sectored kernel selected from a self-red ear of one of these families. The phenotype of this mutant was non-variegated. Further study will be conducted in an attempt to determine the cause of the pericarp sectoring observed in this group of families.

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III. REPORT ON MAIZE COOPERATIVE

Work of the past season was concentrated principally on improving plant vigor and increasing seed supplies of the traits and tester combinations listed in the accompanying catalogue of stocks. Approximately 35,000 plants, comprising 2,200 families, were grown last summer; about 15,000 pollinations were made. Additional plantings were made in greenhouse and Florida generations.

Further crosses were made to derive new tester combinations or to determine chromosome positions of unmapped traits. It is hoped that this work, along with research on newly-acquired traits, may be intensified next season.

As time permits, all stocks are being gradually converted to the inbred lines M14, W23, and Oh51A. As a consequence of this program of developing stocks adapted to the Corn Belt, a considerable amount of effort is required to re-extract tester combinations and to confirm genetic constitutions.

Seed requests have risen sharply during the past few years. Two to three months each year are now required to supply stocks and provide information on the classification, use, and linkage relations of genetic traits.

The following listing of Maize Cooperative stocks includes the more useful combinations now available. Seed requests should be sent to the Botany Department, University of Illinois, Urbana, Illinois.

Chromosome 1

ad_1 an_1 bm_2

ad_1 Kn

an_1 Kn bm_2

as

Hm

Kn

Kn Ts_6

lw_1

necrotic 8147-31

pCR

pCW

pMO

p^{RR} ad_1 an_1

p^{RR} ad_1 bm_2

p^{RR} an_1 gs_1 bm_2

p^{RR} br_1 f_1 an_1 gs_1 bm_2

p^{RR} br_1 f_1 gs_1 bm_2

pVV

p^{WR} bm_2

p^{WR} gs_1 bm_2

p^{WW} br_1 f_1 bm_2

p^{WW} br_1 f_1 an_1 gs_1 bm_2

sr_1 p^{WR} an_1 bm_2

sr_1 p^{WR} an_1 gs_1 bm_2

sr_1 zb_4 p^{WW}

ts_2 p^{WW} br_1 bm_2

Ts_3

Ts_6

v_{19} bm_2

Vg

Vg an_1 bm_2

v_{p5}

v_{p8}

zb_4 ms_{17} p^{WW}

Chromosome 1 (Continued)

