CIMMYT

Centro Internacional de Mejoramiento de Maíz y Trigo
International Maize and Wheat Improvement Center

Lisboa 27, Apdo. Postal 6-641, 06600
México, D. F. México

International Maize Testing Unit

CIMMYT Maize Program

History of CIMMYT's International Maize Testing

Preliminary activities

1943 Office of Special Studies established. Collection, preliminary testing and selection in Mexico.

1950's Collection in Central and South America and Caribbean.

1960 Inter-American Maize and Wheat Programs established. Germplasm exchange accelerates.

1963 CIMMYT established as cooperative program between Mexican government and Rockefeller Foundation.

1964 CIMMYT wheat international nurseries initiated.

1966 CIMMYT established as international center. Development of broad-based gene pools, focusing largely on Tuxpeño, Cuban Flints, and Coastal Tropical Flints. Research on breeding methods, insect and disease resistance, and protein quality.

OBS	SITE	GENOTYPE	YLD	PCA1	PCA2	PCA3
1		1	5519.05	-48.3168	59.4949	26.8552
2		10	6033.56	-11.9711	-23.0723	29.2774
3		11	4898.99	7.2037	22.5885	-34.6047
4		12	5838.20	5.4014	-12.6912	17.2491
5		13	4988.80	-1.5374	22.8544	-54.9199
6		14	5672.39	-1.5973	32.1146	-0.1560
7		15	4885.48	20.7082	-29.5880	7.6212
8		2	5954.01	-13.4985	11.9155	16.6773
9		3	5612.45	16.4647	4.1991	31.6340
10		4	5527.40	-59.0376	-60.9398	-18.0759
11		5	5255.37	23.2017	4.1321	22.0433
12		6	5716.78	-3.4818	-20.0162	4.0894
13		7	5486.70	-20.1982	-0.2306	-24.9482
14		8	5156.50	53.0160	-5.7215	-1.9218
15		9	5170.82	33.6430	-5.0395	-20.8202
16	1		4448.74	-4.2929	-0.6581	1.5541
17	10		3618.16	13.6686	4.0633	-13.7547
18	11		6540.96	-5.5941	26.6446	-4.6645
19	12		1882.22	8.0195	8.3779	-11.9591
20	2		4828.35	-1.6400	-5.4420	-7.4860
21	3		9703.93	-21.5688	-5.7254	22.3654
22	4		7847.90	-32.3656	4.8059	5.9894
23	5		7429.78	10.7437	2.7829	3.4647
24	6		6072.50	19.4292	-34.6566	13.6671
25	7		5779.20	-15.4413	-23.1402	-25.5900
26	8		4524.19	14.2460	12.3017	22.3668
27	9		2447.53	14.7956	10.6462	-5.9532

History of CIMMYT's International Maize Testing

1967 - 1973	Continued formation of gene pools and selection for yield, morphological traits, pest resistance, earlier maturity, and uniformity. International Maize Adaptation Nurseries. International Opaque-2 Maize Trials. Regional Trials.
1974	Systematic international testing program begins with IPTT's, one year per cycle of selection.
1975	EVT's distributed.
1976	ELVT's distributed. IPTT's change to two years per cycle of selection.

CMTH YEAR 1994

MEAN GRAIN YIELD (T/HA) BY LOCATIONS AND OVERALL MEANS
YEAR: 1994 No. LOCATIONS: 12

ENTRY	ENTRY NAME	CENTRAL AMERICA LOC. 1	LOC. 2	LOC. 3	LOC. 4	LOC. 5	LOC. 6	LOC. 7	LOC. 8	LOC. 9	LOC.10
4	CMT 939011	7.12	6.89	6.04	2.54	4.71	4.50	7.58	1.44	8.91	6.51
2	CMT 939005	6.94	6.49	6.77	1.95	4.59	3.29	6.74	2.84	9.18	7.01
12	PUMA 1159	7.69	4.75	7.00	1.75	7.85	3.20	4.40	1.83	9.77	8.08
1	CMT 939003	6.96	4.59	5.97	2.36	5.01	3.06	5.68	2.26	8.56	6.40
3	CMT 939009	5.75	4.44	6.29	2.82	4.74	4.29	6.15	2.22	8.54	6.40
10	CMS 929001	4.79	4.89	6.17	3.14	5.30	3.60	6.20	2.76	8.68	7.24
9	CMT 939047	5.48	5.09	6.02	2.43	4.51	2.82	7.26	2.03	9.23	6.25
11	H-34	5.40	7.32	3.29	3.24	5.98	3.65	5.81	2.37	8.03	4.71
8	CMT 939021	6.45	4.12	4.42	2.23	6.16	2.55	6.79	1.72	9.07	6.04
7	CMT 939019	6.68	3.65	5.67	2.31	4.08	2.34	6.53	1.20	8.40	6.31
14	POOL 9A C7	4.73	4.01	2.89	1.28	6.53	3.24	5.39	1.20	6.49	7.48
6	CMT 939015	6.18	3.87	5.73	2.07	3.67	2.66	6.62	1.40	8.15	5.59
5	CMT 939013	5.94	2.17	5.03	1.91	4.36	3.09	6.02	1.50	7.42	4.83
13	CALERA 9185	4.84	2.74	4.62	1.37	3.63	3.39	5.15	1.08	6.41	4.57
15	TESTIGO LOCAL-1/LOCA	8.39	5.39	9.58	3.43	5.71	4.37	6.62	0.78	8.36	11.74
16	TESTIGO LOCAL-2/LOCA	7.35	4.04	10.56	3.13	8.74	3.48	6.69	0.92	9.99	9.29
	MEANS	6.07	4.64	5.42	2.24	5.08	3.26	6.16	1.85	8.35	6.24
	CV(%)	12.30	24.70	14.60	28.00	17.90	23.30	14.90	35.00	10.10	14.10

ENTRY	ENTRY NAME	SOUTH AMERICA LOC.11	LOC.12	OVERALL MEANS GRAIN YIELD	DAYS SILK	PLANT HT(CM)
4	CMT 939011	2.48	6.57	5.44	106.24	152.06
2	CMT 939005	2.29	5.85	5.33	105.74	155.28
12	PUMA 1159	2.86	4.59	5.31	118.79	170.03
1	CMT 939003	3.15	4.96	4.91	97.66	140.33
3	CMT 939009	2.53	4.57	4.89	101.60	140.53
10	CMS 929001	1.45	4.49	4.89	107.07	153.20
9	CMT 939047	1.54	5.02	4.81	107.70	148.88
11	H-34	1.77	5.87	4.79	117.28	176.94
8	CMT 939021	2.58	3.61	4.64	100.61	141.68
7	CMT 939019	2.84	3.68	4.47	102.07	141.44
14	POOL 9A C7	4.22	5.38	4.40	116.67	179.00
6	CMT 939015	2.03	3.80	4.31	96.33	136.13
5	CMT 939013	2.00	3.67	4.00	99.48	140.26
13	CALERA 9185	1.62	3.36	3.56	94.04	128.29
15	TESTIGO LOCAL-1/LOCA	5.96	7.02	6.45	109.52	169.16
16	TESTIGO LOCAL-2/LOCA	6.42	7.57	6.52	116.36	165.48
	MEANS	2.38	4.67	4.70		
	CV(%)	18.40	9.20			

No	LOC.	COUNTRY
1	PABELLON AGS.	MEXICO
2	METEPEC	MEXICO
3	IRAPUATO, GTO.	MEXICO
4	TAPALPA, JAL.	MEXICO
5	CALERA ZAC.	MEXICO
6	AMECAMECA MEX.	MEXICO

OBS	EIGEN1	EIGEN2	EIGEN3
1	0.28738	0.27248	0.17813

History of CIMMYT's International Maize Testing

1988 Megaenvironment data used to target germplasm and set priorities.

1989 Agro-ecological information is requested and published for each trial location.
Variable size of IPTT's: 11 x 11 to 16 x 16 lattices.
Number of populations in IPTT system reduced.

1990 IPTT size: 12 x 12 lattice.

1991 Instead of ELVT's, elite varieties are recycled within appropriate EVT.
Special purpose varieties are entered in EVT's.
Internal review.

1992 IPTT size: 14 x 14 lattice.
External review.

1993 Identification of key sites.

1994 ⓚ CIMMYT Hybrid trials started.

ⓒ Plot size reduced from 4 Row to 2 Rows.

Analysis of Variance Procedure
Class Level Information

Class	Levels	Values
NUMSITE	12	1 2 3 4 5 6 7 8 9 10 11 12
NUMVAR	15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Number of observations in data set = 705

