

FRONTIER, A NEW VARIETY OF WINTER RYE

Frontier winter rye was licensed in Canada in July, 1964. This variety combines the winterhardiness of the Canadian variety Dakold 23 with some of the desirable agronomic characters of European ryes. Frontier represents a distinct improvement over Canadian varieties in yielding ability, kernel size, and kernel color (Table 1).

Table 1. Comparative data on agronomic performance of winter rye varieties
(1 bu rye/ac = 0.627 q/ha; 1 in. = 2.54 cm; 1 lb/bu = 12.472 g/l.)

Character	Variety			
	Frontier	Dakold 23	Antelope	Petkus
Winterkilling, % (av. 39 sta.-yr)	7	6	8	56
Yield (bu/ac) (av. 39 sta.-yr)	44.0	38.1	39.9	30.8
Bushel weight (lb)	58.0	58.0	58.0	57.5
1000 kernel wt. (g) (av. 32 sta.-yr)	24.9	21.4	22.7	29.4
Relative height (in.)	Equal	-1	Check	-2
Relative maturity (days)	Equal	-1	Check	+2

ORIGIN AND DEVELOPMENT

Frontier originated from the cross Dakold 23 (C.A.N. 2830) × Petkus (C.D. 5773) made at the Experimental Farm, Swift Current, Sask., in 1954. Winterkilling in 1956 and again in 1957 reduced the bulk population to 66 plants which were subsequently grown as "plant lines" but allowed to intercross. The best surviving plants in each mother line were selected as progenitors for the next generation.

Five composite populations were formed in 1959 by bulking various "plant lines" according to kernel type, yielding ability, and fertility class. In the fall of 1960, Composite No. 1 was rated as the most promising and was entered as "S.C. No. 60" in the Co-operative Tests of Fall Rye Varieties. Data, covering 3 years of evaluation at 20 locations in the three prairie provinces, are recorded in the Proceedings of the Associate Committee on Plant Breeding of the National Research Council of Canada and Canada Department of Agriculture, 1961, 1962, and 1963. An application for the licensing of Frontier was supported by this Associate Committee in February, 1964.

Frontier was increased from a few pounds to 35 bu on irrigated land at Swift Current during the 1963-64 season. A further seed increase is being grown in 1965 at the Research stations located at Lacombe and Lethbridge in Alberta, and at Swift Current and Regina in Saskatchewan. A. B. Masson of the Experimental Farm staff at Regina, Sask., is in charge of seed distribution.

DESCRIPTION

Spike: bearded, mid-dense, medium length, elliptical; chaff white; lanceolate glumes; kernels medium in size, blue-gray in color.

Straw: medium length, slender, relatively little "bloom".

Leaf: relatively short and narrow.

Fall growth: prostrate, dark-green-leaved rosette.

Winterhardiness: excellent.

Maturity: mid-season.

Resistance to lodging: fair.

Resistance to shattering: fair.

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Received May 6, 1965

THE CIGAR FILLER TOBACCO VARIETY OTTAWA 705¹

The new cigar filler tobacco variety Ottawa 705 was developed in the breeding program conducted at the Central Experimental Farm, Ottawa, Ont., and cooperatively selected and tested at the Experimental Farms, L'Assomption, Que., and Delhi, Ont. Ottawa 705 exhibits high tolerance to black root rot (*Thielaviopsis basicola* (Berk.) Ferr.). It is moderately high in yield, produces a good plant type, and cures in a relatively short curing period. The cured leaf is lower in total alkaloids and nicotine than the commonly grown commercial variety Resistant Havana 211; a trend towards lower alkaloids is desirable in cigar filler tobacco. The outstanding asset of Ottawa 705 is its superior smoking qualities when compared with the commercial cigar tobacco variety Resistant Havana 211.

Origin and Description

Ottawa 705 was developed from a cross between Resistant Havana 211 and Connecticut Havana 38. The F_2 segregating generation was tested in field soil heavily infested with black root rot fungus, and selected resistant plants were backcrossed to the Connecticut Havana 38 parent. Four cycles of selection and backcrossing were made before the final selection and self pollinations. The variety has been selected and evaluated for yield and quality since 1956. During the period of field testing, comparative trials with standard varieties were made at L'Assomption, St. Alexis, and St. Jacques, Que., and Delhi, Ont., for yield, quality, and crop returns per acre. In chemical evaluations, the cured leaf was analyzed for nicotine, nornicotine, total alkaloids, nitrogen, and petroleum ether extractives. Physical analyses of leaf included lamina percentage, weight per leaf, leaf area, and duration of burn. Quality was evaluated

¹Contribution No. 21 from the Experimental Farm, Canada Department of Agriculture, Delhi, Ont.