zone 4. 'Karl Foerster' divides very well directly outdoors underneath the frost cloth cover. There are several variegated forms. *Calamagrostis ×acutiflora* 'Avalanche' and *C. ×acutiflora* 'Overdam' have creamy white variegation and *C. ×acutiflora* 'El Dorado' has yellow variegation.

Calamagrostis foliosa, the Cape Mendocino reedgrass, is a California native found in the coastal scrub and on bluffs in the northern part of the state. The bluish-green foliage forms a tight 1 ft tall by 2 ft wide mound. The silvery blooms arriving in spring are held just above the foliage. Definitely a cool-season grower, this plant is best propagated in winter and spring. Our divisions are placed outdoors under frost cloth. Mendocino reedgrass is hardy to Zone 8.

The genus *Carex* is a group of many species in the sedge family. Here are a few examples:

Carex divulsa (*C. tumulicola* hort.), known as Berkeley sedge or European gray sedge forms very full clumps of rich green foliage up to 18 inches tall. Because of its close similarity to the California native, *C. tumulicola*, this plant was grown as the native for a long time in the trade. The plant is drought tolerant when established and is used as a large-scale groundcover and on slopes. *Carex divulsa* is hardy to Zone 4 and divides readily outdoors all year under frost cloth.

Carex oshimensis 'Evergold', Evergold sedge, is native to Japan. A creamy yellow stripe marks the center of the arching green foliage. The overall height is 12–16 inches. The plant is hardy to Zone 6. Divisions are placed under mist.

Carex pansa, the California meadow sedge, is found all along the Pacific coast. Spreading by rhizomes to a height of 4–6 inches, this plant is being used increasingly as a drought-tolerant lawn substitute, in meadow plantings, and in green-roof installations. This plant is hardy to Zone 6. Divisions are placed outdoors under frost cloth.

Widely used blue fescues or cultivars of *Festuca glauca* are well known. The cool-season growing, dense clumps of silver-blue foliage reach up to 10 inches tall. Of the many cultivars, our favorites are *F. glauca* 'Elijah Blue' and *F. 'Sis-kiyou Blue'*. Hardiness is to Zone 4. Divisions do best in the winter outdoors under frost cloth.

Imperata cylindrica 'Rubra', Japanese blood grass, is a warm-season deciduous grass from Japan. The red coloration on the 16 inches-tall foliage is most beautiful when backlit by the sun. The green-leaved species form of this plant is extremely invasive in tropical environments, leading to the listing of Japanese blood grass as a noxious weed by the United States Department of Agriculture. Permits are required on a state-by-state basis to transport this cultivar across state lines. *Imperata* is hardy to Zone 6. Divisions root readily in quonset houses during the warm parts of the year.

The rushes are represented by the genus *Juncus* and are characterized by dense clumps of upright cylindrical stems. They typically hail from marshy wetlands. *Juncus patens* 'Elk Blue' is a cultivar of California gray rush with glaucous blue-green foliage. Height reaches 18 inches. Hardiness is to Zone 7. Divisions are placed under mist.

Leymus condensatus 'Canyon Prince' is a California native selection of giant wild-rye that is quite popular in our region. The silver-gray foliage reaches 30 inches and looks best during the cooler parts of the year. Hardiness is to Zone 7. Divisions are best in the cool season outdoors.

Miscanthus sinensis cultivars, with their distinctive feathery blooms are some of the most popular grasses in the landscape. Known as the maiden grasses or Japanese silver grasses, they are originally native to Japan and China. These are warm season deciduous grasses mostly hardy to Zone 5. Divisions are taken during the growing season and placed under mist. *Miscanthus sinensis* 'Adagio' is a compact green-leaved form that reaches 5 ft and *M. sinensis* 'Morning Light' has fine-textured foliage with white variegation and reaches 4–5 ft. *Miscanthus sinensis* 'Strictus' or porcupine grass has yellow horizontal bands of variegation. The stiff upright foliage reaches 4–6 ft. *Miscanthus sinensis* 'Variegatus' has strongly white-stripped leaves and reaches a height of 7 ft.

Panicum virgatum or switchgrass is native to the tallgrass prairies of North America. A warm-season deciduous grass, these cultivars are hardy to Zone 4. Divisions can be grown directly in quonset greenhouses. *Panicum virgatum* 'Heavy Metal' is a strongly upright variety to 5 ft tall with gray-blue foliage. *Panicum virgatum* 'Shenandoah' reaches 4 ft and shows the best red fall color.

Pennisetum setaceum 'Rubrum' or purple fountain grass is one of the most popular grasses in our region. This warm-season grass with its beautiful burgundy-red foliage is only hardy to Zone 9. The plant reaches 4–5 ft tall. Divisions are rooted under mist. *Pennisetum setaceum* 'Eaton Canyon' is a compact form that reaches 2 ft tall. This cultivar was introduced by Magic Growers in Pasadena, California.

Schizachyrium scoparium 'The Blues', a cultivar of little bluestem, is also a member of the tallgrass prairie. The bluish-green foliage reaches 2 ft tall and has beautiful purplish tones as well. A warm-season deciduous grass, 'The Blues' is hardy to Zone 3. Divisions are placed under mist.

SUMMARY

With basic methods of division and seed propagation, we produce liners of over 130 taxa of grasses, rushes, and sedges. Seasonal growth characteristics influence the propagation methods we use. These variations in method allow us to optimize the success of our propagation.