

A Conservation Plant Released by the Natural Resources Conservation Service
Lockeford Plant Materials Center, Lockeford, CA

'Perla'

Koleagrass

Phalaris aquatica L.



'Perla' koleagrass (*Phalaris aquatica* L.) is a cultivar released by the Lockeford Plant Materials Center in cooperation with the California Agricultural Experiment Station in 1970.

Description

'Perla' koleagrass is an introduced, tall, robust, rapid-developing perennial bunchgrass. The plant has short rhizomes, which do not develop clonal patches of new plants. Plant height is up to 84 inches on good land. 'Perla' koleagrass has vigorous seedlings, and abundant well distributed yellow-green leaves. Although now considered the same species as hardinggrass, 'Perla' is distinguished from it by more vigorous growth, larger size, hairy glumes and bigger seeds. 'Perla' establishes

more easily and with more vigor, grows better over cold winter months.

Source

'Perla' koleagrass is indigenous to Morocco. Seed identified as *Phalaris tuberosa* var *stenoptera* was received from the ARS Plant Introduction Station, Pullman WA in 1955. The plant was later identified as *P. tuberosa* var *hirtiglumis*, and released under this name in 1970, since then the taxonomy changed to include it in *P. aquatica*.

'Perla' was evaluated by the Plant Materials program in California from 1956. It was tested in 86 field plantings in California from 1963 in MLRAs 14, 15, 17, 18, 19, 20 and 22. 'Perla' was superior to hardinggrass for range forage improvement in California/

Conservation Uses

'Perla' koleagrass was developed for improvement of annual grass range. Production is typically no greater than can be expected from native range. However, the perennial produces forage earlier in the season and stays green longer. Fertilized 'Perla' can add two months or more to the green feed period in winter than unfertilized native grasses and can add about one month to the green feed period in spring when moisture is not limiting. Planting 'Perla' with clover species had doubled yields.

Area of Adaptation and Use

Koleagrass is adapted in California below 2,000 feet to the Mediterranean-like climatic zone or where frost heaving is not a problem. It will grow where there is 12 inches of annual rainfall and there is soil profile development (clay layer). Moisture holding capacity of the soil becomes less critical as rainfall increases. It establishes itself early, grows well during cold winter months, and reseeds readily.

'Perla' is recommended for range plantings in MLRAs 15, 17, 18, 19 and 20.

Caution: not to be planted around wetlands, vernal pools, springs seeps or riparian areas.

Establishment for Conservation Plantings

Good stands require a spring-summer fallow to reduce competition from annuals in fall. Fall seeding is done on a firm, weed-free seedbed prepared after the first effective rains (1.5-2.0 inches). This ensures adequate moisture to support seedling growth and destroys the first crop of volunteer annuals. If fallow is prepared before weed species produce seed, the fall weed competition is reduced, but not eliminated. Fall seeding can follow a summer clean-up crop of Sudangrass (*Sorghum bicolor*

ssp. *drummondii*). Planting is accomplished directly in the Sudangrass stubble. Alternately, good results can be obtained if fall weeds are treated with herbicide prior to planting is late fall or early winter. Fertilizer should not be applied in the establishment year. Planting with clover species is documented to increase yields in future years. Seed should be drilled at 5 pounds/acre between October 15 and December 15. Use of a common grain drill is possible if the seed is first mixed with rice hulls as a dilutor and the drill is properly calibrated. If seed is broadcast and covered by harrowing or dragging, the seeding rate is increased 1.5 times. Seeding depth should be ¼ - ½ inch in all cases.

During the establishment season, mowing may be necessary to reduce competition from annuals. Set the mower at a height compatible with regrowth of the 'Perla' and other perennials. Remove as little leaf area of the koleagrass and other perennials as possible so that development will not be retarded. 'Perla' should not be grazed until completion of growth the first season after planting. At the end of the green feed period, dry forage can be grazed if the plants are large enough to resist pulling by livestock. An average stubble height of three to four inches should be maintained.

Management for Conservation Plantings

'Perla' starts growth in fall coincident with the first rains. In the second and subsequent years after planting fertilization is recommended in the fall. Mature stands should be ready for grazing (6-8 inches high) by early January. The amount of growth depends on the amount of rain, its distribution, temperature and soil fertility. Cold tolerance is improved by the inclusion of phosphorus with nitrogen during fall fertilization. Grass can be grazed at range readiness without harm to the plant so long as the ground is firm and not so wet that damage from trampling might occur. Grazing should stop when fertilized annual range is ready for use or when there is a three-inch average stubble height. Grazing will normally end in late February. However, lack of moisture or poor growing conditions may require earlier termination. Infrequently, when abundant rainfall occurs in late winter, grazing can continue through mid-March. Following winter grazing, the perennials, including 'Perla', must be rested to allow recovery and re-growth. This deferment period should continue until the annual range grasses begin to dry up and lose their high feed value. By the time the annual range is dry, 'Perla' will have produced seed and stored food reserves in the roots. The leaves will still be green and will remain green for about one month after the annuals are dry. This palatable forage can be grazed heavily until the average stubble height is three inches. When grazing ends, many plants will be heavily used, others partially grazed, and there will be numerous seed stalks left.

Ecological Considerations

Grazing is required to maintain 'Perla' as this plant must be properly managed. It should not be planted close to wetlands and riparian habitats as it will displace desirable vegetation.

Please contact your local NRCS Field Office, Cooperative Extension Service Office, or state natural resource or agriculture department regarding its status and use in your area.

Seed and Plant Production

'Perla' koleagrass can be grown as an annual for purposes of seed production. At the Lockeford Plant Materials Center, irrigated rows spaced 30 inches apart yield 400-600 pounds per acre of seed when harvested with a combine in late spring following fall seeding. 'Perla' koleagrass seed averages 267,000 seeds per pound.

Availability

For conservation use: 'Perla' koleagrass is widely available from commercial seed producers.

For seed or plant increase: Foundation seed can be obtained for the purpose of large-scale increase, through the California Crop Improvement Association and the USDA-NRCS Lockeford Plant Materials Center.

For more information, contact:
USDA-NRCS
Lockeford Plant Materials Center
21001 N. Elliott Road, P. O. Box 68
Lockeford, CA. 92537
Tel: (209) 727-5319 Fax: (209) 727-5923
<http://plant-materials.nrcs.usda.gov/capmc>

Citation

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For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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