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Reaction of Corn Genotypes to the Corn Virus Disease Complex in Tennessee in 1982

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REACTION OF CORN GENOTYPES TO THE CORN VIRUS DISEASE

COMPLEX IN TENNESSEE IN 1982.

D. R. West, H. C. Kincer, and D. R. Kincer^{1/}

The University of Tennessee corn virus project obtains virus ratings each year with two primary objectives: 1) to evaluate susceptibility of commercial hybrids for variety recommendations and; 2) to evaluate breeding stocks that may be useful in the development of virus tolerant germplasm.

Experimental Procedure

Corn genotypes were grown in an area of high natural levels of virus incidence in Humphreys County, Tennessee. The test site is heavily infested with johnsongrass, an alternate and overseasoning host for maize dwarf mosaic virus - strain A (MDMV-A) and maize chlorotoc dwarf virus (MCDV). Leaf samples of corn collected in this area in 1981 were analysed by enzyme-linked immunosorbent assay and found to contain these two viruses in mixed and single infections of individual plants.

Standard agronomic practices for corn yield trials were followed. Fertilizer was applied at recommended rates and herbicides were used to control weeds. The experiments were mechanically planted on May 6. Experiments designed for virus ratings only consisted of one row plots replicated two or three times. Plots

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were 17 feet long with 38 inches between rows. Thirty seeds were planted per plot and thinned to produce a final stand of 22,000 plants per acre if all plants survived.

The experiment for yield evaluation was grown in two row plots with four replications. The population in this test was also 22,000 plants per acre.

Plants were visually rated for virus disease on August 10 and 11, four to five weeks after flowering for most of the genotypes. Ratings were made on a scale of 1 to 9 with 1 indicating no virus symptoms and 9 indicating dead plants. Individual plant ratings were made and these data converted to a plot mean for summary.

The yield experiment was hand harvested on October 13 and field weights were converted to bushels of shelled corn at 15.5% moisture. In the tables that follow, four variables are shown for virus ratings. Number of plants is the total number of plants rated in all replications of an experiment. Virus severity is the average rating of diseased plants only. Virus index was determined from all plants in a plot and incorporates plants with no virus symptoms into the index. Diseased plants is the mean percentage of plants expressing virus disease symptoms.

Summary

The severity of the virus disease was light to intermediate at the Humphreys County site in 1982. Susceptible hybrids included in the yield trial performed much better than would be expected under high virus infection levels. These conditions make the separation of

hybrids into tolerant, intermediate, and susceptible classes difficult, and caution should be used when trying to determine whether an unfamiliar hybrid has virus tolerance based on the 1982 data.

The inbred lines, shown in tables 10 thru 16, are easier to categorize according to level of susceptibility, but they also were not as severely affected as in some previous years. The susceptible checks included in these tests are often completely dead at the time ratings are made. Although these check inbreds received high ratings in 1982 they were able to survive well past midseason.

We wish to express our appreciation to Funk Seeds International of Union City, Tennessee, for providing assistance in the form of land area, planting, and culture of the 1982 corn virus test plots.

Table 1. Corn: Yield and mean virus reaction of selected hybrids grown in Humphreys County, under virus conditions in 1982^{1/}

Hybrid	Yield Bu/A	Grain quality Rating ^{2/}	Diseased plants %	Virus sev. index	Virus mean sev. index
Pioneer brand 3160	128	3.5	54.0	3.5	2.3
Pioneer brand 3147	124	4.0	39.0	3.6	2.0
DeKalb XL72BB	124	4.0	51.0	3.8	2.6
FFR 848C	123	2.5	50.8	3.4	2.2
DeKalb 28012	121	3.5	49.6	3.9	2.3
FFR 955C	121	3.0	38.9	4.0	2.1
Pioneer brand 3187	118	3.0	43.1	3.8	2.1
DeKalb XL394	117	3.5	37.2	4.3	2.1
DeKalb EX8989	116	3.5	43.3	3.4	2.0
McCurdy 81-34	114	3.0	24.2	3.3	1.5
Funk G-4740	114	4.0	54.7	3.6	2.6
McCurdy 7978	114	3.5	40.6	3.7	2.1
DeKalb XL390B	109	3.5	67.1	3.8	2.8
FFR 929W	109	3.0	51.3	4.0	2.6
Pioneer brand 3369A	107	3.5	66.9	4.0	3.0
FFR 717C	107	4.0	58.3	3.6	2.5
Funk G-4733	105	3.0	65.8	4.4	3.2
Golden Harvest H-2660W	105	3.5	71.5	4.1	3.0
DeKalb XL72B	103	4.0	57.0	3.8	2.6
TR 2051W	102	3.0	63.3	3.7	2.8
Pioneer brand 3368A	101	3.0	68.4	4.3	3.3
Princeton SX910	101	3.5	69.4	4.3	3.3
RA 2602W	97	4.0	71.3	4.0	3.1
Funk G-4525A	97	4.0	62.7	3.8	2.8
Cargill 951	95	4.0	33.0	3.8	1.9
Pioneer brand 3328	93	4.5	58.3	4.1	2.8
Pioneer brand 519	90	3.0	62.0	4.6	2.9
L.S.D. (.05)	14.9	-	17.6	0.6	0.6
C.V. %	9.7	-	23.5	10.6	18.4
Avg.	109.4	-	53.1	3.8	2.5

