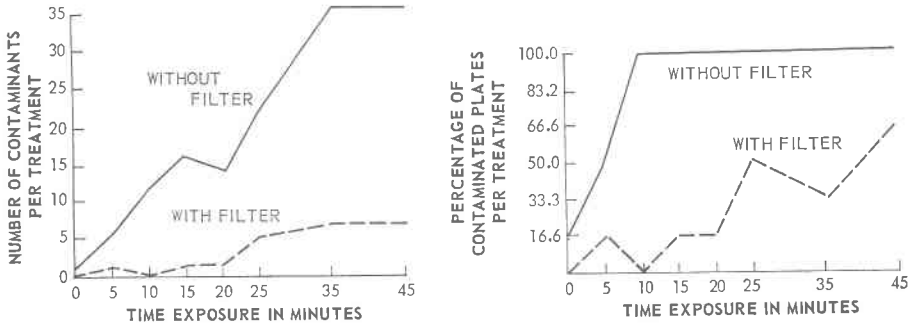

FIGURE 2. A comparison of the effects of filtered and unfiltered air on the contamination of Petri plates.

Efficiency tests were performed with potato dextrose agar medium in open Petri plates evenly distributed on the table. Treatments consisted of exposing six randomly located plates for different time intervals. The checks were unopened plates. The plates of all treatments were opened at the beginning of the experiment and were closed at appropriate time intervals. To compare with previous working conditions, the same experiment was set up on the table without the operation of the air filter and with the polyethylene sheeting removed.

A 5-minute exposure to unfiltered air on the open table resulted in contamination of 50 per cent of the plates and a 10-minute exposure in 100 per cent contamination (Figure 2). In contrast, only 16.6 per cent of the plates became contaminated during exposures of up to 20 minutes in filtered air and only 66 per cent were contaminated by 45 minutes' exposure. In addition, the number of contaminants per plate was much higher, and even unopened check plates became contaminated in unfiltered air (Figure 2).

This chamber has its limitations in working with fungi whose spores are dislodged easily by slight air movement. However, use of the chamber does facilitate transferring under otherwise adverse conditions. Monospore isolations, micromanipulation, transferring of cultures and other operations which require exposed culture media can now be done with reasonable safety.

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NOTE ON STEWART 63 DURUM WHEAT

Stewart 63, a new, rust-resistant durum wheat, has been released by the Crop Science Department of the University of Saskatchewan. The variety has the pedigree, St. 464 × Stewart[3]. St. 464 is a rust-resistant, Ethiopian durum which has been shown by Kenaschuk *et al.* (1) to have two genes for resistance to race 15B. Both genes have been transferred to Stewart 63

TABLE 1.—AGRONOMIC AND DISEASE DATA—AVERAGES FROM THE CO-OPERATIVE TESTS OF DURUM WHEAT VARIETIES FOR 1959-62

Variety	Agronomic characters					
	Yield		Maturity -days	Lodging 1-9[3]	Height, inches	1000-kernel wt., gm.
	Man.[1]	Sask. & Alta.[2]				
Ramsey	42.0	25.3	100.9	3.1	36.0	38.9
Stewart	47.8	25.7	102.1	3.5	40.1	40.5
Stewart 63	50.0	26.1	102.3	3.7	40.4	41.1

	Disease reaction[4]				
	Stem rust	Leaf rust	Loose[5] smut	Bunt[5]	Kernel smudge
Ramsey	18.9%	0.8%	50.6%	41.8%	14.7%
Stewart	58.2	2.3	28.0	56.1	9.8
Stewart 63	0.4	1.8	42.7	67.2	7.9

[1]4 years' data from three stations and 3 years from one station
[2]4 years' data from three stations and 3 years from two stations
[3]"1" indicates no lodging and "9" extreme lodging.
[4]The readings on stem rust, leaf rust, loose smut and bunt are from artificially-inoculated nurseries.
[5]3 years' data

and the variety has excellent resistance to stem rust races 11, 11-1, 15B-1, 15B-1L, 15B-4, 15B-5, 17, 29-1, 38, 48A and 56.

In all characteristics, except stem rust resistance, Stewart 63 appears to be similar to Stewart (Table 1). Its release provides farmers in the rust area of Manitoba and southeastern Saskatchewan with an alternative to Ramsey, the only other licensed, rust-resistant variety. In tests in Saskatchewan and Alberta, Stewart 63 has yielded about a bushel per acre more than Ramsey, while in Manitoba it has outyielded Ramsey by about 8 bushels. Stewart 63 is a little taller, slightly weaker in the straw, and a day later than Ramsey. However, it is more resistant to stem rust, has larger kernels, shows less kernel smudge and tends to grade better.

The use of a number to designate varieties produced by backcrossing is new in Canada, although it has been used in other places, notably California, Australia and Mexico. The system has the advantage that it makes it clear to farmers that the variety is an improvement of the recurrent parent.

VARIETAL DESCRIPTION

Spike: Fusiform, awned; chaff smooth, buff, awns buff; kernels amber, long, elliptical.

Straw: Long, medium strong.

Maturity: Late.

Disease reaction: Resistant to leaf rust and stem rust, including prevalent strains of 15B; moderately resistant to root rot and kernel smudge; moderately susceptible to bunt and loose smut.

Macaroni quality: Equal to Mindum.

ACKNOWLEDGEMENT

The data on agronomic characters and disease reaction are used with the permission of the Canada Department of Agriculture, Research Station, Winnipeg, Manitoba.

REFERENCE

1. Kenaschuk, E. O., R. G. Anderson, and D. R. Knott. 1959. The inheritance of rust resistance. V. The inheritance of resistance to race 15B of stem rust in ten varieties of durum wheat. Can. J. Plant Sci. 39:316-328.

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NOTE ON A SEED DISPENSER FOR CEREAL PLOTS[1]

A machine dispensing seeds in sufficient quantities to be used for single rows of cereal crops is described. This dispenser has advantages over one previously reported by McLeod (1). The seeds are visible during their passage through the machine and the operator can thus detect and adjust any irregularities as they occur. Experimental data are given on the accuracies achieved under operating conditions and some factors governing dispensing rates and accuracy are described.

The dispenser (Figure 1) is an aluminum cylinder rotated in a clear plastic housing by rocking a foot pedal. Cables are wrapped around a pulley on the cylinder shaft and attached to opposite ends of the pedal. The cylinder is rotated back and forth, through 180°; a pin on the pulley striking rubber stops to restrict its travel. To accommodate different seed, four slots, ranging in width from 0.5 to 1.5 inches, are machined at 90° spacing around the cylinder with their axes parallel to the cylinder axis. Each slot is filled by a plug which can be withdrawn and locked in any position. Seed in a funnel drops into the slot through a clear plastic tube integral with the housing.

The slot, suitable for the quantity of seeds to be dispensed, is placed under the funnel by rotating the cylinder relative to the pulley. The plug is withdrawn until the open volume in the slot equals the volume of seeds required. Rotating the cylinder delivers the seed to the envelope through a clear plastic chute.

Tests with cereal crop seeds were conducted by six workers under normal operating conditions. Each worker dispensed 100 packages of each seed, noting the time taken. Twenty-five of the packages (every fourth packet) were either weighed or their contents counted by an electronic

[1]Contribution No. 48, Engineering Research Service, Research Branch, Canada Department of Agriculture, Ottawa.