Analysis of Variance Procedure

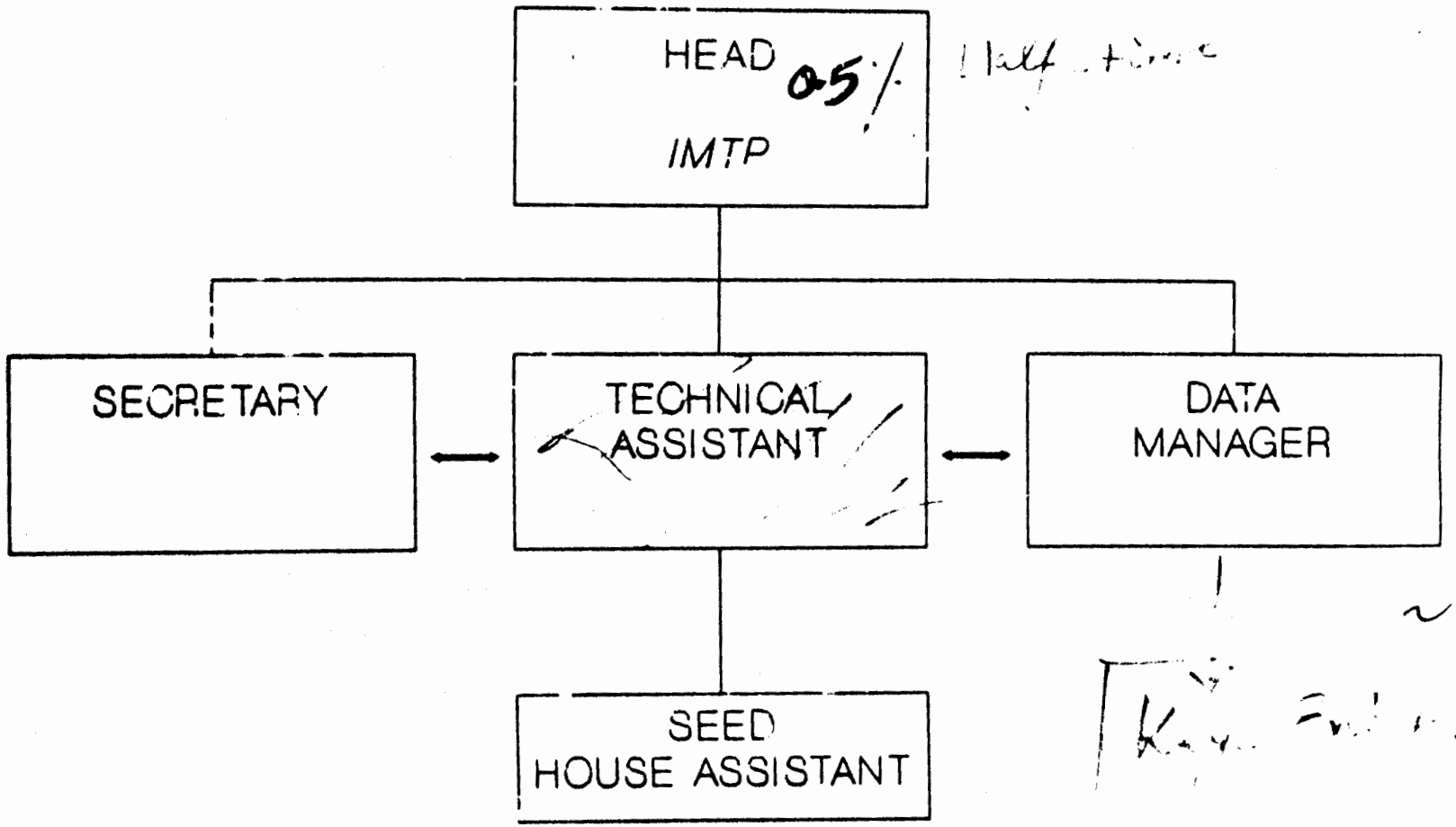
Dependent Variable: YLD

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	179	3971201009.12149000	22185480.49788540	22.64	0.0001
Error	525	514377003.41831200	979765.72079679		
Corrected Total	704	4485578012.53980000			

R-Square	C.V.	Root MSE	YLD Mean
0.885326	18.16949	989.83115772	5447.76609929

Source	DF	Anova SS	Mean Square	F Value	Pr > F
NUMSITE	11	3392784672.29270000	308434970.20842700	314.80	0.0001
NUMVAR	14	91240376.73513410	6517169.76679530	6.65	0.0001
NUMSITE*NUMVAR	154	487175960.09365400	3163480.26034841	3.23	0.0001

INTERNATIONAL MAIZE TESTING PROGRAM



[illegible]	[illegible]	6.04	[illegible]	5.29	[illegible]	205.84
14	CMT 933152	5.68	5.25	5.25	66.87	213.95
17	CMT 933188	5.41	7.31	5.24	65.74	204.00
8	CMS 933094	5.78	6.14	5.24	66.51	211.27
7	CMS 933092	5.49	6.11	5.14	65.81	209.98
16	CMT 933176	5.76	5.87	5.08	66.68	211.78
4	CMS 933074	5.61	7.29	4.97	66.11	198.05
11	CMT 933018	4.13	4.18	4.90	64.31	202.69
1	CMS 933010	5.45	5.33	4.88	66.57	204.10
10	CMS 933116	5.79	5.28	4.85	62.27	203.75
13	CMT 933150	4.80	4.64	4.84	65.61	206.43
12	CMT 933068	5.29	4.92	4.82	65.53	214.48
2	CMS 933106	6.04	4.46	4.73	66.33	204.55
[illegible]	[illegible]	4.83	5.96	4.24	62.86	196.41
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	5.87	7.52	4.90	[illegible]	[illegible]
	MEANS	5.47	5.77	5.08		
	CV(%)	10.10	13.50			

	No	LOC.	COUNTRY
39	1	ILAGAN	PHILIPPINES
37	2	DAN PHUONG	VIETNAM
38	3	DAN PHUONG (2)	VIETNAM
36	4	SONG-BOI	VIETNAM
32	5	TAK FA	THAILAND
31	6	SUWAN	THAILAND
33	7	R&D STATION BAN	THAILAND
34	8	PATTANANIKOM, L	THAILAND
35	9	LOPBURI	THAILAND
30	10	BOGOR	INDONESIA
29	11	ILLUPPALLAMA	SRI LANKA
28	12	BANGALORE	INDIA
25	13	LUDHIANA	INDIA
26	14	JALNA	INDIA
	15	ARABHAVI	INDIA
	16	U.P. LOS BANOS	PHILIPPINES
	17	SINEMATIALI	COTE D'IVOIRE
	18	WARDA/ADRAO-MBE	COTE D'IVOIRE
	19	S.JUAN MAYUANA	DOM.REP
	20	SAN CRISTOBAL	DOM.REP
	21	ALQUIZAR	CUBA
	22	LOS MOCHIS SIN.	MEXICO
	23	RIO HATO	PANAMA
	24	EJIDO	PANAMA
	25	PARITA	PANAMA
	26	TLALTIZAPAN	MEXICO
	27	POZA RICA	MEXICO
	28	LOS MOCHIS	MEXICO
	29	LAS VEGAS	GUATEMALA
	30	SAN JERONIMO	GUATEMALA
	31	CUYUTA	GUATEMALA
	32	SANTA CRUZ	EL SALVADOR
	33	EEEJN, CANAS	COSTA RICA
	34	SAN JAVIER	VENEZUELA
	35	LA ESTANZUELA	URUGUAY
	36	PICHILINGUE	ECUADOR
	37	PORTO VIEJO	ECUADOR
	38	PALMIRA	COLOMBIA
	39	SETE LAGOAS	BRAZIL

Objectives of the International Maize Testing Program

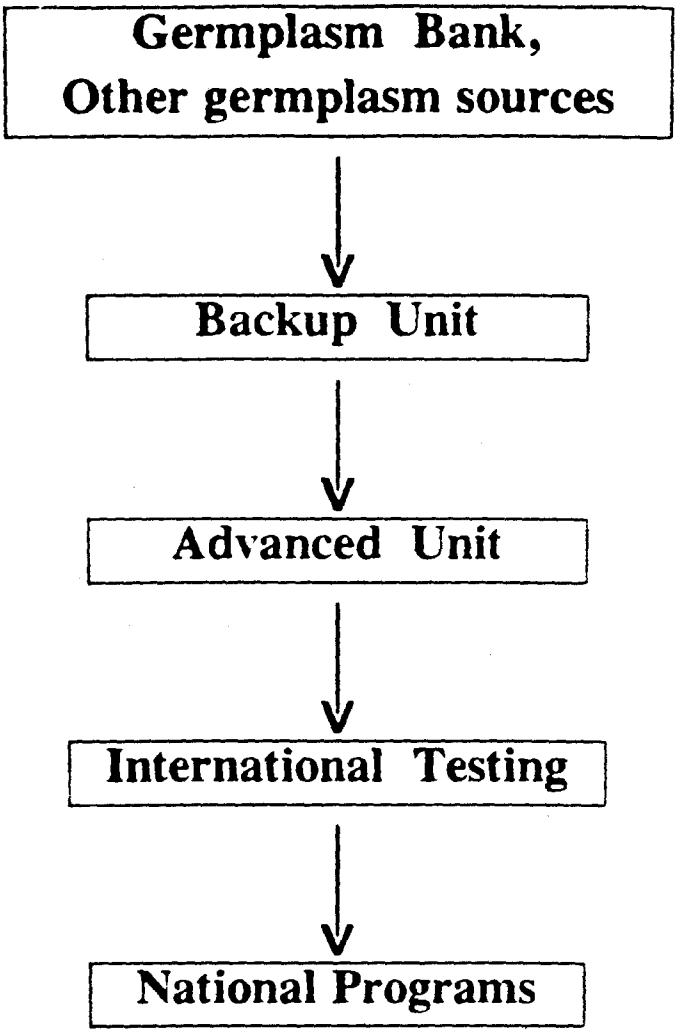
1. Germplasm distribution
2. Population improvement
3. Obtain trial data over a wide range of environments, useful to CIMMYT and to other cooperators

ENTRY	ENTRY NAME	LOC.21	LOC.22	LOC.23	LOC.24	LOC.25	LOC.26	LOC.27	LOC.28	LOC.29	LOC.30
5	CMS 933080	2.26	7.32	6.43	5.98	7.16	8.67	7.69	7.55	8.72	9.92
6	CMS 933084	1.90	7.50	5.90	6.54	7.45	8.82	6.51	8.76	7.19	9.28
15	CMT 933156	1.98	7.24	6.38	5.98	7.62	9.54	7.19	8.26	7.66	9.76
3	CMS 933054	2.25	7.84	6.28	5.55	7.36	8.21	6.84	9.29	8.04	9.74
2	CMS 933044	3.71	6.74	6.19	5.98	6.96	8.64	7.06	7.17	7.74	8.34
14	CMT 933152	3.38	6.89	5.94	6.02	7.06	8.46	7.58	8.67	7.40	9.87
17	CMT 933188	2.98	6.29	5.91	5.67	6.88	8.93	6.30	9.76	7.42	9.74
8	CMS 933094	3.31	5.37	6.20	6.01	6.99	8.63	7.08	6.52	7.36	8.17
7	CMS 933092	3.62	5.95	6.04	6.04	7.39	8.98	6.84	6.79	7.38	8.71
16	CMT 933176	3.54	6.40	6.05	6.29	6.99	8.20	6.67	9.05	7.28	10.24
4	CMS 933074	3.21	5.98	5.43	5.13	6.27	8.02	6.18	7.93	6.90	9.53
11	CMT 933018	1.93	6.96	5.24	4.93	7.18	8.65	7.18	8.02	7.79	8.51
1	CMS 933010	1.42	6.49	5.14	5.46	7.39	8.19	6.46	8.36	7.53	10.02
10	CMS 933116	3.47	6.01	5.44	5.39	6.29	8.53	6.87	3.95	7.31	8.47
13	CMT 933150	2.73	5.99	4.66	4.35	6.56	8.22	6.36	6.95	7.36	9.41
12	CMT 933068	2.36	5.91	5.49	5.39	7.00	8.42	6.84	7.50	7.18	8.49
9	CMS 933104	2.72	5.66	5.78	5.32	6.27	8.00	6.30	7.10	6.65	8.10
18	ACROSS 8627 RE	2.33	6.01	4.47	4.71	5.48	7.10	5.57	5.45	5.44	7.71
19	LOCAL CHECK#1	1.83	8.45	5.03	4.87	5.81	6.55	4.95	8.90	7.68	7.79
20	LOCAL CHECK#2	2.74	6.85	5.68	5.78	7.12	6.06	4.99	6.60	6.60	8.72
	MEANS	2.73	6.48	5.72	5.60	6.90	8.46	6.75	7.62	7.35	9.11
	CV(%)	27.10	12.60	12.30	8.20	7.80	8.00	6.50	13.00	7.20	7.80