zb_4 p^{WW} bm_2

zb_4 p^{WW} br_1

zb_4 ts_2 p^{WW}

Chromosome 2

al lg_1

al lg_1 gl_2 B sk

al lg_1 gl_2 b sk

ba_2

fl_1

lg_1 gl_2 B

lg_1 gl_2 b

lg_1 gl_2 b fl_1 v_4

lg_1 gl_2 b fl_1 v_4 Ch

lg_1 gl_2 B gs_2

lg_1 gl_2 b gs_2 v_4

lg_1 gl_2 b gs_2 v_4 Ch

lg_1 gl_2 B sk v_4

lg_1 gl_2 b sk v_4

lg_1 gl_2 b sk fl_1 v_4

lg_1 gl_2 B v_4

lg_1 gl_2 b v_4

lg_1 gl_2 b v_4 Ch

lg_1 gs_2 b v_4

ws_3 lg_1 gl_2 B

ws_3 lg_1 gl_2 b

ws_3 lg_1 gl_2 b fl_1 v_4

ws_3 lg_1 gl_2 B sk

ws_3 lg_1 gl_2 b sk

Chromosome 3

A_1 ga_7; A_2 C R

A_1 sh_2; A_2 C R

A^{d-31}; A_2 C R

A^{d-31} sh_2; A_2 C R

a^p et; A_2 C R Dt_1

a_1; A_2 C R B Pl dt_1

a_1 et; A_2 C R Dt_1

a_1 sh_2; A_2 C R Dt_1

a_1 sh_2; A_2 C R dt_1

a_1 sh_2 et; A_2 C R Dt_1

a_1^{st} sh_2; A_2 C R Dt_1

a_1^{st} et; A_2 C R Dt_1

a_{x-1}; A_2 C R

a_{x-3}; A_2 C R

a_{x-3} et; A_2 C R

an_2 = allele of d_1

ba_1

Cg

cr_1

d_1

d_1 Cg

d_1 gl_6

d_1 gl_6 Lg_3

d_1 lg_2

d_1 Lg_3

d_1 Lg_3 Rg

d_1 pg_2

d_1 Rg

d_1 rt

d_1 ts_4 lg_2

d_2

gl_6

gl_6 lg_2 a_1 et; A_2 C R Dt_1

gl_6 Lg_3

Chromosome 3 (Continued)

gl_6 Rg

gl_6 v_{17}

gl_6 v_{17} lg_2

gl_7

lg_2 A_1^b et; A_2 C R Dt_1

lg_2 a_1 et; A_2 C R Dt_1

lg_2 a_1 sh_2 et; A_2 C R Dt_1

lg_2 a_1^{st} et; A_2 C R Dt_1

lg_2 pm

Lg_3

pg_2

pm

ra_2

ra_2 lg_2 pm

ra_2 Rg

Rg

rt; A_1 A_2 C R

ts_4 na_1

v_{17}

vp_1

Primary trisome 3

Chromosome 4

bm_3

bt_2

de (1 or 16?)

$\frac{Ga_1\ Su_1}{ga_1\ su_1}$

gl_3

j_2

j_2 gl_3

la su_1 gl_3

la su_1 Tu gl_3

Chromosome 4 (Continued)

lo Su_1

lo su_1

lw_4; lw_3

o_1

sp_1 su_1

st

su_1 bm_3

su_1 gl_3

su_1 gl_4

su_1 j_2 gl_3

su_1 o_1

su_1 ra_3

su_1 Tu

su_1 Tu gl_3

su_1 zb_6

su_1 zb_6 gl_3

su_1 zb_6 Tu

su_1^{am}

Ts_5

Ts_5 st

Ts_5 su_1

Tu gl_3

v_8

Chromosome 5

a_2; A_1 C R

a_2 bm_1 bt_1 bv_1 pr; A_1 C R

a_2 bm_1 pr v_2; A_1 C R

a_2 bm_1 pr ys_1; A_1 C R

a_2 bt_1 pr; A_1 C R

a_2 bt_1 pr ys_1; A_1 C R

a_2 pr; A_1 C R

ae

Chromosome 5 (Continued)

bm_1 pr; A_1 A_2 C R

bm_1 pr v_2; A_1 A_2 C R

bm_1 pr ys_1; A_1 A_2 C R

bm_1 pr ys_1 v_2; A_1 A_2 C R

bm_1 yg_1

bt_1 pr; A_1 A_2 C R

Ga Bt_1

ga bt_1

gl_5

gl_8

gl_{17} a2 bt_1 v_2; A_1 C R

gl_{17} v_2

intensifier of pr closely linked to bt_1

lw_2

lw_3; lw_4

na_2

na_2 pr

pr; A_1 A_2 C R

pr ys_1; A_1 A_2 C R

sh^{fl}= "sh_4"

"sh_3" = allele of bt_1

tn

v_3 pr; A_1 A_2 C R

v_{12}

vp_2 gl_8

vp_2 pr; A_1 A_2 C R

vp_7

vp_7 pr; A_1 A_2 C R

Chromosome 6

at = allele of si_1

po Y_1 pl

po y_1 pl

Chromosome 6 (Continued)

Pt

si_1 Y_1 Pl

si_1 Y_1 pl

si_1 y_1 pl

y_1 l_{10}

Y_1 ms (1?)

y_1 ms (1?)

y_1 pb_4 Pl

y_1 pb_4 pl

Y_1 pg_{11}; wx pg_{12}

y_1 pg_{11}; wx pg_{12}

y_1 Pl Bh

y_1 pl Bh

Y_1 Pl sm py; A_1 A_2 b P^{RR}

Y_1 pl su_2

y_1 pl su_2

Y_1 Pl; seg w_1

Y_1 pl; seg w_1

y_1 Pl; seg w_1

y_1 pl; seg w_1

"male sterile-silky" = allele of si_1

"orobanche" (seedling)