^{1/} Data obtained in cooperation with C. R. Graves.

^{2/} Rating scale 1 through 9 with 1 excellent and 9 poor.

Table 2. Virus ratings of selected full-season hybrids
evaluated in Humphreys County, under virus
conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
Super Crost 7995	55	4.1	1.9	30.9
Pioneer brand 3147	46	4.1	2.3	41.3
N.K. PX95	51	4.1	2.7	54.9
Princeton SP936	53	3.8	2.9	66.0
Zimmerman Z-11W	54	3.9	3.1	72.2
DeKalb 29014	53	4.1	3.1	69.8
Pioneer brand 3165	54	4.3	3.1	63.0
Golden Harvest H-2695	52	4.5	3.2	63.5
Asgrow RX962W	49	3.9	3.2	77.5
RA 3605W	49	4.5	3.3	65.3
McCurdy 8230	47	4.2	3.3	72.3
Stauffer S880W	51	4.1	3.3	72.5
Zimmerman Z-52W	48	4.3	3.4	72.9
Super Crost 6762	57	4.5	3.4	70.2
FFR 905C	55	4.4	3.4	69.1
T.E. 6995A	51	4.1	3.5	80.4
N.K. PX715	49	4.4	3.6	75.5
Gold Kist 925	47	5.2	3.6	61.7
RAX 9609W	47	4.3	3.6	78.7
Coker 22	48	4.8	3.8	72.9
N.K. PX707	52	4.5	3.9	80.8
USS 2020	60	4.8	3.9	76.7
McCurdy 80-72	50	4.9	4.0	76.0
Super Crost 7801	43	5.1	4.2	79.1
Trojan T1230	49	5.2	4.3	77.6
Agri Gold A-6910	50	4.9	4.3	86.0
Princeton SX860	48	5.6	4.6	77.1
DeKalb 24301	50	5.3	4.6	84.0
L.S.D. (.05)		1.0	1.5	29.1
C.V. %		11.1	21.5	20.2
Avg.		4.5	3.5	70.2

Table 3. Virus ratings of selected medium season hybrids evaluated in Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
Stauffer S8500	49	4.3	2.8	55.1
Funk EX29092	62	4.0	2.9	62.9
N.K. PX79	55	3.9	3.1	70.9
RA 1604	50	4.3	3.3	70.0
O's Gold 5291	57	4.8	3.3	61.4
Pioneer brand 3147	57	4.2	3.4	75.4
T.E. 6945	63	4.4	3.4	71.4
Pioneer brand 3320	63	3.9	3.5	87.3
O's Gold 2680W	55	4.6	3.5	70.9
USS 1516	56	4.9	3.5	64.3
USS 1515	45	5.2	3.6	62.2
Asgrow RX777	58	4.8	3.6	69.0
Funk G-4779W	53	4.6	3.7	75.5
Pioneer brand 3184	51	4.3	3.7	82.3
Golden Harvest H-2680	52	4.8	3.8	73.1
McCurdy 8150	50	4.7	3.8	76.0
Zimmerman Z-24Y	55	4.5	3.9	83.6
N.K. PX74	54	5.6	4.2	68.5
Coker 21	56	5.6	4.2	69.6
Golden Harvest H-2630	57	5.7	4.6	75.4
T.E. 6995	45	5.3	4.7	86.7
Funk G-4606	43	5.0	4.7	93.0
Golden Harvest H-2686	48	6.3	5.7	89.6
L.S.D. (.05)		0.9	1.5	28.6
C.V. %		9.0	19.3	18.6
Avg.		4.7	3.8	74.0

