UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

and

IDAHO AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF IDAHO
MOSCOW, IDAHO

NOTICE OF RELEASE OF 'NEZPAR' INDIAN RICEGRASS

The Ecological Sciences and Technology Division, Soil Conservation Service, and the Agricultural Experiment Station of Idaho, announce the naming and release of 'Nezpar' Indian Ricegrass [Oryzopsis hymenoides (Roem. and Schult.) Ricker], for use in range and wildlife plantings and in the revegetation of surface mined lands. Nezpar is an erect cool-season, native, bunchgrass comparatively large and robust. It has excellent seedling vigor and averages less than 50 percent of hard seed.

Nezpar was collected from the native vegetation near Whitebird, Idaho in 1935. It has been compared with over 200 accessions and was selected for its good vegetative characteristics and low hard seed content.

With proper planting and management techniques, Nezpar has demonstrated a capacity to cover land disturbed by surface mining and to produce nutritional winter forage for grazing animals.

Foundation seed will be produced by the Aberdeen Plant Materials Center. Limited quantities of seed are available to growers through the University of Idaho, Aberdeen Research and Extension Center.

DESCRIPTION, JUSTIFICATION FOR RELEASE AND RECOMMENDATIONS FOR USE

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Indian ricegrass is one of the West's most distinctive and beautiful perennial bunchgrasses; and is widely distributed throughout the western United States, southern Canada and Mexico. It is found on high mountains up to about 10,000 ft (3048 m) on dry, open southerly exposures and on desert floors in association with shadscale (Atriplex confertifolia) and winterfat (Ceratoides lanata). It occurs on sand dunes, sandy plains, canyons, hillsides, foothills, exposed ridges and dry, sandy, rocky or shale mountain sites. It is an important forage species of the Nebraska sandhills and west to the east slopes of the Cascade and Sierra Nevada ranges (Robertson, 1976; Hitchcock, 1950; USDA-FS, 1937).

Indian ricegrass is particularly adapted for winter forage. The plant does best when harvested in fall and winter, is highly palatable to all classes of livestock, and cures exceptionally well, providing nutritious winter feed. Stands quickly deteriorate under spring grazing.

Seeds of the grass mature in July, are plump, black or brown, round to oblong and high in energy; providing a sustaining diet for upland game birds and rodents.

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Appreciation is expressed to Harold L. Harris for reviewing this paper.

The wide distribution of indian ricegrass appears to be due to unnumbered ecotypic populations which are site specific (Robertson, 1976; Plummer, et al., 1955; Plummer and Frischknecht, 1952), a characteristic which has inhibited its widespread use in revegetation projects.

Growing on its native site, indian ricegrass is extremely drought tolerant. Robertson (1976) observed that maturity is reached the third or fourth year and that plant vigor declines thereafter.

In addition to the above mentioned site specificity; a major factor preventing successful use of indian ricegrass has been a high percentage of dormant seed. Two types of dormancy have been identified: (a) mechanical restraint due to the seed coat, and (b) embryo dormancy (Huntamer, 1934; Toole, 1940). Storage of seed for four to six years followed by a fall planting, will greatly improve germination. (Toole, 1940; Plummer and Frischknecht, 1952; Frischknecht, 1959; Rogler, 1960)

In recent years indian ricegrass has been in demand for use in the revegetation of lands disturbed by surface mining. This grass appears particularly adapted to the sterile, coarse materials that serve as seedbed for much mine reclamation -- its use has proved "encouraging" (Dean, et al, 1974).

'Nezpar' was first collected in 1935 from the native vegetation at Whitebird, Idaho, and tested under the number P-2575. It was selected from among 125 accessions at the Pullman Plant Materials Center because it had the lowest hard seed content (USDA, SCS, 1965).

P-2575 was included in the first project planted in conjunction with the establishment of the Aberdeen Plant Materials Center in 1939, and has undergone repeated testing since that time.

Over 70 accessions of Oryzopsis hymenoides from 10 western states

have been compared to P-2575 with regard to germination and establishment. None were found to be better. Twelve accessions, including 'Paloma' 2/, were found inferior to P-2575 in yield and years of stand survival in Idaho plantings. Average yield (over all years and all sites was 1829 lbs/acre (2048 Kg/ha). Workers at the Bridger Plant Materials Center (Montana) reported first year yields of 4174 lbs/acre (4675 Kg/ha) for P-2575 and 2738 lbs/acre (3067 Kg/ha) for Paloma (Sundberg, 1975).

Estimates of forage yield under irrigation at Aberdeen average 2768 lbs/acre (3100 Kg/ha).

Seed harvest under field conditions (as opposed to test plots) indicate an average cleaned seed yield of 376 lbs/acre (421 Kg/ha) on sandy soil. Yields on irrigated seed fields have ranged from a high in 1958 of 736 lbs/acre (824 Kg/ha) to a low (1962) of 200 lbs/acre (224 Kg/ha). Yields taken from a field on heavy soils, 1970-1972, ranged from 89 lbs/acre (100 Kg/ha) to 21 lbs/acre (24 Kg/ha).

Nezpar has proven dependable in numerous plantings and has shown a capacity to establish and endure, as a stand, when properly planted and managed. It is adapted to coarse soils in areas having at least 9 inches (22.86 cm) annual precipitation. At elevations of 6,000 ft (1830 m) and above, where the average annual temperature is 40 degrees F (4.5°C) or less, plantings should be restricted to south and west slopes or other "hot" situations.

2/ Paloma indian ricegrass is the only other released cultivar of the grass. It was released in 1974 by the Los Lunas Plant Materials Center and the respective experiment stations of New Mexico, Arizona and Colorado.

In sandy soils at the lower end of its precipitation range, seed should be planted three to four inches (7.62 to 10.2 cm) deep. Two years should be allowed for the full stand to come up and establish. In less droughty situations, shallower seeding depths may be preferable, depending on conditions such as soil, and age of the seed 3/. When included in a seed mixture that will be planted 1/2 inch (1.27 cm) deep, the seed should be 5 to 10 years old. Shallow seedings must be made late in the fall to avoid bird and rodent depredation.

Management of a dryland stand of Nezpar must take into consideration that the grass is not on its native site and will not, therefore, be as long-lived or as drought or grazing tolerant as local ecotypes. It is very important that use be restricted to late summer, fall or winter, thereby allowing seed production to maintain the stand. Experience indicates that the third and fourth years are expecially critical, and maintenance or loss of the stand will depend on the appearance of new seedlings from the second and third year seed crops. The planting of a mixture of newly harvested seed, plus aged seed, may help mitigate this critical period. By the eighth and ninth years, it appears that natural selection and/or crossing with native ecotypes produces a stand that is considerably more adapted to the site than were the plants of the original seeding.

In conclusion, Nezpar indian ricegrass is one of nature's most beautiful grasses, particularly adapted to sandy or rocky situations; a

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3/ Older seed does not have the same capacity to emerge from a deep planting as young seed has. The relations between age, optimum germination and optimum emergence have not yet been determined.

valuable plant for revegetation of mined land and among the best of grasses in nutritional quality as standing winter feed for livestock and wildlife.

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'NEZPAR' INDIAN RICEGRASS RELEASE NOTICE

Approval Signatures

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