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2-1-1969

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Recommended Citation

Albrechtson, R. S., "Kota: A New South Dakota Oat" (1969). *Bulletins*. Paper 555.
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Bulletin 554
February, 1969



KOTA

A New South Dakota Oat

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KOTA--A New South Dakota Oat

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Kota is a new spring oat variety developed at the South Dakota Agricultural Experiment Station and released in January, 1969. It combines high yield of good quality grain with good disease resistance and a large area of adaptation. Seed was increased and released by the Foundation Seed Stock Division, South Dakota State University, to County Crop Improvement Associations and to the South Dakota Seed Trade Association for registered and certified seed production in 1969. Some neighboring states also participated in a simultaneous increase and release of Kota seed.

Origin and History

Kota is a selection from the cross Clinton "x Landhafer 2x RL 2120 3x Garry. RL 2120 is a rust-resistant strain from the cross Victoria 2x Hajira x Banner 3x Victory x Hajira 4x Roxton. The initial selection from which Kota originated was made by D. D. Harpstead. Final selection and purification were done by R. S. Albrechtsen. Kota was yield-tested throughout South Dakota by the Crop Performance Testing Project and the Oat Breeding Project of the South Dakota Agricultural Experiment Station. Various state and federal agencies participated in the final agronomic and pathologic evaluation of Kota in regional tests coordinated by the U. S. Department of Agriculture.

Agronomic Characteristics

Kota is a midseason variety, similar to Portal in height, heading date, maturity date, test weight and kernel size. It has moderately good straw strength. Approximately 75%

of the kernels are yellow in white light and dark brown under ultra-violet; the remaining 25% are lighter yellow in white light and fluoresce blue-white under ultra-violet. Protein content of the grain is good. Preliminary milling tests suggest Kota to be a suitable milling oat.

Pathologic Characteristics

Data obtained throughout the North Central Region of the U. S. and Canada over a 3-year period (1965-67) show Kota to be equal to Holden in crown (leaf) rust and stem rust resistance. Both are resistant to the prevalent older races but susceptible to some of the new races. Kota is resistant to the oat smuts and has shown some yellow dwarf (red leaf) tolerance.

Performance

Kota has given high yields of good quality grain and appears to have a large area of adaptation. It was the second highest yielding strain of 26 entries in the Uniform Midseason Oat Performance Nursery grown at 19 locations throughout the North Central Region of the U.S. and in Canada in 1967, being exceeded only by an unreleased experimental strain. Clintford was the only strain in these tests that exceeded Kota in test weight in 1967. South Dakota and regional performance data on Kota and check varieties are shown in tables 1 and 2. Kota appears best adapted to eastern South Dakota but has the highest statewide and regional average yield of the varieties with which it is compared. Additional agronomic and pathologic data are given in table 3.

Table 1. Performance of Kota and six check varieties in Eastern South Dakota* and the North Central Region†, 1965-1968.

Variety	Yield, Bushels per Acre								Test weight (lbs./bu.)		
	Brookings		Watertown		Centerville		Average of 3 East S.D. locations		North-Central region		3 S.D. loc.
	67-68	66-68	67-68	66-68	67-68	66-68	67-68	66-68	1967	65-67	67-68
Station years	(4)	(6)	(4)	(6)	(4)	(6)	(12)	(18)	(19)	(55)	(12)
Kota	85.6	87.3	91.5	77.5	60.0	64.2	79.0	76.3	84.0	85.1	35.7
Multiline M68	77.0	†	81.1	†	54.0	†	70.7	†	76.1	†	35.0
Holden	74.1	84.0	82.1	73.1	50.8	57.8	69.0	71.6	78.0	83.1	33.3
Portal	78.8	85.0	85.2	74.3	56.8	61.0	73.6	73.4	81.0	83.8	34.1
Jaycee	74.7	80.1	87.6	74.5	55.0	61.6	72.4	72.1	77.5	81.6	35.1
Clintland 64	86.0	86.0	88.4	75.4	63.0	64.4	79.1	75.3	80.6	78.3	35.5
Clintford	76.0	76.0	91.2	80.0	52.4	57.2	73.2	72.5	74.8	78.7	37.0

*1966-1968, Standard Variety Oat Trials plus Uniform Midseason Oat Performance Nurseries.

†1965-1967, Data from Regional Uniform Midseason Oat Performance Nursery reports.

‡First tested in South Dakota and the North Central Region in 1967.

Table 2. Yield of Kota and six check varieties in Western South Dakota* and averages over the entire state†, 1966-1968; bushels per acre.

Variety	Highmore*		Eureka*		Wall*		Bison*		Weighted* averages of 4 West S.D. locations 67-68	Weighted† averages of 7 S.D. locations 66-68
	67-68	67-68	67-68	67-68	67-68	67-68	1967	67-68	67-68	66-68
Station years	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(7)	(19)	(19)
Kota	78.4	85.6	82.4	64.4	79.6	79.2				
Multiline M68	74.8	88.9	74.6	57.6	76.3	72.8				
Holden	76.4	87.2	91.5	72.6	83.2	74.2				
Portal	84.8	79.2	88.6	58.3	80.5	76.1				
Jaycee	81.8	78.6	81.2	58.8	77.4	74.2				
Clintland 64	84.2	80.1	71.6	48.7	74.4	77.4				
Clintford	81.6	88.4	70.5	65.9	78.1	75.0				

*Data from Standard Variety Oat Trials for 4 western test sites.

†Data from Standard Variety Oat Trials plus Uniform Midseason Oat Performance Nurseries.

Table 3. Agronomic and pathologic data on Kota and seven check varieties in the Uniform Midseason Oat Performance Nursery, 1965-1967.*

Variety	Test wt. (lbs./bu.)	Lodging (%)	Groats (%)	Height (in.)	Date head (June)	Date ripe (July)	Crown rust (coef.)	Stem rust (coef.)	Smut (%)	BYDV† (%)
Station years	(55)	(44)	(35)	(50)	(43)	(10)	(22)	(16)	(20)	(15)
Kota	33.3	36.6	71.1	37.2	21	22	27.2	21.6	1.9	55.4
Holden	32.2	23.1	72.6	35.8	20	22	27.2	21.9	0.4	75.1
Portal	33.0	25.4	74.3	37.3	21	23	14.4	14.8	3.5	69.0
Jaycee	33.9	23.0	71.6	32.1	17	19	44.9	18.6	0.4	36.6
Clintland 64	33.3	25.2	74.3	36.2	20	21	20.6	20.3	0.9	69.3
Clintford	35.9	15.6	73.7	32.8	18	21	42.3	34.9	9.1	46.2
Andrew	32.5	41.4	73.0	37.0	17	22	48.5	31.2	1.0	50.6
Mo. 0-205	33.1	37.0	71.8	38.1	19	23	48.4	31.1	0.9	51.5

*Data from Regional Uniform Midseason Oat Performance Nursery reports.

†Barley yellow dwarf (red leaf) virus.



Kota
oats
actual
size

(7.5M—2-69—8813)