Table 4. Virus ratings of selected early maturing hybrids evaluated in Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
DeKalb 28035	59	4.2	3.0	64.4
DeKalb 28016	54	4.2	3.3	68.5
O's Gold 3344	60	4.0	3.6	86.7
O's Gold 2560W	55	4.3	3.6	78.2
FFR 726C	70	4.9	3.8	70.0
Agri Gold A-6612	49	5.1	3.8	67.3
Pioneer brand 3358	58	4.3	3.9	86.2
Pioneer brand 3389	57	4.4	4.0	86.0
McCurdy 81-82	47	5.1	4.1	74.5
O's Gold 2570	57	4.8	4.3	84.2
Cargill 921	48	4.6	4.6	100.0
Gold Kist 695	46	5.0	4.8	93.5
DeKalb EX6060	45	5.4	5.1	91.1
O's Gold 6882	49	5.4	5.1	95.9
Jacques JX180	59	5.8	5.2	86.4
L.S.D. (.05)		0.9	1.2	25.7
C.V. %		9.0	13.1	14.6
Avg.		4.8	4.1	81.9

Table 5. Virus ratings of preliminary hybrids evaluated in
Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
Pioneer brand 3147	53	4.0	2.3	41.5
Gold Kist 875	55	3.6	2.3	52.7
McCurdy 81-35	55	3.8	2.4	50.9
T161 x MP339	54	3.5	2.6	64.8
Agri Gold A-6950W	48	4.4	2.8	52.1
Agri Gold A-830	50	3.8	3.1	74.0
Funk Exp 8006X	56	4.0	3.2	71.4
Jacques JX277	48	4.5	3.5	72.9
Agri Gold A-6810	51	4.4	3.5	72.5
DeKalb 29027	60	4.6	3.6	73.3
T.E. 6995A	57	4.4	3.8	82.5
Gutwein 2875	45	4.6	3.8	77.8
Jacques 8220	48	4.7	3.9	79.2
Beck's 90X	49	4.8	3.9	75.5
Agri Gold A-6955W	50	4.5	4.0	86.0
Beck's 85XA	60	4.3	4.0	91.7
Asgrow RX864	56	4.8	4.1	82.1
Stauffer S8818	52	5.1	4.1	76.9
Agri Gold A-6611	48	5.1	4.2	77.1
Beck's 89X	54	5.0	4.3	83.3
Gutwein 86	51	4.5	4.5	100.0
Gutwein 2910	52	5.3	4.5	82.7
Gold Kist 868	56	5.0	4.6	91.1
Jacques JX247	52	5.3	4.6	84.6
Zimmerman Z-25Y	46	5.2	4.6	87.0
N.K. PX9609	50	5.9	4.8	78.0
T.E. 6998	43	5.7	4.8	81.4
N.K. PX9581	46	5.5	5.2	93.5
Cargill 967	53	5.6	5.2	90.6
L.S.D. (.05)		0.9	1.1	26.3
C.V. %		9.2	14.3	16.7
Avg.		4.7	3.9	76.8

Table 6. Virus ratings of experimental yellow hybrids evaluated in Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
T220xT232	50	4.3	2.4	44
T220xT232C	55	4.2	2.3	40
T220xT232D	50	4.4	2.8	54
T220xT232H	52	4.4	3.0	58
T220xT250	50	3.9	2.1	40
T232x80:106	50	4.6	3.1	60
T232xVaOM73	51	4.2	2.7	53
T232xN132	43	4.2	3.1	65
T232xT252	51	3.8	2.8	65
N132xVaOM73	43	4.5	3.6	77
Pioneer brand 3147	52	4.2	2.3	39
T220xT250	51	4.1	2.9	63
T220AxT254	53	4.8	2.8	47
T220AxT268	53	5.0	4.4	85
T226xB37	41	4.7	4.4	93
T232xMS71	49	5.1	4.2	80
T232xOh570	52	4.1	2.5	48
T232xHJ13	51	4.6	3.2	61
T250xN132	50	4.0	3.4	80
T250xMS71	44	3.9	3.2	75
T250xOh570	52	3.9	2.9	65
T250xHJ13	54	3.9	3.4	81
T250xHJ96	41	5.6	5.3	93
T250xB73	52	6.3	5.1	77
T252xMS71	36	4.3	3.4	72
T252xOh570	51	3.7	2.4	51
T252xHJ13	53	4.3	3.6	77
T252xHJ96	45	4.3	3.7	82
T258xHJ13	50	4.3	3.7	80
T258xHJ96	47	4.9	3.9	75
SC84xMS71	54	4.0	3.8	85
T224x81:53	46	4.6	4.2	89
T264x81:53	57	4.9	4.7	95
T224x81:56	53	4.2	3.9	89
T220x81:56	54	4.6	3.6	72