"ragged" (seedling)

"white 8522" (seedling)

"white 8896" (seedling)

Chromosome 7

bd

Bn_1

g2

gl_1 ij bd

gl_1 sl Bn_1

Hs

Chromosome 7 (Continued)

ij

in; pr A_1 A_2 C R

o_2

o_2 gl_1 sl

o_2 gl_1 sl Bn_1

o_2 ra_1 gl_1

o_2 v_5 gl_1; seg ra_1

o_2 v_5 ra_1 gl_1

o_2 v_5 ra_1 gl_1 Hs

ra_1 gl_1

Tp_1

v_5 gl_1 Tp_1

va_1

vp_9 gl_1; wx

Chromosome 8

mn

v_{16} ms_8 j_1

v_{16} ms_8 j_1; l_1

"necrotic 6697" (seedling)

"sienna 7748" (seedling)

Chromosome 9

au_1 au_2

Bf_1

bk_2 ms_{20}

bk_2 Wc

bm_4

C sh_1 wx; A_1 A_2 R

c sh_1 wx; A_1 A_2 R

c sh_1 wx gl_{15}; A_1 A_2 R

c wx; A_1 A_2 R

Chromosome 9 (Continued)

c wx bk_2; A_1 A_2 R

Dt_1 (See Chromosome 3 stocks)

I wx; A_1 A_2 R Pr B pl

I wx; A_1 A_2 R pr B pl

K_9^L C sh_1 wx; A_1 A_2 R

l_7

ms_2

ms_2 sh_1; A_1 A_2 C R

ms_{20}

sh_1 wx d_3

sh_1 wx l_7

sh_1 wx pg_{12}; y pg_{11} pl

sh_1 wx v_1

wx ar

wx Bf_1

wx bk_2

wx d_3

wx da_1; A_1 A_2 C R

wx g_4

wx l_6

wx pg_{12}; Y pg_{11}

wx pg_{12}; y pg_{11}

wx^a

yg_2 c sh_1 wx; A_1 A_2 R

yg_2 C sh_1 bz wx; A_1 A_2 R

Primary trisome 9

Chromosome 10

a_3

bf_2

du_1

g_1

g_1 l_2

Chromosome 10 (Continued)

g_1 ^{rg}; A_1 A_2 C

g_1 ^{r} sr_2

gl_9

l_1; v_{16} ms_8 j_1

li g_1 R; A_1 A_2 C

li g_1 r; A_1 A_2 C

li g_1 r; A_1 A_2 C; carries abnormal 10

nl_1 g_1 R; A_1 A_2 C

Og R; A_1 A_2 C B Pl

^{Rg} sr_2

^{r} sr_2

^{Rmb}; A_1 A_2 C

^{Rnj}; A_1 A_2 C

^{Rst}; A_1 A_2 C

v_{18}

w_2

zn

"oil yellow" (seedling and plant)

Primary trisome 10

Unplaced genes

cl

ct

de_{17}

dv

dy

fl_2

gl_{11}

gl_{12}

gl_{14}

gl_{16}

gl_g

h

Unplaced genes (Continued)

l_3

ms_5

ms_6

ms_7

ms_9

ms_{10}

ms_{11}

ms_{12}

ms_{13}

ms_{14}

Mt

New starchy

rd

Rs_1

rs_2

"sh_5"

tw_1

tw_2

v_{13}

va_2

vp_6

wi

ws_1 ws_2

zb_1

zb_2

zb_3

Multiple gene stocks

A_1 A_2 C R^r Pr B Pl

A_1 A_2 C Rg Pr B Pl

A_1 A_2 C Rg Pr B pl lg_1 y

A_1 A_2 C R Pr

A_1 A_2 C R Pr wx

Multiple gene stocks (Continued)