ENTRY	ENTRY NAME	LOC.31	LOC.32	LOC.33	LOC.34	LOC.35	SOUTH AMERICA LOC.36	LOC.37
5	CMS 933080	6.81	6.31	5.96	3.70	5.13	4.91	6.04
6	CMS 933084	6.69	7.10	5.66	3.90	5.87	5.18	6.35
15	CMT 933156	5.65	5.58	5.70	3.48	5.51	4.00	5.66
3	CMS 933054	6.12	7.25	5.56	3.25	4.90	4.07	4.48
2	CMS 933044	6.30	5.68	5.78	3.80	5.37	4.32	5.04
14	CMT 933152	6.09	5.42	5.87	3.60	5.50	3.75	4.97
17	CMT 933188	6.06	5.16	5.59	2.96	4.03	4.03	4.58
8	CMS 933094	5.74	5.24	5.60	3.02	4.69	4.23	5.98
7	CMS 933092	5.61	4.60	5.82	3.42	4.98	4.30	4.83
16	CMT 933176	6.00	5.37	5.57	3.20	5.47	3.96	5.22
4	CMS 933074	5.49	4.64	6.65	3.71	4.41	3.66	5.75
11	CMT 933018	5.35	5.02	5.64	2.85	4.41	4.22	5.97
1	CMS 933010	5.70	5.58	5.82	3.24	4.40	4.40	5.72
10	CMS 933116	5.87	5.25	5.63	3.20	4.86	4.16	5.49
13	CMT 933150	5.31	5.26	6.07	3.33	3.96	3.25	5.85
12	CMT 933068	5.10	4.56	5.48	3.40	4.34	3.67	5.37
9	CMS 933104	5.22	4.79	5.25	3.11	5.07	3.53	6.28
18	ACROSS 8627 RE	4.52	4.70	4.43	2.78	4.30	3.19	5.20
19	LOCAL CHECK#1	5.71	6.21	5.62	2.74	4.45	4.12	5.99
20	LOCAL CHECK#2	6.57	5.59	5.94	2.82	5.60	4.01	5.22
	MEANS	5.76	5.42	5.67	3.33	4.84	4.05	5.49
	CV(%)	13.30	9.50	17.10	13.40	9.90	12.30	21.00

ENTRY	ENTRY NAME	LOC.38	LOC.39	OVERALL MEANS GRAIN YIELD	DAYS SILK	PLANT HT(CM)
5	CMS 933080	5.73	7.38	5.68	66.35	215.28
6	CMS 933084	5.26	6.42	5.49	64.61	201.11
15	CMT 933156	5.74	5.80	5.41	66.49	210.67
3	CMS 933054	5.70	4.40	5.40	65.95	218.77

Traditional Germplasm Flow in Maize Program



Support provided by Entomology, Pathology, and Physiology Units.

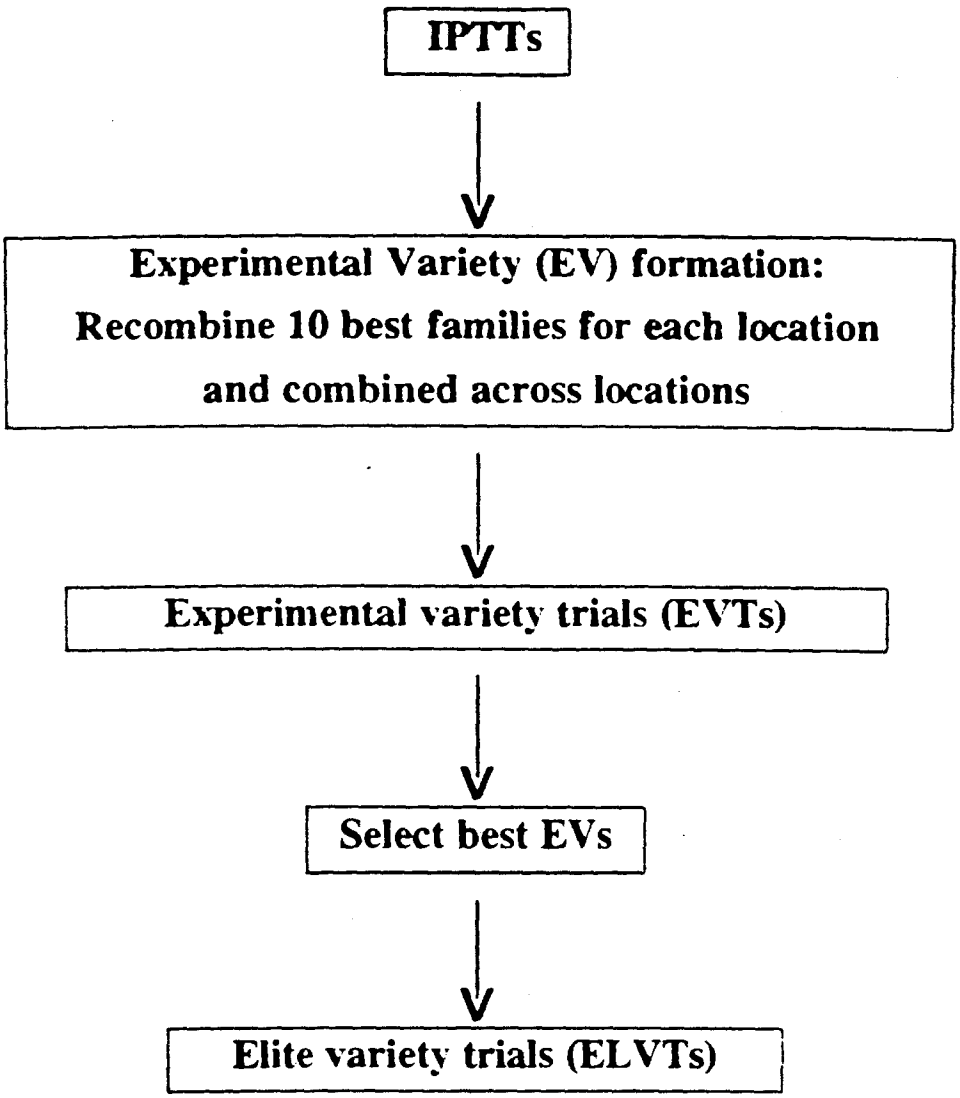
MEAN GRAIN YIELD (T/HA) BY LOCATIONS AND OVERALL MEANS
YEAR: 1994 No. LOCATIONS: 39

ENTRY	ENTRY NAME	ASIA39 LOC. 1	37 LOC. 2	38 LOC. 3	36 LOC. 4	32 LOC. 5	31 LOC. 6	33 LOC. 7	34 LOC. 8	35 LOC. 9	30 LOC.10
5	CMS 933080	8.23	5.94	4.75	3.50	1.89	1.31	4.20	2.91	3.68	7.53
6	CMS 933084	5.21	5.85	4.71	4.32	2.05	1.04	3.12	2.39	2.87	7.10
15	CMT 933156	2.39	5.21	3.46	3.35	2.08	0.87	4.27	2.78	4.93	7.41
3	CMS 933054	6.67	5.59	4.36	3.07	1.80	1.13	3.26	1.38	3.26	7.15
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	CMS 933094	4.15	5.49	3.42	3.04	1.44	1.21	3.68	2.40	3.41	7.56
7	CMS 933092	3.40	5.20	3.64	3.62	1.75	1.15	4.02	2.05	3.73	6.84
16	CMT 933176	5.39	4.76	3.57	2.96	1.67	0.52	2.62	2.03	3.58	7.18
4	CMS 933074	2.80	4.79	3.27	2.98	2.08	0.88	3.81	3.21	3.67	7.10
11	CMT 933018	4.68	5.25	3.42	2.52	1.93	0.45	2.98	1.77	3.13	7.56
1	CMS 933010	3.57	5.18	2.50	2.17	1.89	1.14	2.64	2.71	3.31	6.68
10	CMS 933116	3.77	3.84	2.28	2.80	1.74	1.14	3.73	2.58	2.71	7.38
13	CMT 933150	4.34	5.59	3.58	2.63	1.66	0.53	2.05	1.43	1.50	7.47
12	CMT 933068	4.69	4.88	3.06	2.84	1.87	0.72	2.43	2.61	2.62	6.54
9	CMS 933104	3.59	5.09	3.92	2.58	1.74	0.33	2.74	1.40	1.74	6.75
18	ACROSS 8627 RE	3.54	4.55	2.78	2.47	1.93	1.04	2.88	2.01	1.24	6.70
19	LOCAL CHECK#1	3.39	4.98	3.44	3.69	2.88	2.62	5.96	4.02	4.97	7.50
20	LOCAL CHECK#2	3.58	5.02	3.46	2.43	2.34	5.44	5.20	3.59	6.23	5.42
	MEANS	4.45	5.17	3.60	3.02	1.85	0.90	3.23	2.25	3.10	7.21
	CV(%)	29.90	8.30	24.20	19.30	14.00	34.10	16.40	29.50	21.10	8.60

ENTRY	ENTRY NAME	29 LOC.11	28 LOC.12	25 LOC.13	26 LOC.14	27 LOC.15	1 LOC.16	23 WESTERN AFRICA LOC.17	24 LOC.18	22 CENTRAL AMERICA LOC.19	21 LOC.20
5	CMS 933080	1.09	4.30	7.51	5.63	5.91	4.29	9.47	6.53	5.14	3.90
6	CMS 933084	0.50	6.90	7.69	6.49	6.62	4.17	7.09	5.62	4.33	3.60
15	CMT 933156	0.68	4.47	7.46	6.33	6.65	4.94	9.39	6.67	5.49	3.50
3	CMS 933054	0.84	8.75	5.98	5.79	6.63	4.64	9.11	6.51	4.35	3.21
2	CMS 933044	0.51	4.07	6.28	6.17	5.87	3.09	8.20	6.13	5.15	4.31
14	CMT 933152	0.80	6.06	6.67	5.39	5.79	4.87	9.16	6.32	5.26	3.24
17	CMT 933188	1.18	7.41	6.89	6.14	4.54	3.54	8.25	5.97	4.85	3.86
8	CMS 933094	0.84	5.88	7.13	6.52	6.53	4.26	9.11	6.29	5.62	4.43
7	CMS 933092	0.88	5.91	6.35	5.97	6.09	3.68	8.88	5.99	4.45	3.97
16	CMT 933176	1.56	2.62	5.91	5.42	3.06	4.18	9.32	6.19	3.58	4.94
4	CMS 933074	1.45	2.80	6.97	5.25	5.42	4.48	8.25	5.99	3.22	3.71
11	CMT 933018	1.33	5.48	6.68	5.06	4.03	4.41	7.97	6.19	4.33	3.73
1	CMS 933010	0.57	3.64	5.88	5.77	5.47	3.67	8.40	6.35	3.81	2.83
10	CMS 933116	0.28	5.25	6.29	5.85	4.99	3.44	8.59	6.04	5.30	4.08
13	CMT 933150	0.92	6.54	6.18	5.28	6.13	3.04	8.89	5.90	6.58	3.28
12	CMT 933068	0.59	6.52	5.63	6.22	5.43	3.00	8.06	5.34	4.50	3.64
9	CMS 933104	1.55	4.08	5.64	4.58	4.85	3.90	8.73	5.45	5.80	4.32
18	ACROSS 8627 RE	0.50	6.28	5.49	4.54	3.54	2.98	7.63	4.28	3.32	3.40
19	LOCAL CHECK#1	0.64	11.82	4.06	5.44	3.35	1.55	7.81	4.86	4.86	3.10
20	LOCAL CHECK#2	0.74	2.67	5.09	6.48	2.74	0.05	8.36	4.90	4.29	2.67
	MEANS	0.89	5.39	6.48	5.69	5.42	3.92	8.58	5.99	4.73	3.77
	CV(%)	33.30	20.00	12.10	16.60	13.00	19.40	8.60	9.90	23.80	21.70

AL
CA

Relationship of IPTTs, EVTs, and ELVTs



Based on trial results, national programs request seed samples for further evaluation.