continued

Table 6. Virus ratings of experimental yellow hybrids evaluated in
Humphreys County, under virus conditions in 1982. (cont.)

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
T232xHJ96	49	4.0	2.7	57
(T232xMo17)xOh07B	48	4.0	2.3	42
(T232xMo17)xN132	59	4.6	2.5	42
(T232xMo17)xMS71	47	4.8	4.2	83
(T232xFRMo17)xOh570	55	4.0	2.5	51
(T232xFRMo17)xMS71	53	4.0	3.3	76
(T268xNC246)xT250	54	4.3	3.2	68
(T268xNC246)xT252	49	4.1	3.2	69
(T268xNC246)x81:576	46	4.1	3.0	65
(T232xGT112)xT250	57	4.1	3.3	57
Mean		4.4	3.3	67
L.S.D. (.05)		0.9	1.3	29
C.V. %		10.2	19.7	21.0

Table 7. Virus ratings of hybrids in the National White Maize Variety Trial (WMVT) evaluated in Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
Acco U398W	85	4.0	3.1	65
Asgrow RX813W	79	4.4	3.8	83
Asgrow RX962W	81	4.6	3.5	71
DeKalb XL390B	79	4.1	3.2	71
DeKalb Exp 10078	83	4.5	4.0	86
DeKalb Exp 10080	78	4.9	4.0	78
Funk G-4747W-1	81	4.4	4.0	87
Funk G-4768W	70	4.7	3.9	77
Funk G-4779W	78	4.6	3.8	78
Funk G-4787W	74	4.1	3.3	75
Golden Harvest H-2644W	70	4.5	4.5	98
Golden Harvest H-2660W	67	4.3	3.3	67
IFSI 74-3	70	4.1	3.2	67
IFSI 77-1	74	4.1	3.0	67
IFSI 79-1	61	4.4	3.4	70
IFSI 79-3	78	3.8	3.0	71
IFSI 80-4	72	4.5	4.2	91
IFSI 80-6	76	4.5	3.2	62
IFSI 80-8	71	4.6	3.4	66
IFSI 80-13	73	4.7	4.5	93
IFSI 81-2	76	4.6	4.5	97
IFSI 81-3	70	4.1	2.8	57
IFSI 82-1	71	4.7	4.6	96
IFSI 82-2	82	4.8	4.0	81
IFSI 82-3	77	5.0	4.3	83
IFSI 82-4	70	4.7	3.8	75
IFSI 82-5	83	4.1	3.6	81
Jaques Exp 81113W	85	5.0	4.6	91
Jaques Exp 81115W	73	4.9	4.6	94
Jaques W200	74	4.6	4.0	81
Jaques W300	67	3.9	2.8	67
Lynks SC-WLA	68	4.3	3.9	86
Lynks SC-WM	70	4.8	3.7	70
Meacham's MV58	77	5.0	3.8	67
Meacham's MV68	64	5.0	3.8	68
Meacham's MV78	58	4.3	3.4	75
Meacham's MV88	68	4.3	2.7	49
Meacham's MX50	61	4.8	4.1	80
NC+ 8707W	73	4.0	3.1	71
Northrup King X-233A	79	4.6	3.8	77

Continued

Table 7. Virus ratings of hybrids in the National White Maize Variety Trial (WMVT) evaluated in Humphreys County, under virus conditions in 1982. (cont.)

