

Western Canada. In addition, incomplete data indicate that Beaver may be adapted in the Ottawa area in Eastern Canada, and in the States of Minnesota, North Dakota and South Dakota.

Foundation seed fields have been established in Alberta and Saskatchewan, and about 25,000 pounds of Certified seed were produced in California in 1962. This Certified seed is being distributed by the Department of Agriculture, Legislative Buildings, Edmonton, Alberta. Production of seed is being continued in 1963.

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May 3, 1963

NOTE ON PARK HARD RED SPRING WHEAT

Park hard red spring wheat was developed by the Early Wheat Project Group co-ordinated by cerealists at the Experimental Farm, Lacombe, Alberta, and was licensed in Canada in March, 1963. This variety is similar to Saunders in maturity; but as it has consistently outyielded Saunders, it is expected to replace Saunders and perhaps some Thatcher in areas where earliness is an important consideration. Park has excellent milling and baking characteristics. It is similar to Saunders and Thatcher in disease reaction being resistant to loose smut *Ustilago tritici* (Pers.) Rost. and to some races of stem rust *Puccinia graminis tritici* Eriks and Henn. It is susceptible to the bunt species *Tilletia caries* (DC) Tul. and *T. foetida* (Wallr.) Liro and to leaf rust *Puccinia triticina* Eriks.

ORIGIN AND DEVELOPMENT

Park originated as a selection from the cross (Mida-Cadet) × Thatcher made at the Experimental Farm, Lacombe, Alberta, in 1950. Propagation and selection were carried out in plant rows at Lacombe through the F5 generation. Preliminary yield trials were conducted locally for 2 years, and regional tests at Beaverlodge, Castor, Fort Vermilion and Lacombe, Alberta, and Melfort, Saskatchewan, were conducted in the 2 subsequent years. It was in the Western Co-operative Spring Wheat Test, involving about 20 station tests each year over the period 1959-1961. Quality characteristics were evaluated for 5 years by the Genetics and Plant Breeding Research Institute in Ottawa and also, in the latter stages of the program, by the Grain Research Laboratory of the Board of Grain Commissioners in Winnipeg, Manitoba. An application for licence was supported in 1962 by the Associate Committees on Plant Breeding and Grain Research of the National Research Council and Canada Department of Agriculture.

Selected Seed Growers were supplied with 178 bushels of Registered and 98 bushels of Certified seed in 1963.

DESCRIPTION

- Spike* — Mid-dense, fusiform, awnletted; glumes mid-long, mid-wide, glabrous, white; shoulders wide to mid-wide, oblique to rounded; beaks mid-wide, acute.
- Grain* — Red, short to mid-long, mid-wide, ovate to oval; germ mid-size, oval to round; crease mid-wide to wide, mid-deep, occasionally pitted; brush mid-size, short; cheeks angular to rounded.
- Straw* — Hollow, mid-long, strong, white.
- Maturity* — Early, equal to Saunders, 2-4 days earlier than Thatcher.
- Yield* — Approximately 4 per cent higher than Saunders and 4 per cent lower than Thatcher in tests in central and northern Alberta during 1957-1962.
- Disease reaction* — Resistant to loose smut and some races of stem rust, susceptible to bunt and leaf rust.
- Quality* — Equal to Marquis, eligible for top grades.

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April 5, 1963

NOTE ON CO₂ EFFECTS ON GREENHOUSE TOMATO CROPPING

As early as 1921, Lundegardh (2) suggested that CO₂ evolved from decomposing organic matter could increase field crop yields. Very recently attention has turned toward increasing atmospheric concentration of CO₂ in greenhouses. Thus, at about double normal concentration (500 to 600 p.p.m.), carnations flowered earlier and yields were increased by 35 per cent (1). Other reports (3, 4) show that, in hydroponic culture, supplemental CO₂ increased cucumber yields by 8.5 times and kohlrabi yields by 2.5 times.

TABLE 1. — EFFECT OF AN ENRICHED ATMOSPHERE ON TOMATO YIELDS¹. CO₂ ADDED DAILY, FOR 140 DAYS.

Treatment	Early Crop — to June 1, 1962			Total Crop — to July 15, 1962		
	Yield, tons/acre	Fruits per plant	Fruit wt., grams	Yield, tons/acre	Fruits per plant	Fruit wt., grams
CO ₂ added	31.8	33.0	79	54.7	68.0	66
Control	24.7	26.0	78	42.6	54.0	65

¹Atmosphere contained about 500 p.p.m. CO₂, 9 hours daily for 140 days. Data represent means of 6, 5-plant replications.