YIELD PERFORMANCE OF CIMMYT HYBRIDS IN 1994 INTERNATIONAL TRIALS (PRELIMINARY RESULTS)

CIMMYT HYBRID TRIAL (CHT) #	PER-CENT SUPERIORITY OVER BEST LOCAL CHECK HYBRID BASED ON -		SUPERIORITY OF BEST CIMMYT HYBRID OVER EV CHECK %	PER CENT OF COMMON HYBRID CHECK	NO. OF LOCA-TIONS	NO OF LOCATIONS WHERE CIMMYT HYBRID OUTYIELDED LOCAL CHECK
	BEST ENTRY ACROSS LOC.(STABILITY)	BEST ENTRY FOR EACH LOC.				
CHTTW	~~115~~ 118	~~124~~ 128	120	-	~~33~~ ~~25~~	32 ~~24~~
CHTTY	114	125	~~137~~ 134	-	~~39~~ ~~29~~	33 ~~26~~
CHTSW	102	116 ~~116~~	~~119~~ 117	-	~~26~~ ~~20~~	22 ~~17~~
CHTSY	~~82~~ 86	97 ~~95~~	~~123~~ 123	-	~~128~~	4 ~~3~~
CHTH	~~96~~ 85	105 ~~105~~	153	~~110*~~ 114	~~7~~ 12	7 ~~5~~

\# CHTTW - CIMMYT HYBRID TRIAL - TROPICAL WHITE
CHTTY - CIMMYT HYBRID TRIAL - TROPICAL YELLOW
CHTSW - CIMMYT HYBRID TRIAL - SUBTROPICAL WHITE
CHTSY - CIMMYT HYBRID TRIAL - SUBTROPICAL YELLOW
CHTH - CIMMYT HYBRID TRIAL - HIGHLANDS (WHITE)

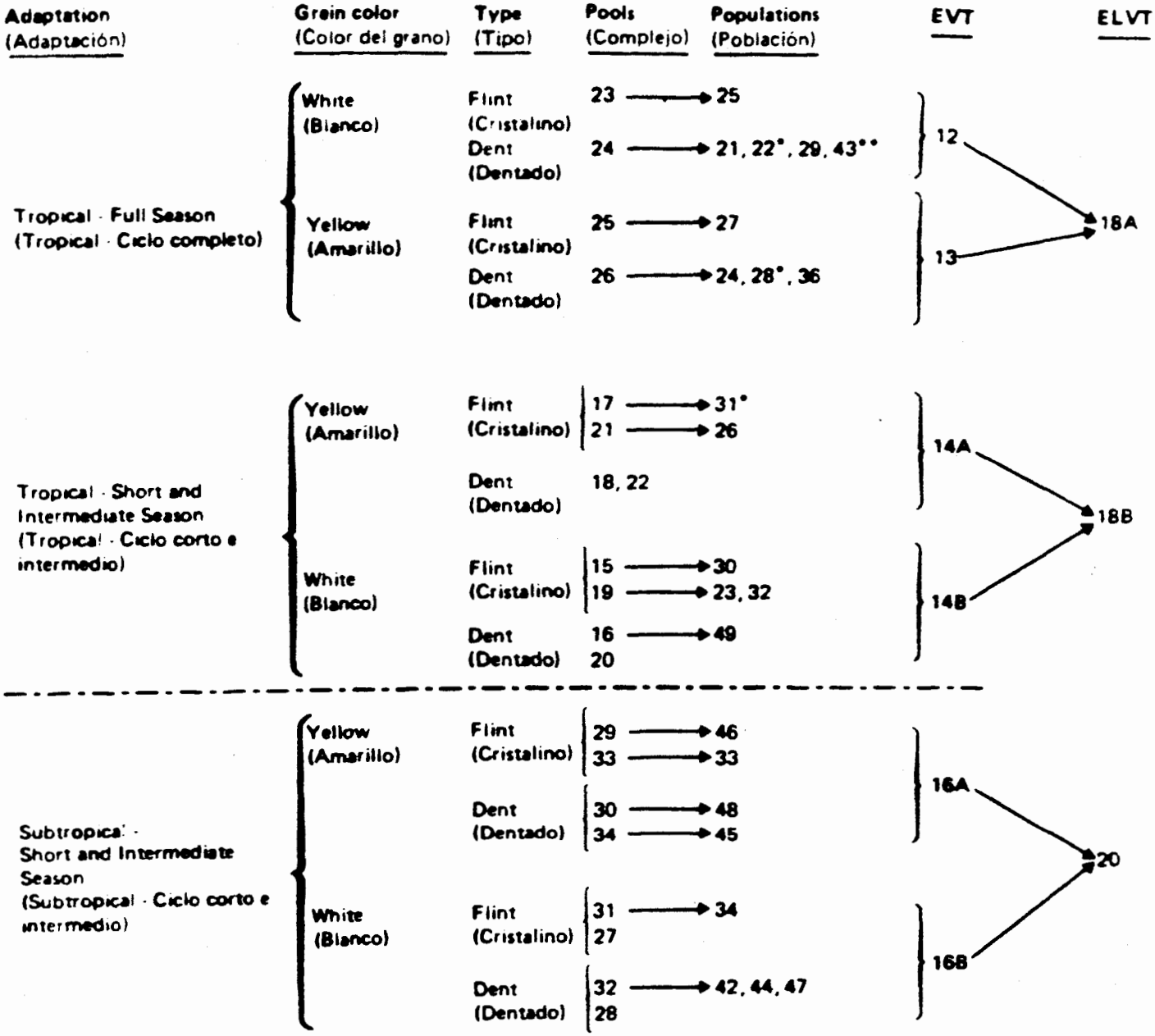
* H-34 (INIFAP HYBRID) USED AS COMMON CHECK HYBRID IN HIGHLAND TRIAL

Relationship of EVT's and ELVT's

Germplasm class	EVT	ELVT
Tropical late white	12	
		18A
Tropical late yellow	13	
Tropical early/intermediate yellow	14A	
		18B
Tropical early/intermediate white	14B	
Subtropical early/intermediate yellow	16A	
		20
Subtropical intermediate/late white	16B	

9	5	THESSALONIKI	GREECE
7	6	IRAPUATO, GTO.	MEXICO
6	7	QUERETARO QTO.	MEXICO
3	8	TLALTIZAPAN	MEXICO
4	9	TLALTIZAPAN (2)	MEXICO
2	10	NEXTIPAC (JAL)	MEXICO
5	11	TLAJOMULCO	MEXICO
1	12	LA ESTANZUELA	URUGUAY

Table A. Relationship between gene pools, populations, and variety trials in CIMMYT's normal maize improvement program
Cuadro A Relación entre complejos germoplásmicos, poblaciones y ensayos de variedad en el programa de mejoramiento de maíz normal del CIMMYT

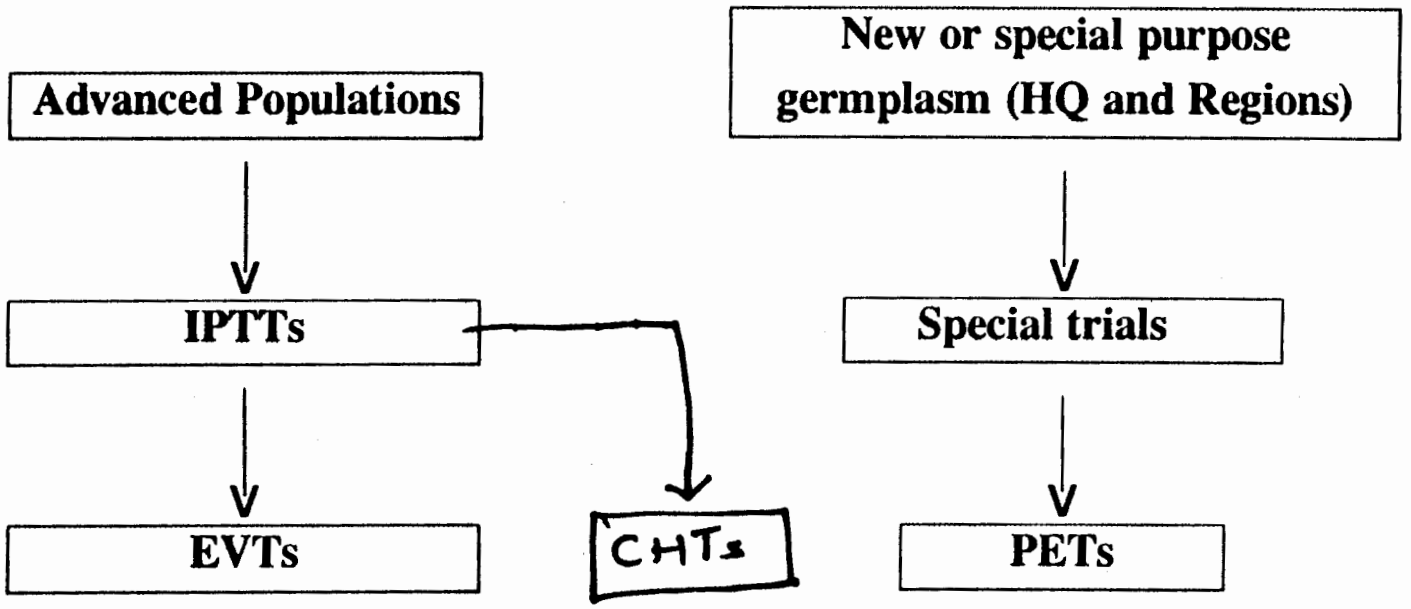


* At Farm Suwan (Thailand) for improvement of downy mildew resistance.
** At IITA for improvement of streak resistance.

* En Farm Suwan (Tailandia) para mejorar la resistencia al mildiú velloso.
** En IITA para mejorar la resistencia al rayado.