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
O's Gold SX2560W	73	4.0	3.7	87
O's Gold SX2680W	68	4.5	2.8	49
P-A-G 386036W	82	4.4	3.7	79
P-A-G SX70W	71	5.1	4.3	80
P-P-G 644W	73	4.2	3.1	64
Pioneer brand 519	81	4.4	3.5	75
Princeton SP936	69	4.8	3.4	67
Princeton SX910	73	4.3	3.9	87
Sturdy Grow SG-908W	70	4.3	4.1	93
Sturdy Grow SG-910W	61	4.9	4.4	87
Sturdy Grow SG-912W	72	5.0	4.0	73
Sturdy Grow SG-935W	74	4.5	2.9	57
Sturdy Grow Exp 0695	69	4.8	3.8	74
Sturdy Grow Exp 1719	62	4.3	3.6	79
Sturdy Grow Exp 1A7517	77	4.8	4.5	90
Sturdy Grow Exp 17563	77	4.3	3.8	83
Whisnand Exp 1W	75	5.2	4.2	76
Whisnand Exp 7W	81	4.7	4.1	84
Whisnand 53W	82	5.7	5.0	85
Whisnand 55W	85	4.8	4.3	88
Whisnand 71W	79	4.4	3.8	84
Whisnand 75W	76	4.6	4.2	89
Whisnand 77W	75	5.1	4.7	91
Whisnand Exp 77-2W	77	4.9	4.2	80
Whisnand 91W	77	4.0	3.0	66
Pioneer brand 3320	77	4.0	3.6	89
B73xMol7	73	5.1	3.7	67
US13	82	5.6	5.1	89
Mean		4.6	3.8	78
L.S.D. (.05)		0.8	1.0	20
C.V. %		10.5	16.7	15.6

Table 8. Virus ratings of hybrids in the Cooperative White Maize Topcross Trial (WMTT) evaluated in Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
(K55xC.I.66)x3316	76	4.7	4.3	88
(K55xC.I.66)xCD-64MV	77	5.2	4.8	91
" xM3-3V	79	4.7	3.8	74
" x93H59V	80	4.9	3.7	69
" x34MLV	77	4.4	3.7	77
(K55xC.I.66)xV73A	78	4.7	3.9	77
" xCLC-93MV	79	4.8	4.5	91
" xKY81-1275	85	3.8	2.8	60
" xKy81-1285	82	6.1	5.8	94
" xKy81-1324	73	5.4	5.0	91
(K55xC.I.66)xT81-2013	77	5.6	5.2	91
" xT81-2034	80	4.6	4.1	85
" xT81-2045	76	4.4	3.5	77
" xT81-2051	71	4.5	3.4	67
" xT153	67	3.9	3.5	85
WSTxMolW	88	4.4	4.0	88
" x33-16	66	5.2	4.1	73
" xT111	77	4.8	3.5	65
" xYCL-93WV	76	5.1	4.3	81
" xCD-64MV	79	5.3	4.3	75
WSTx93H59V	70	4.8	4.2	83
" x34MLV	83	4.3	3.3	70
" xV73A	77	4.9	3.9	74
" xM3-3V	75	5.0	4.0	75
" xKy81-1275	78	4.7	3.2	59
WSTxKy81-1285	81	4.8	3.9	77
" xKy81-1324	79	4.8	3.5	65
" xT81-619	84	4.8	3.4	63
" xT81-4011	74	4.6	3.1	63
" xT81-4013	73	3.9	2.8	59
WSTxT81-4014	82	4.7	3.3	62
" xT81-4015	88	4.0	3.3	76
" xT81-4016	86	4.9	3.6	67
" xT81-4018	78	4.6	3.8	79
" xT81-4019	84	4.2	3.9	89
WSTxT81-4020	77	3.6	2.4	53
" xT81-4021	81	4.3	2.2	81
" xT81-4022	81	3.9	2.8	60
" xT81-4023	80	5.0	3.3	56
" xT81-4024	79	4.0	2.5	48

Continued

Table 8. Virus ratings of hybrids in the Cooperative White Maize Topcross Trial (WMTT) evaluated in Humphreys County, under virus conditions in 1982. (Continued)

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
WSTxT81-4026	80	5.3	4.6	85
" xT81-4027	71	5.1	3.3	55
" xT81-4029	73	4.2	3.6	79
" xB37	78	5.3	4.2	74
" xB73	58	5.2	4.7	88
WSTxFR802W	66	4.8	3.1	56
" xMo17	70	4.2	3.0	66
" xMp339	69	4.2	2.8	57
" xT153	67	3.2	2.5	66
" xT155	86	4.4	3.7	80
WSTxT161	80	4.9	3.7	69
" xT226	80	4.8	3.9	74
" xT232	86	4.7	3.5	68
T161xMp339	71	4.0	2.6	55
Golden Harvest H-2660W	64	3.9	3.0	64
Lynks SC-WLA	67	4.1	3.1	69
Meacham's MV88	66	4.6	3.5	61
Pioneer brand 519	81	4.6	3.2	65
Princeton SP936	75	4.8	3.3	62
B73xMo17	76	5.8	5.4	90
Mean		4.6	3.7	71
L.S.D. (.05)		0.9	1.2	23
C.V. %		12.4	19.7	20.2