A_1 A_2 C R Pr wx gl_1

A_1 A_2 C R Pr wx y

A_1 A_2 C R pr

A_1 A_2 C R pr su_1

A_1 A_2 C R pr su_1 y wx

A_1 A_2 C R pr y gl_1

A_1 A_2 C R pr y wx

A_1 A_2 C R pr y wx gl_1

A_1 A_2 c R Pr su_1

A_1 A_2 c R Pr y wx

A_1 A_2 c R Pr y sh_1 wx

A_1 A_2 C r Pr su_1

A_1 A_2 C r Pr su_1 y g_1

A_1 A_2 C r Pr y wx

A_1 A_2 C r Pr y sh_1 wx

bm_2 lg_1 a_1 su_1 pr y_1 gl_1 j_1 wx g_1

colored scutellum

lg_1 su_1 bm_1 y_1 gl_1 j_1

su_1 y_1 wx a_1 A_2 C Rg pr

y_1 su_1 ra_1 gl_1

y_1 wx gl_1

Popcorns

Amber Pearl

Black Beauty

Hulless

Ladyfinger

Ohio Yellow

Red

South American

Supergold

White Rice

Exotics and Varieties

Argentine Popcorn

Black Mexican Sweet Corn (with B chromosomes)

Black Mexican Sweet Corn (without B chromosomes)

Gourdseed

Maiz chapolote

Papago Flour Corn

Parker's Flint

Strawberry Popcorn

Tama Flint

Tom Thumb Popcorn

Zapaluta chica

Chromosome rearrangements

The following rearrangements are being maintained primarily for use in determining the chromosome locations of new traits. All are marked with closely-linked endosperm or seedling traits.

The cytological positions of Inv 2a were determined by Dr. Morgan. those of Inv 9a were determined by Dr. Li. The indicated interchange points of the reciprocal translocations are taken from published work of Dr. Longley.

Inversions

lg_1 or gl_2 Inv 2a (also available with Ch)	2S.7; 2L.8
wx Inv 9a	9S.7; 9L.9

Reciprocal translocations

wx 1-9c	1S.48; 9L.22
wx 1-9 4995	1L.19; 9S.20
wx 2-9b	2S.18; 9L.22
wx 3-9c	3L.09; 9L.12
wx 3-9 5775	3L.09; 9S.24
wx 4-9b	4L.90; 9L.29
wx 4-9 5657	4L.33; 9S.25
wx 4-9g	4S.27; 9L.27
wx 5-9a	5L.69; 9S.17
wx 5-9c	5S.07; 9L.10
wx 5-9 4817	5L.06; 9S.07
wx 5-9 5614	5L.09; 9L.06
wx 6-9a	6S.79; 9L.40
wx, y 6-9b	6L.10; 9S.37
wx 6-9 4505	6L.13; 9 cent
wx 6-9 4778	6S.80; 9L.30
wx 7-9a	7L.63; 9S.07
wx or gl_1 7-9 4363	7 cent; 9 cent
wx 8-9d	8L.09; 9S.16
wx 8-9 6673	8L.35; 9S.31
wx 9-10b	9S.13; 10S.40
su 1-4a (also available with ^{pRR})	1L.51; 4S.69
su 1-4d (also available with ^{pRR})	1L.27; 4L.30
su 4-5j	4L.21; 5L.36
su, y 4-6a	4L.37; 6L.43
su 4-8a	4S.59; 8L.19
su, R 4-10b	4L.15; 10L.60
y 1-6c (also available with ^{pRR})	1S.25; 6L.27
gl_2 2-3c	2S.46; 3S.52
gl_2 2-3 5304	2S.62; 3L.29
gl_2 2-6b	2S.69; 6L.49
gl_2, R 2-10b	2S.50; 10L.75
gl_1 6-7 4545	6L.25; 7S.73

Stocks of A-B chromosome translocations

B-1a	1L.2	Proximal to Hm
B-1b	1S.05	
B-3a	3L.1	
B-4a	4S.25	Proximal to su1
B-7b	7L.3	Proximal to ra1
B-9a	9L.5	
B-9b	9S.4	Between C and wx; close to wx
B-10a	10L.35	Proximal to g1

-- Earl B. Patterson