

SPRAGUE WHEAT

'Sprague,' C.I. 15376, is a semidwarf common white wheat developed for the severe snow-mold areas of Washington. Sprague tillers profusely from early seeding. It has narrow leaves and bearded heads. The chaff color varies from white to dark brown, in response to environment. The straw is weaker than that of 'Nugaines,' but superior to that of 'Moro.' Sprague's winterhardiness is equal to that of Nugaines. It threshes well and is earlier in maturity than Nugaines, but less resistant to shattering.

Disease Response

Sprague loses its leaves when attacked by snow mold, as do other wheat varieties, but vigor is retained longer in the crowns than in those of other presently available wheats. As a result, Sprague recovers better. It has moderate field resistance to stripe rust and is intermediate in response to dryland *Fusarium* foot rot. Sprague is susceptible to strawbreaker (*Cercospora*) foot rot, *Cephalosporium* stripe, and some races of common, dwarf, and flag smuts.

Milling and Baking Quality

Milling quality of Sprague is similar to that of Nugaines, but not as good as that of Luke or the club wheats. The flour is suited for pastries and cookies, but not for bread.

Recommended Areas

Sprague is recommended for production, specifically, in areas where snow mold frequently kills or injures wheat, particularly in Okanogan and Douglas counties.

In high-yield areas, lodging may be a problem, because Sprague has weak straw. Sprague yields competitively with Moro and Luke in the

chronic snow-mold areas in the absence of snow mold, and its greater resistance to snow mold makes it superior when snow mold does occur.

Managing Sprague

In Douglas and Okanogan counties, seeding about August 15-20 produces plants large enough to withstand severe snow-mold attack. Earlier seeding is not recommended unless summerfall moisture is critical. Sprague has little or no after-ripening dormancy and can be seeded soon after harvest. It emerges as well as Luke and better than Nugaines.

Treat Sprague with a recommended material to control common smut and flag smut. Seed treatment is needed to prolong the useful life of this variety.

Fertilization

Sprague is adapted to intermediate-rainfall areas. It should be fertilized at the same rate as Nugaines.

Development of Sprague

In 1960 and 1961, the late Roderick Sprague planted part of the USDA World Wheat Collection in Douglas County to identify snow-mold-resistant wheats. In the spring of 1962, only a few selections survived the severe test. One of these lines, P.I. 181268, was crossed with Gaines at the Dry Land Research Unit in the summer of 1962. Resistant lines were selected from the F₂ bulk, after a severe snow-mold attack. Progeny were grown continuously in sites favorable to snow mold. One of the lines surviving these trials was named Sprague. To date, Sprague has survived all snow-mold tests in Washington.

REGISTRATION OF SPRAGUE WHEAT

(Reg. No. 600)

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'SPRAGUE', CI 15376, WA 5910, is a semidwarf soft white common winter wheat (*Triticum aestivum* L. em. Thell.) cultivar developed cooperatively by the Washington State University Agricultural Research Center and the SEA, USDA Research Service, USDA. Sprague, released in 1972, was named after Roderick Sprague, a long-time student of snow mold. Sprague was selected in the F₅ generation from the cross PI 181268/'Gaines' made at the Dryland Research Unit, Lind, Wash. in 1962.

Sprague has winter habit, narrow leaves, is midseason in maturity, short (semi-dwarf) in height, the stems are white, glabrous, and weak to medium-strong. The spike is awned, oblong in shape, and inclined. The awns are 5 to 6 cm long and white. The glumes are glabrous, short to midwide, and square to slightly elevated with a narrow acuminate beak about 2.7 mm long. The chaff color varies from white to dark brown in response to environmental conditions.

The kernel is white, short to midlong, ovate-elliptical. The endosperm is soft and the germ is small. The crease is narrow and middeep. The cheeks are rounded. The brush is large and short.