Table 9. Virus ratings of experimental white hybrids evaluated in Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
DeKalb XL390B	53	4.5	4.0	85
Funk G-4747-1	45	5.0	4.6	91
(K55xC.I.66)xFR802W	46	4.0	3.4	80
T61wexT161	51	3.7	2.5	55
T151xT161	52	4.3	2.5	46
T151xMp339	48	3.4	2.3	52
T151xC.I.66	51	3.6	2.4	53
T147xT157	54	4.4	3.8	82
T153xMp339	53	3.6	2.7	64
T153xC.I.66	50	3.5	2.8	70
T161xMp339	55	4.1	2.8	56
T151xT155	51	4.2	2.8	57
(K55xC.I.66)xT153	56	4.2	4.0	95
" xT155	53	3.8	3.1	77
" xTR2013-S ₃	49	5.3	5.3	100
(K55xC.I.66)xTR2013-S ₅	46	5.2	5.0	96
" xTR2034-S ₄	48	4.6	4.5	94
" xTR2034-S ₆	55	4.6	4.5	98
" xTR2045-S ₄	48	4.5	4.0	85
" xTR2045-S ₆	51	4.4	3.8	84
(K55xC.I.66)xTR2051-S ₄	45	4.2	3.7	84
" xTR2051-S ₇	56	4.3	3.7	82
" x80:3011	46	4.9	4.0	76
" x80:3031	32	5.2	4.8	91
" x80:3019	51	4.6	3.9	80
T155xMo20W	48	4.6	4.5	96
T155xE199	55	3.8	3.1	76
T155xMo26W	51	4.1	3.2	71
T155x(T141xT161)	55	4.1	3.7	87
T155x(T147xT157)	56	4.2	3.7	82
T155x(T157xT161)	57	4.6	3.8	77
T155x(Ga209xMp339)	55	3.7	3.2	82
T155x(T151xMp339)	52	3.9	3.1	73
Mo20Wx(T161xMp339)	55	4.6	3.0	56
Mo20Wx(T153xT155)	58	4.2	3.8	88
81:908x(T153xT155)	57	4.3	3.7	83
81:910x(T153xT155)	56	4.6	3.8	77
Mean		4.3	3.6	78
L.S.D. (.05)		1.0	1.2	22
C.V. %		11.4	16.4	14.0

Table 10. Virus ratings of yellow inbred lines evaluated in Humphreys County, under virus conditions in 1982.

Inbred	No. of plants	Virus severity	Virus index	Diseased plants %
T268	36	3.9	3.3	78
GT112	34	4.7	4.3	88
H100	33	6.3	6.0	94
H107	30	4.9	4.7	97
H108	32	6.3	6.1	97
T220	42	4.8	4.3	86
T220A	42	4.6	3.5	69
T224	38	4.4	3.8	84
T226	37	5.2	5.2	100
T232	39	4.1	2.7	56
T252	41	3.9	3.3	78
T264	39	5.7	5.7	100
VaOM73	38	5.2	5.1	97
NC246	40	6.0	6.0	100
N132	39	5.5	5.4	97
Oh572	46	4.2	3.3	72
SC84	44	4.9	4.1	80
B37	43	6.4	6.3	98
B73	23	7.9	7.9	100
Mo17	23	5.9	5.7	96
MS71	28	6.8	6.8	100
Oh570	17	3.8	3.1	76
Oh07B	34	4.6	4.0	82
T250	50	4.7	3.8	74
T81:576	39	4.2	3.3	72
T81:55	39	5.3	5.3	100
T81:53	26	6.4	6.4	100
T81:1093	47	3.6	3.4	91
T81:1095	38	3.9	2.8	60
T81:1143	50	3.6	3.3	88
T81:1208	49	6.1	5.6	90
T218 ^{1/}	36	6.0	6.0	100
Mean		5.1	4.6	87
L.S.D. (.05)		1.3	1.4	16
C.V. %		12.7	14.6	9.0

^{1/} Susceptible check.