22	7	BARRA/ABRAO MEX	COTE D'IVOIRE
23	8	AMECA JAL.	MEXICO
24	9	ZAPOTILTIC JAL.	MEXICO
21	10	S.MARCOS AMATEP	MEXICO
22	11	SAN JOSE DEL VA	MEXICO
26	12	SANTIAGO IXC NA	MEXICO
20	13	PABELLON AGS.	MEXICO
19	14	LOS MOCHIS SIN.	MEXICO
18	15	EST.EXP. H. TAP	NICARAGUA
17	16	TLAJOMULCO	MEXICO
16	17	VILLA FLORES	MEXICO
14	18	VERACRUZ	MEXICO
13	19	TLALTIZAPAN	MEXICO
15	20	LOS MOCHIS	MEXICO
12	21	NEXTIPAC (JAL)	MEXICO
11	22	POZA RICA	MEXICO
10	23	OMONITA	HONDURAS
9	24	LAS VEGAS	GUATEMALA
8	25	TEQUINZATE	GUATEMALA
7	26	SAN JERONIMO	GUATEMALA
6	27	CUYUTA	GUATEMALA
5	28	SAN ANDRES	EL SALVADOR
4	29	EEEJN, CANAS	COSTA RICA
3	30	LOC 15	VENEZUELA
2	31	LA ESTANZUELA	URUGUAY
1	32	TARAPOTO	PERU
	33	PALMIRA	COLOMBIA

Current Testing System



2. Population improvement.

41 populations have participated in the IPTT system for up to 9 cycles of selection.

Trait	No. of populations	Percent gain per cycle		Source
		Mean	Range	
Yield	8	1.31	-0.04 to 1.90	Pandey et al., 1986
Yield	4	2.11	0.48 to 3.16	Pandey et al., 1987
Yield	4	3.94	3.30 to 4.31	Eaton et al., 1990
E.turcicum rating	4	-3.18	-1.91 to -3.97	Eaton et al., 1990
Ear ht.	8	-1.77	-3.38 to 0.36	Pandey et al., 1986
Days to silk	4	-0.31	-0.98 to 0.12	Pandey et al., 1987

7	CHAPINGO MEX.	MEXICO
8	CHERAN MICH.	MEXICO
9	EL BATAN	MEXICO
10	TLAJOMULCO	MEXICO
11	LA ESTANZUELA	URUGUAY
12	STA.CATALINA	ECUADOR

Results of 19 Years of CIMMYT International Maize Testing, 1974 - 1992

1. Germplasm distribution.

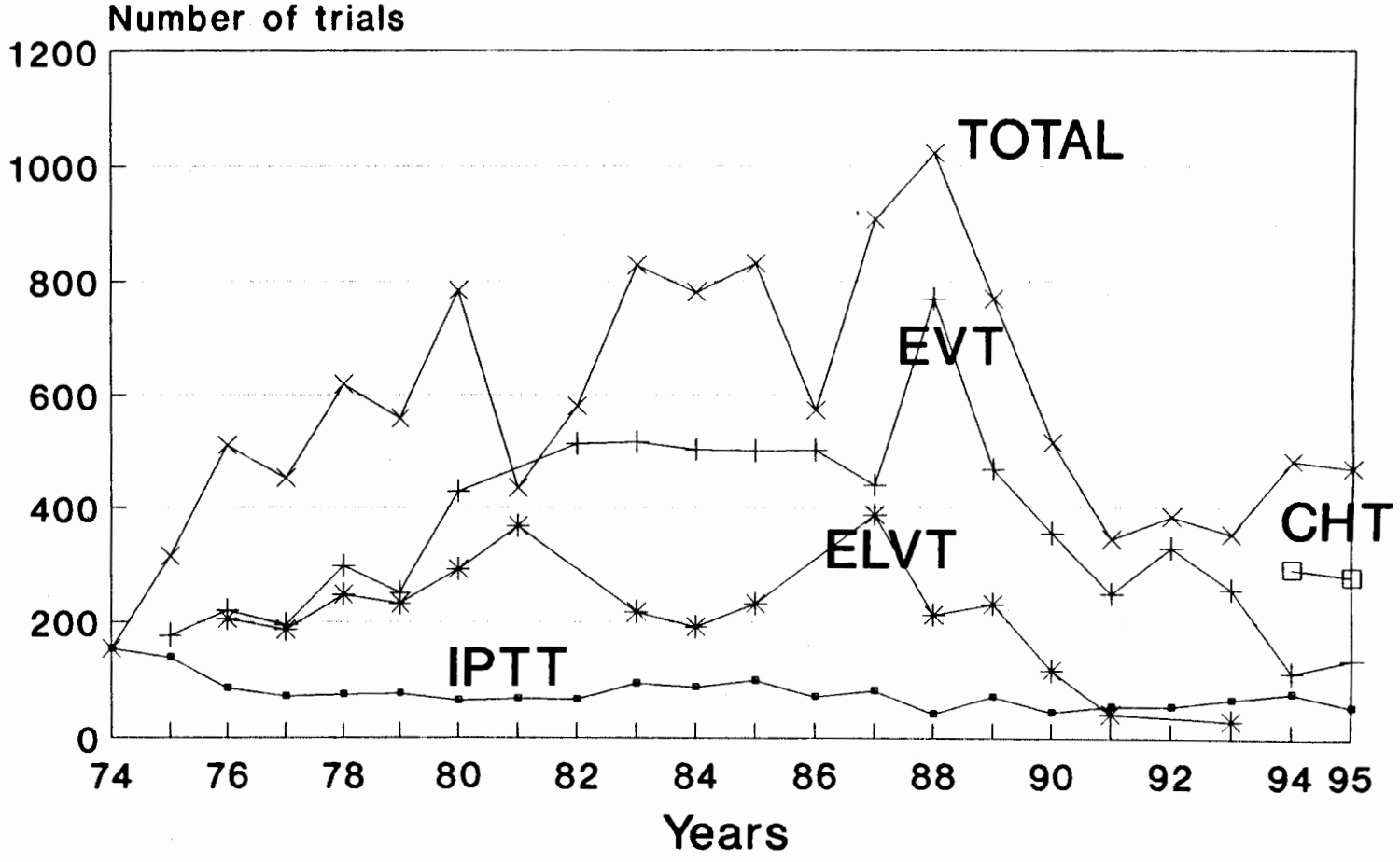
About 11,000 sets of trials shipped to 90-100 countries.

1200 - 1500 EV's formed and evaluated. In 60 - 70% of trials CIMMYT EV's outyield best local check.

260
~~222~~ varieties directly related to CIMMYT trials have been released by NARS. In addition, many more varieties contain some germplasm derived from CIMMYT trials.

13.2 m. ha. grown under CIMMYT Germplasm

Distribution of CIMMYT maize trials 1974-95



International Maize and Wheat Improvement Center (CIMMYT)

Material Transfer Agreement (MTA)

The material contained herein is being furnished by CIMMYT under the following conditions:

1. CIMMYT is making the material described in the attached list available as part of its policy of maximizing the utilization of genetic material for research. The material was either developed by CIMMYT; or it was acquired prior to the entry into force of the United Nations Convention on Biological Diversity; or if it was acquired after the entering into force of the Biodiversity Convention, it was obtained with the understanding that it could be made freely available for any agricultural research or breeding purposes.

2. The recipient may reproduce the seed and use the material for agricultural research and breeding purposes and may distribute it to other parties provided that any recipient is willing to accept the conditions of this agreement.

3. If the seed packet is labeled "FAO Designated Germplasm", the material is held in trust under the terms of an agreement between CIMMYT and FAO, and the recipient has no rights to obtain Intellectual Property Rights (IPR).

4. Recipients are free to release for commercialization CIMMYT research products in the form they are provided. If released without obtaining IPR, CIMMYT requests notification and acknowledgment. Recipients are not to apply for any form of IPR of CIMMYT research products without the written permission of CIMMYT. Moreover, while CIMMYT recognizes the validity of IPR, it reserves the right to distribute all material in accordance with paragraph 1, above.

5. CIMMYT makes no warranties as to the safety or title of the material, nor as to the accuracy or correctness of any passport or other data provided with the material. Neither does it make any warranties as to the quality, viability, or purity (genetic or mechanical) of the material being furnished. The phytosanitary condition of the material is warranted only as described in the attached phytosanitary certificate. The recipient assumes full responsibility for complying with the recipient nation's biosafety regulations and rules as to import or release of genetic material.

6. Upon request CIMMYT will furnish information that may be available in addition to whatever is furnished with the seed. Recipients are requested to furnish CIMMYT performance data collected during evaluations.

7. The material is supplied expressly conditional on acceptance of the term of this agreement. The recipient's retention of the material constitutes such acceptance.

This document was approved by the CIMMYT Board of Trustees at its June 1995 meeting.

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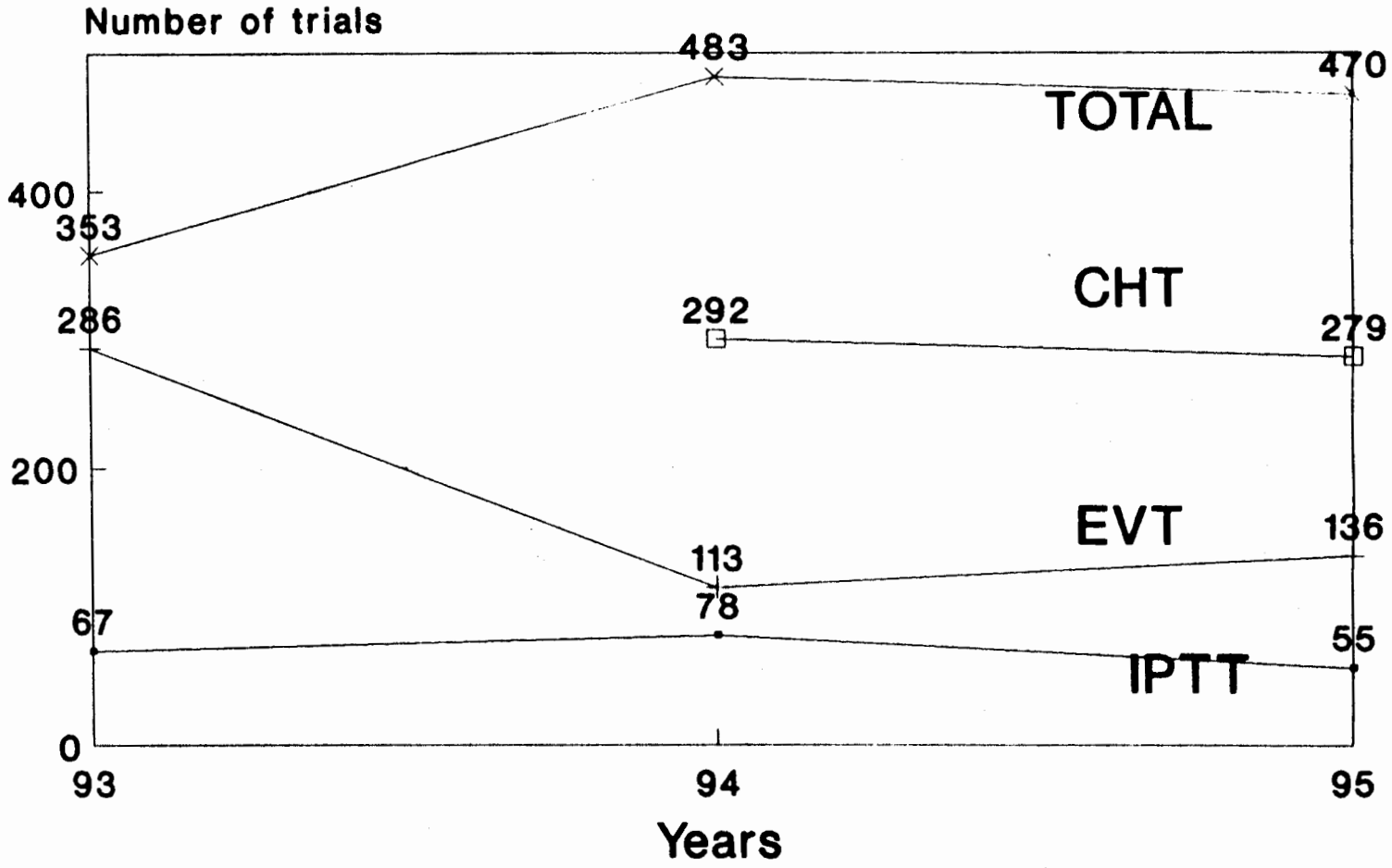
Distribution of CIMMYT maize trials 1993-95