Sprague is moderately resistant to snow mold when seeded early. It is equivalent to Nugaines in hardiness and has the Bt 1 and Bt 4 smut (*Tilletia caries* (DC) Tul) resistance genes of the Gaines parent. It has moderate field resistance to local stripe rust (*Puccinia striiformis*, West.) races and is intermediate in response to dryland Fusarium foot rot. Sprague is susceptible to Cercospora foot rot, flag smut (*Urocystis tritici* Koern.) leaf rust (*Puccinia recondita* Rob. ex Desm. f. sp. *tritici* Eriks.), and stem rust (*Puccinia graminis* f. sp. *tritici* Eriks. & E. Henn.).

Sprague is adapted to the snow mold areas of Washington. It was evaluated in the observation and performance nurseries of Washington from 1968 to 1972 and was included in the Western Regional Soft White Winter Wheat Nursery in 1972. Sprague yields competitively with 'Moro' and 'Luke' in the chronic snow mold areas of north central Washington in the absence of snow mold and is superior in yield to Moro and Luke when snow mold occurs. In high yielding areas, lodging may be a problem. The test weight of Sprague is slightly less

than that of Nugaines. The milling characteristics of Sprague are similar to those of Nugaines. Sprague produces an excellent pastry-type flour.

Breeder and foundation seed will be maintained by the Washington State Crop Improvement Association under the supervision of the Agronomy and Soils Department, Washington State Agricultural Research Center and the USDA, Pullman, WA 99164.

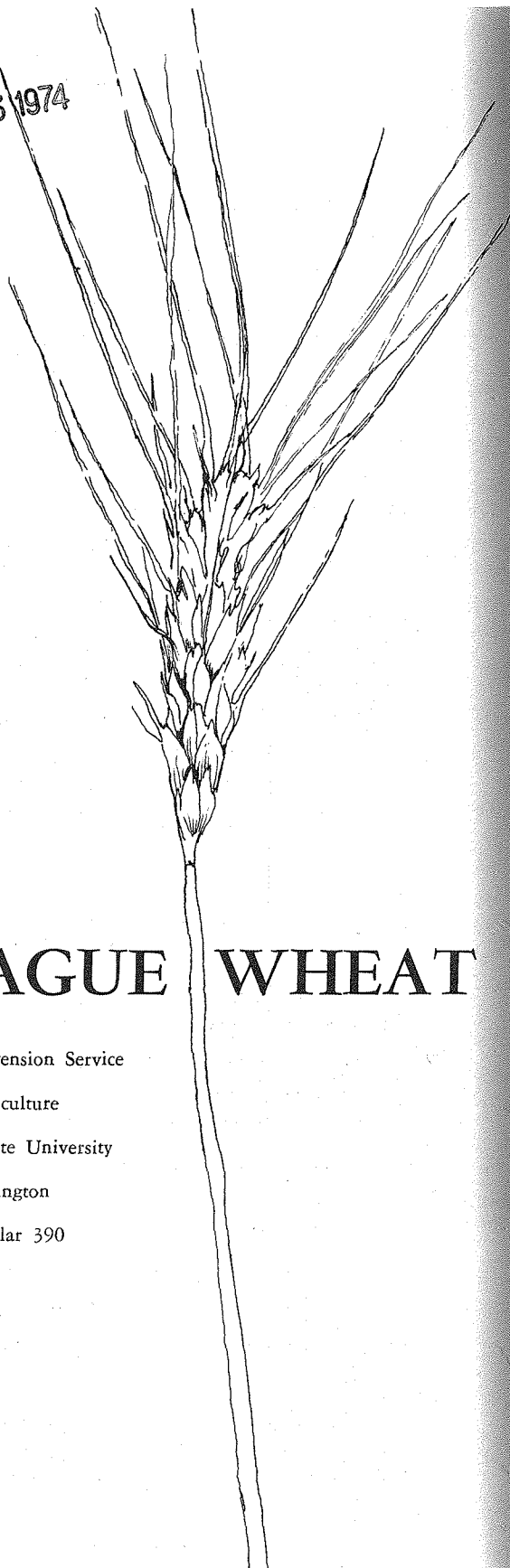
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