Table 11. Virus ratings of inbred lines related to T232 evaluated in Humphreys County, under virus conditions in 1982.

Inbred	No. of plants	Virus severity	Virus index	Diseased plants %
T218 ^{1/}	29	7.0	6.6	93
T232	39	4.3	3.3	69
T232A	21	5.0	4.4	86
T232B	50	4.1	3.2	72
T232C	41	4.2	3.4	76
T232D	43	3.9	3.5	84
T232E	43	4.8	4.8	100
T232F	43	3.1	3.1	100
T232H	42	4.4	2.5	45
Mean		4.8	4.2	81
L.S.D. (.05)		1.6	2.2	27
C.V. %		14.8	22.8	14.5

^{1/} Susceptible check.

Table 12. Virus ratings of normal, opaque-2 and floury-2 inbred lines evaluated in Humphreys County, under virus conditions in 1982.

Inbred	No. of plants	Virus severity	Virus index	Diseased plants %
T218 ^{1/}	27	5.5	5.5	100
T220	43	4.5	3.9	84
T220-0 ₂	30	5.0	4.4	83
T222	27	6.4	5.6	85
T222-0 ₂	37	5.7	5.4	95
T222-fl ₂	42	6.0	5.8	95
T224	31	4.4	4.4	100
T224-0 ₂ ^{2/}	-	-	-	-
T224-fl ₂	17	5.1	5.1	100
T232	40	4.0	2.6	53
T232-0 ₂	46	3.6	2.8	67
T232-fl ₂	39	4.1	3.7	85
Mean		4.9	4.5	86
L.S.D. (.05)		1.2	1.4	15
C.V. %		11.1	14.1	7.9

^{1/} Susceptible check.
^{2/} No plants survived.

Table 13. Virus ratings of white inbred lines evaluated in Humphreys County, under virus conditions in 1982.

Inbred	No. of plants	Virus severity	Virus index	Diseased plants %
T13 ^{1/}	24	8.2	8.2	100
T6lwc	41	4.1	3.0	63
T147	35	4.2	2.9	60
T151	29	4.4	3.2	65
T153	16	4.4	4.2	94
T155	45	4.8	4.4	89
T161	39	5.2	5.1	97
E199	38	4.4	3.7	82
Mo20W	50	3.8	3.0	74
Mo26W	22	4.7	4.2	86
	Mean	4.8	4.1	81
	L.S.D. (.05)	1.5	1.5	19
	C.V. %	13.8	16.1	10.4

^{1/} Susceptible check.

Table 14. Virus ratings of experimental white inbred lines evaluated in Humphreys County, under virus conditions in 1982.

Inbred	No. of plants	Virus severity	Virus index	Diseased plants %
T13 ^{1/}	25	7.5	6.8	88
T115	39	5.0	5.0	100
C.I.66	33	4.9	3.6	67
FR802W	31	4.9	3.3	58
Mp339	19	5.6	5.2	89
81:578	37	3.7	2.2	46
81:629	43	5.0	4.7	93
79:590	33	4.3	2.2	36
79:593	30	5.6	4.9	83
81:981	36	5.4	5.3	97
81:1143	48	4.0	3.5	81
81:1243	46	3.8	3.4	85
81:1250	46	4.7	4.5	96
81:1255	35	7.5	7.5	100
81:609	34	6.1	5.7	91
81:615	40	6.5	6.5	100
81:1209	37	3.9	3.2	78
81:1211	41	3.8	3.3	80
81:1213	43	5.1	3.9	72
81:1018	40	3.8	3.2	77
81:1041	50	5.3	5.3	100
81:993	40	6.7	6.4	95
81:619	40	3.9	2.7	57
81:621	40	4.0	3.2	73
81:611	45	4.2	3.4	76
81:674	33	6.0	5.4	88
81:681	43	4.7	2.6	44
81:595	43	5.0	3.5	63
81:947	41	4.4	3.5	76
81:966	41	5.2	3.6	61
81:980	46	4.8	4.7	96
81:983	45	3.3	2.6	47
81:990	38	5.1	4.6	87
81:1006	41	4.0	2.8	61
81:1008	50	3.5	2.8	70
81:1013	42	4.1	3.2	71
81:1024	41	3.9	2.6	54
81:1036	37	6.5	5.9	89
81:1040	40	5.6	5.5	97
Mean		4.9	4.1	77
L.S.D. (.05)		1.3	1.5	23
C.V. %		13.4	18.5	14.9

^{1/} Susceptible check.