CMTSY YEAR 1994

MEAN GRAIN YIELD (T/HA) BY LOCATIONS AND OVERALL MEANS

YEAR: 1994 No. LOCATIONS: 12

ENTRY	ENTRY NAME	LOC. 1	LOC. 2	LOC. 3	LOC. 4	LOC. 5	LOC. 6	LOC. 7	LOC. 8	LOC. 9	LOC.10
		ASIA			EASTERN & S. AFRI	NORTH AFRICA	CENTRAL AMERICA				
10	CMT935030	2.50	6.41	3.25	2.34	5.39	6.47	7.62	11.64	8.64	5.19
2	CMS935004	1.71	9.03	3.83	2.97	3.58	4.81	7.22	10.93	9.06	5.29
12	CMT935034	1.85	7.10	4.04	2.60	4.75	5.77	7.50	10.67	7.97	4.94
6	CMT935022	2.20	6.61	4.06	1.58	5.03	6.71	7.03	10.11	8.28	4.83
14	CMS935038	1.25	7.72	3.83	2.91	4.79	5.18	5.24	9.29	8.42	5.37
3	CMS935006	1.68	6.34	3.96	2.08	4.79	5.29	6.84	9.64	7.83	4.44
4	CMS935008	0.92	5.09	2.89	1.30	3.56	8.58	6.73	11.07	9.29	5.79
1	CMS935002	2.16	7.27	2.90	2.59	5.51	4.68	3.10	11.35	9.84	4.27
7	CMT935024	2.09	6.11	3.75	2.29	4.29	6.92	5.39	8.81	9.31	4.90
5	CMT935010	1.85	5.26	3.20	2.93	5.99	5.02	5.87	9.64	6.87	4.58
9	CMT935028	2.23	6.04	4.18	3.04	4.01	5.54	6.38	8.31	6.60	4.29
8	CMT935026	1.92	5.92	4.12	2.92	4.46	4.57	7.07	8.28	5.85	4.57
13	CMT935036	2.18	7.56	4.22	2.46	3.66	6.83	4.03	8.10	6.76	3.72
15	ACROSS 8845	0.97	4.73	2.74	2.47	3.94	5.37	6.74	9.16	6.35	4.59
11	CMT935032	2.72	6.64	3.31	2.25	3.13	4.94	4.32	8.56	6.65	5.63
16	LOCAL CHECK	6.18	5.15	1.66	3.30	5.75	10.68	8.69	8.22	8.05	5.33
17	LOCAL CHECK	6.08	8.12	1.64	4.00	8.05	11.16	10.70	8.09	9.83	6.34
	MEANS	1.88	6.52	3.62	2.45	4.52	5.78	6.07	9.70	7.85	4.83
	CV(%)	16.30	32.30	21.20	22.50	29.20	13.30	19.60	7.60	8.00	15.50

ENTRY	ENTRY NAME	SOUTH AMERICA LOC.11	SOUTH AMERICA LOC.12	OVERALL MEANS GRAIN YIELD	DAYS SILK	PLANT HT(CM)
10	CMT935030	7.76	4.82	6.00	71.72	166.68
2	CMS935004	8.14	4.81	5.95	72.38	168.14
12	CMT935034	7.98	4.78	5.83	69.77	158.50
6	CMT935022	7.76	4.34	5.71	68.54	164.03
14	CMS935038	8.73	4.74	5.62	72.30	175.63
3	CMS935006	7.09	4.89	5.57	71.21	161.21
4	CMS935008	6.65	5.11	5.50	70.52	161.82
1	CMS935002	7.09	4.99	5.48	71.71	171.48
7	CMT935024	7.31	4.15	5.45	71.79	172.37
5	CMT935010	7.27	4.20	5.22	68.83	154.83
9	CMT935028	7.46	3.89	5.16	69.92	163.43
8	CMT935026	7.90	4.09	5.14	69.65	161.56
13	CMT935036	6.05	4.46	5.00	69.82	158.77
15	ACROSS 8845	7.22	4.28	4.88	71.78	164.40
11	CMT935032	7.02	3.19	4.86	67.98	157.88
16	LOCAL CHECK	11.01	4.92	6.58	78.57	182.41
17	LOCAL CHECK	10.55	5.78	7.53	76.73	182.83
	MEANS	7.43	4.45	5.43		
	CV(%)	6.00	9.20			

No	LOC.	COUNTRY
1	R&D STATION BAN	THAILAND
2	ADONI MANDAL	INDIA
3	ARABHAVI	INDIA
4	GREYTOWN	REP. S.AFRICA

C. Evaluation and distribution of germplasm

EVALUATION AND DISTRIBUTION OF GERMPLASM PRODUCTS - MAIZE PROGRAM

* CIMMYT PROVIDES FREE ACCESS TO IMPROVED GERMPLASM. REQUESTS FOR FEEDBACK ON HOW THE GERMPLASM IS USED.

* MAIN CHANNEL OF DISTRIBUTION IS THROUGH AND BASED ON PERFORMANCE IN INTERNATIONAL TRIALS DISTRIBUTED FROM HEADQUARTERS AND REGIONAL TRIALS CONDUCTED BY OUTREACH.

* MISCELLANEOUS SEED REQUESTS BASED ON PERFORMANCE DATA IN "IT REPORTS" AS WELL AS GENERAL REQUESTS FROM COLLABORATORS WORLDWIDE - DEVELOPING AND DEVELOPED.

