

New watermelon

# Klondike RS-57

## for long-distance shipping

Stock seed of a new watermelon variety, Klondike RS-57, was released to commercial seed producers in the fall of 1957. Commercial quantities are now available to growers.

Klondike RS-57 is the result of seven years of breeding to produce a variety with a tough rind, suitable for long-distance shipping, which would retain the high flesh quality of the Klondike types. Klondike RS-57 resulted from a cross of Blue Ribbon and Ironsides followed by seven generations of selection and self-pollination. The original stock seed was produced by planting all the seed from a single, selected, self-pollinated melon in an isolation plot. The resultant plants were allowed to inter-pollinate.

In external appearance, Klondike RS-57 closely resembles its Blue Ribbon parent. The fruits, however, tend to be slightly larger and somewhat more blocky. Mature melons weigh from 25 to 30 pounds. The flesh color is about the same as that of Blue Ribbon but of slightly less eating quality. Soluble solids content is about the same as Blue Ribbon. The seeds of Klondike RS-57 are small, dark in color, and easily distinguishable from any other strain of Klondike watermelon.

In each generation a few self-pollinated fruits were selected from a large

number on the basis of fruit shape, rind toughness, flesh color, seed color and size, soluble solids content, and flesh quality as determined by a taste test. Rind and flesh toughness was determined by use of pressure testers with tips designed especially for this project. Results were recorded directly in pounds pressure required for the tips to penetrate either the rind or the flesh. The soluble solids were determined with a hand refractometer.

Taste tests have indicated that watermelon flesh with a resistance of over 3.5 pounds, as recorded on the pressure tester, tends to become somewhat chewy. As the resistance increases, flesh quality decreases. Average comparative readings of rind and flesh of the two parental varieties, Klondike RS-57, and the variety Peacock, are shown in the table.

Pounds Pressure to Puncture Rind or Flesh				
	Peacock	Blue Ribbon	Ironsides	Klondike RS-57
Rind	18.0	10.3	23.5	25.1
Flesh	4.8	2.6	4.2	3.1

Studies have shown structural differences in watermelon rinds. The cells in tender-rind types are larger than in those with tough rinds. The cell walls may be several times thicker in the tough rinds and a greater number of these thick-

walled cells are present. In addition, the tough rinds tend to be somewhat spongy in nature whereas the tender rinds are brittle and more easily broken.

Klondike RS-57 is resistant to Fusarium wilt, as are both of its parents. In various areas of the state, however, tests for resistance did not show satisfactory results in some locations. But in other areas, on land known to be infested with the wilt organism, resistance was satisfactorily high. These findings on resistance also apply to the two parental varieties. Such differences in reaction suggest the possibility of different physiological races of the fungus responsible for wilt.

Klondike RS-57 does not appear to be any more resistant nor any more susceptible to rind rot than its parental varieties.

*A. R. Spurr is Associate Professor of Vegetable Crops, University of California, Davis.*

*Glen N. Davis is Professor of Vegetable Crops, University of California, Davis.*

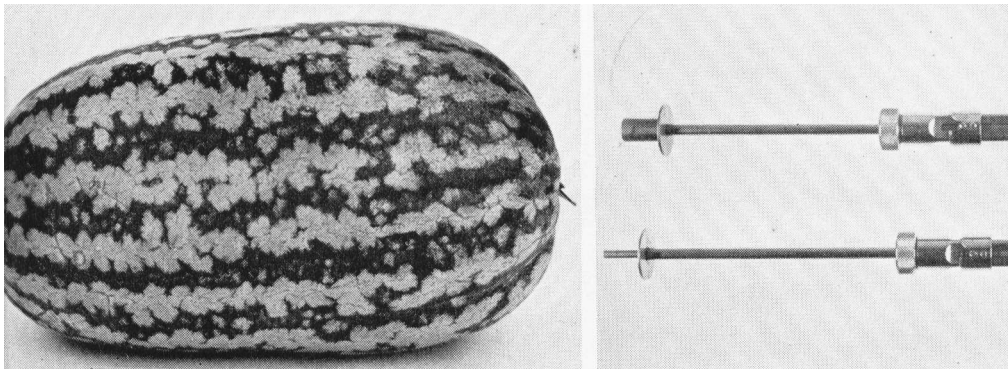
### Search for

## YELLOW DWARF

### resistant barley

Six thousand seven hundred barley varieties from abroad have been tested to find parental material for a barley resistant to yellow dwarf. Reduction of this virus disease by controlling the aphid vector has not been economically feasible; therefore, resistant varieties offer the only practical method of control. Because all commercial barley varieties in United States are susceptible, the search for suitable sources of resistance was extended to the world collection of barley germ plasm of the United States Department of Agriculture, containing entries from many parts of the world including Abyssinia, North Africa, and Manchuria.

Although the majority of the entries tested were extremely susceptible, various levels of resistance, ranging from slightly tolerant to highly resistant types, have been obtained. Twenty-eight entries were found to be highly resistant in two or more tests and represent a good source of resistance for a breeding program. All 28 entries originated in Abyssinia, a country whose total entries constitute only 10% of the world collection. These varieties are not adapted for commercial production in California but will be valuable as parental material in developing locally adapted varieties resistant to this disease.—*C. W. Schaller, Dept. of Agronomy, Davis.*



Left: A mature fruit of Klondike RS-57. Right: Puncture tester tips for determining the toughness of rind—lower—and flesh—upper—of watermelons.