Table 15. Virus ratings of miscellaneous inbred lines evaluated in Humphreys County, under virus conditions in 1982.

Inbred	No. of plants	Virus severity	Virus index	Diseased plants %
T13 <u>1</u> / OP-Je26 <u>2</u> / OP-Je49	18	8.0	8.0	100
T212	15	4.2	4.2	100
T246	35	6.5	6.5	100
	27	6.6	6.6	100
T246A	19	4.1	4.1	100
Blight Res B-S ₅	21	7.3	7.3	100
Mp303	14	5.6	5.6	100
Mp486	22	6.2	6.2	100
Mp496	23	4.3	4.3	100
AKD 24Y	15	6.5	6.5	100
AKH 42Y	18	5.3	5.3	100
ARK 341Y	11	6.3	6.3	100
AR 101W	25	4.7	4.4	92
Ge 311W	30	5.8	5.8	100
GTO-1836	26	4.7	4.2	85
NC 242	37	5.3	4.9	92
NC 244	16	3.8	3.8	100
NC 248	34	5.9	5.9	100
NCTJ526	30	4.6	4.4	93
Ky201	17	6.3	5.9	94
Ky228	8	7.2	7.2	100
Ky225	31	5.4	4.7	84
T218 <u>1</u> / Mean	39	6.7	6.4	95
		5.7	5.6	97
		1.9	1.9	NS
		16.3	16.8	5.6

1/ Susceptible check.

2/ No plants survived.

Table 16. Virus ratings of inbred lines of sweet corn evaluated in Humphreys County, under virus conditions in 1982.

Inbred	No. of plants	Virus severity	Virus index	Diseased plants %
81:497	25	6.8	6.6	96
81:498	12	4.1	3.8	92
81:499 ^{1/}				
81:500	16	8.4	8.4	100
81:503	34	4.6	4.6	100
81:509	13	6.4	6.4	100
81:510	12	8.2	8.2	100
81:512	32	5.0	5.0	100
81:513	21	5.3	5.3	100
81:514	20	5.1	4.3	80
81:515	28	5.7	5.7	100
81:516	24	4.5	4.5	100
Ga Special-S ₈	28	3.9	2.4	50
(Evergreen 471-V6x81-1)-S ₉	29	5.5	5.5	100
(K3.GSxC68)-S ₈	8	5.3	4.8	90
((K3.GSxC68)-S ₈ x(K3.GSxC68))-S ₆ ^{1/}				
((T24S.C68)-4SxT40S)-S ₁₂	15	6.5	6.5	100
(GCBx(BM.SC))-S ₁₂	26	6.8	6.8	100
((T13.P39)x(T13.P51))-S ₁₄	17	6.2	6.2	100
H2.39W	18	5.8	5.8	100
Mean		5.8	5.6	95
L.S.D. (.05)		2.0	2.3	17
C.V. %		16.3	19.5	8.7

^{1/} No plants survived.

Table 17. Virus ratings of sweetcorn hybrids evaluated in
Humphreys County, under virus conditions in 1982.

Hybrid	No. of plants	Virus severity	Virus index	Diseased plants %
81:301	38	4.0	4.0	97
81:303	38	3.3	2.9	84
81:305	48	4.2	3.2	69
81:313	43	4.2	3.0	63
81:307	33	4.2	3.6	82
81:309	35	4.1	3.7	89
81:311	33	4.3	3.6	79
Candystick II	21	5.7	5.7	100
Six Shooter	26	6.6	6.6	100
79:316x315	46	3.3	2.1	48
Xtra-sweet 82	28	6.5	6.3	96
Florida Staysweet	30	6.3	6.3	100
Seneca Chief	28	8.0	8.0	100
Seneca Sentry	34	4.0	4.0	100
Seneca Scout	20	5.6	5.6	100
Seneca RxP	36	4.7	4.6	97
HKxSilver Queen	39	4.5	4.1	87
HKx80:446	32	4.1	3.7	87
DKS-YY	32	5.6	5.4	97
Silver Queen	26	3.9	3.9	100
Mean		4.9	4.5	89
L.S.D. (.05)		1.3	1.4	22
C.V. %		12.7	14.2	12.0