* REQUESTS FROM VISITORS, TRAINEES, ETC. TO CIMMYT

Distribution of CIMMYT maize trials 1974-95

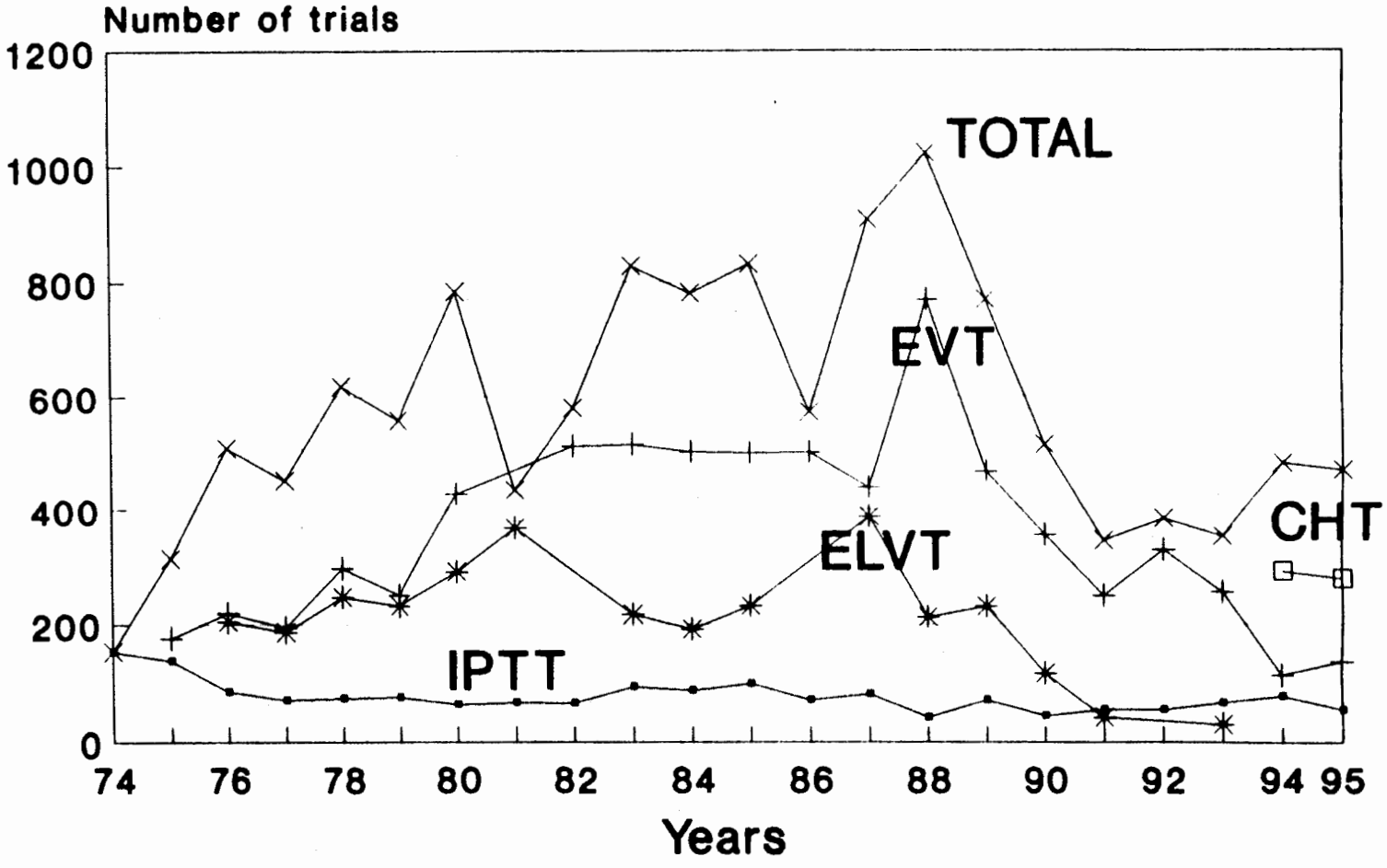


Fig.1. International Maize Testing Unit
1994 Trial Distribution - By Region

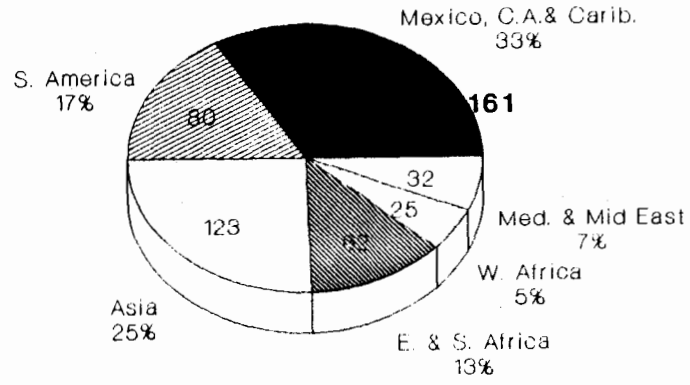


Fig.2. International Trial Distribution
Public vs. Private Sector - By Regions

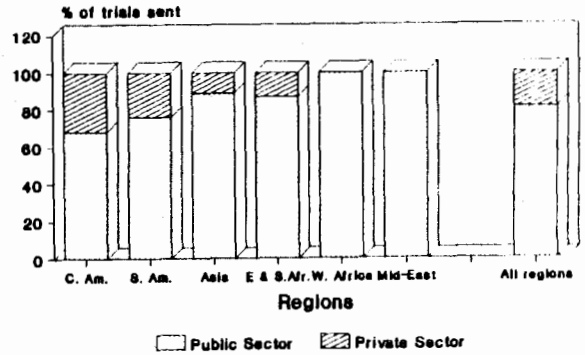
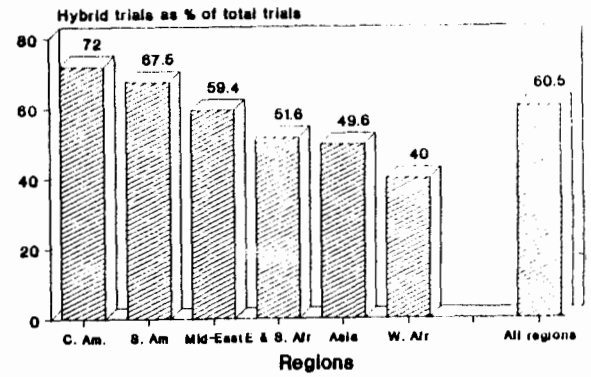
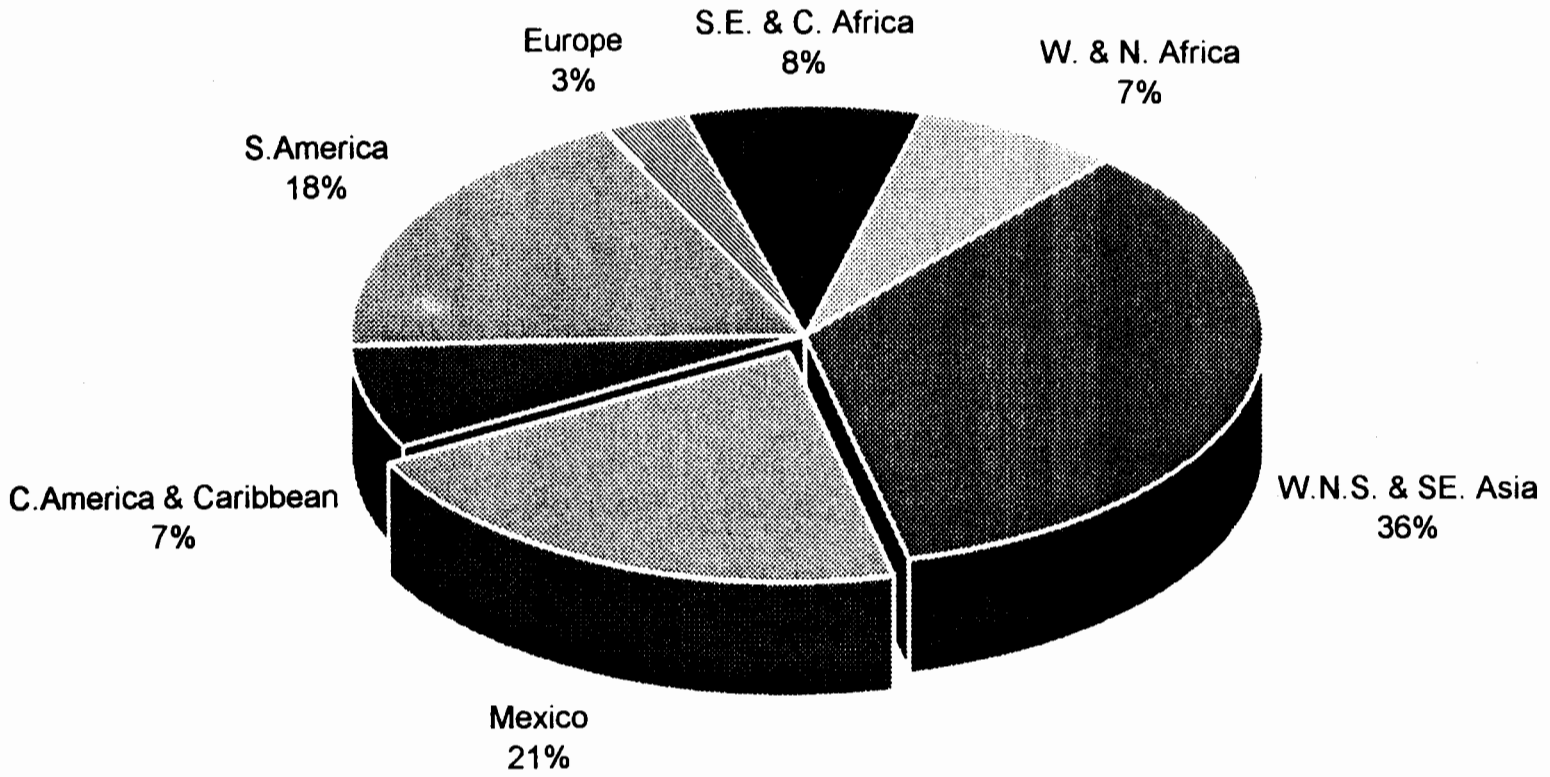


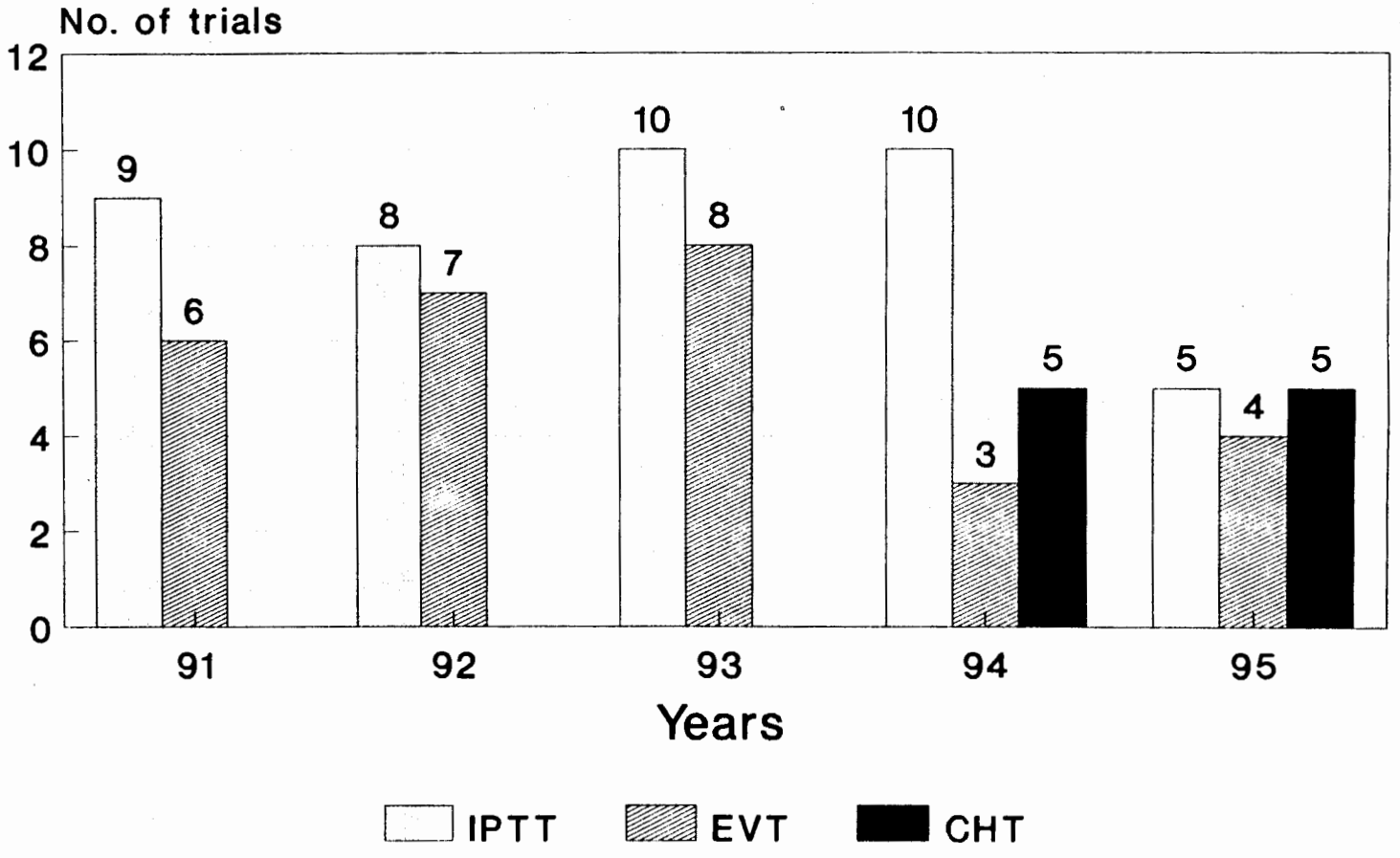
Fig.3. International Trial Distribution
Hybrid Trials (CHTs) as % of all trials



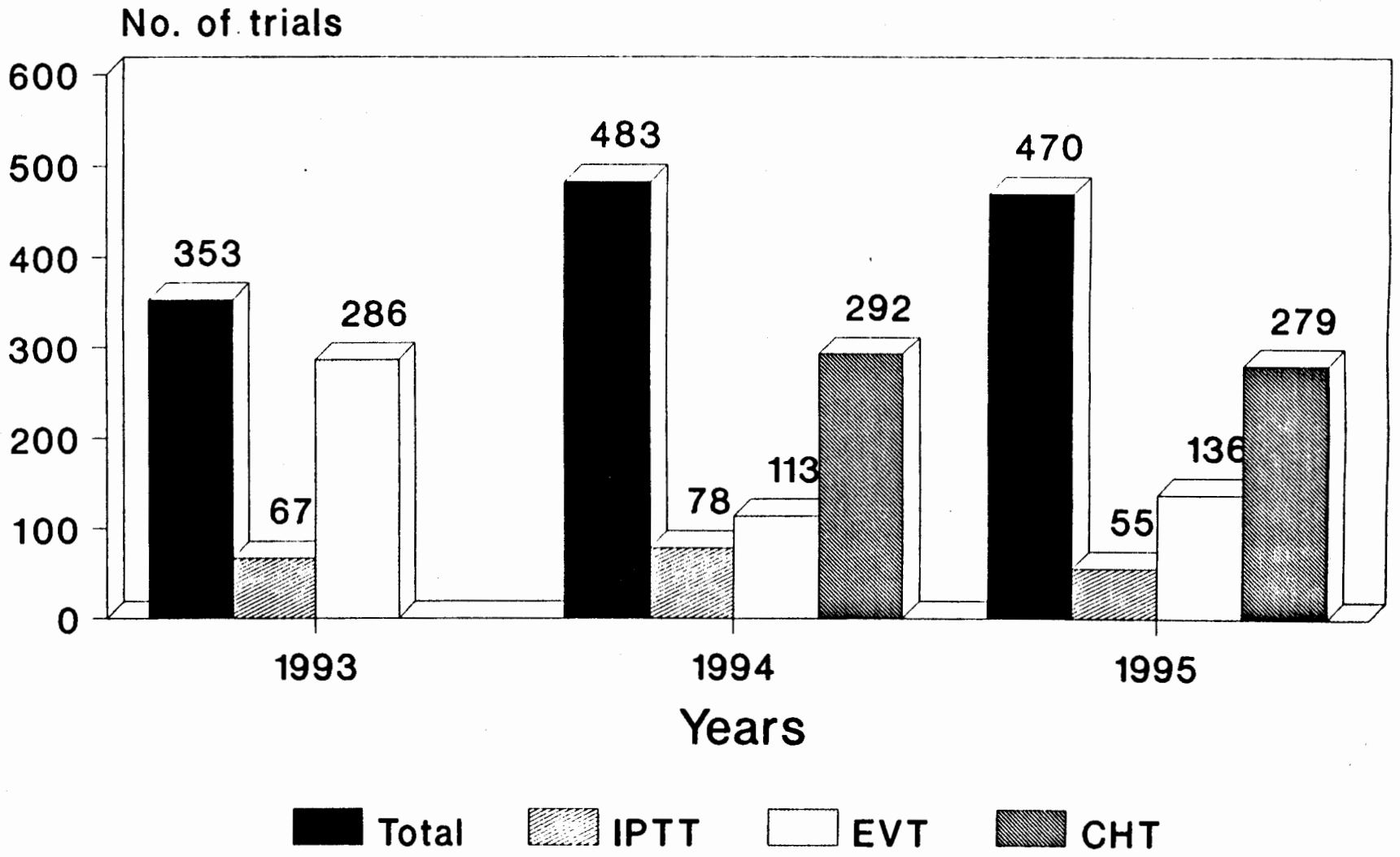
International Maize Testing Unit
1995 Trial Distribution - By Region



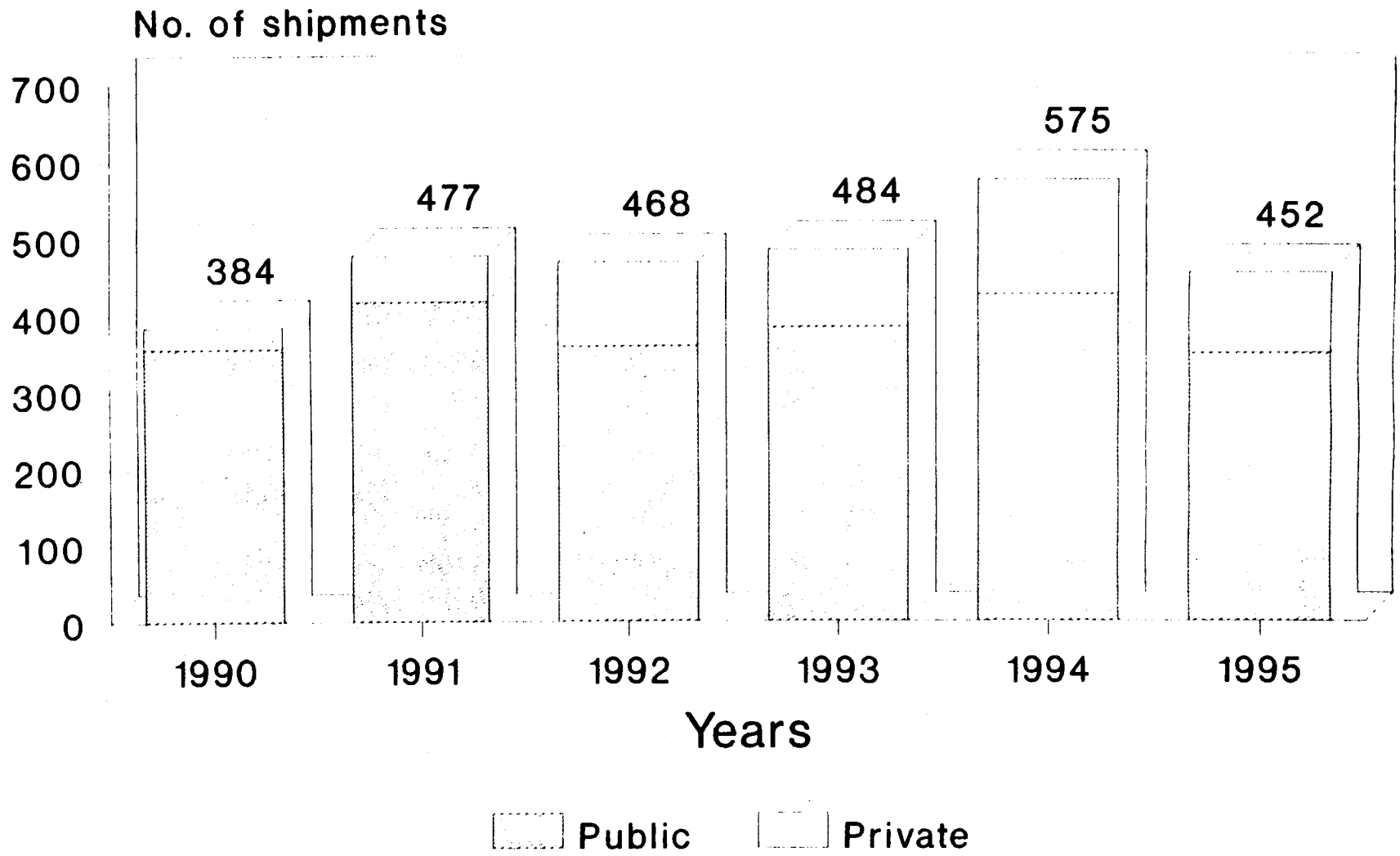
Number of International Trials offered 1991-1995



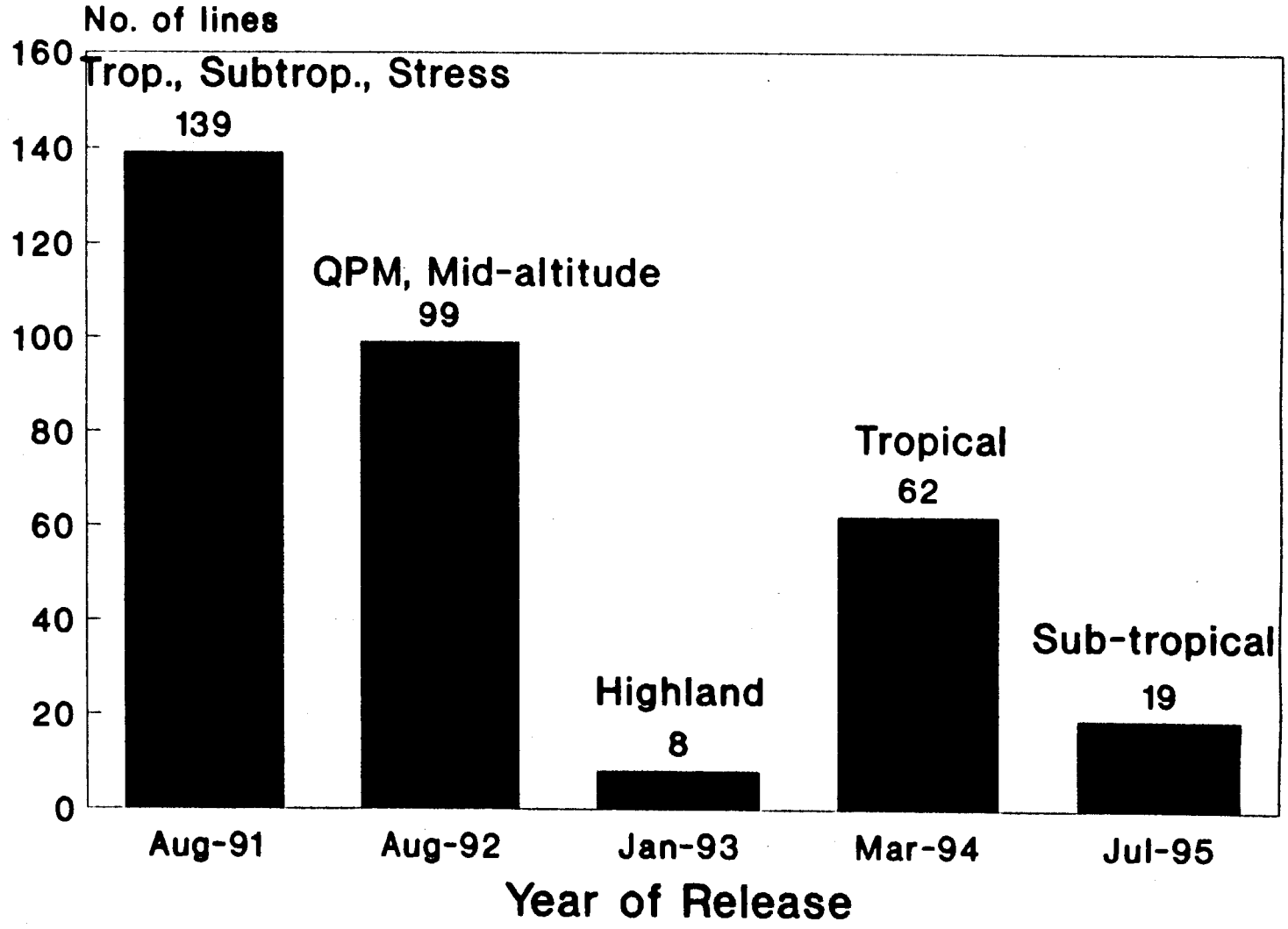
Distribution of CIMMYT Maize Trials 1993-1995



Global Maize seed shipments by CIMMYT
Public vs. Private sector (1990-1995)



INBRED LINE ANNOUNCEMENTS BY CIMMYT



ENTRY	ENTRY NAME	LOC.21	LOC.22	LOC.23	LOC.24	LOC.25	LOC.26	LOC.27	LOC.28	LOC.29	LOC.30
8	CMS 933137	10.05	7.29	5.38	7.93	3.67	9.75	6.58	6.86	6.76	5.44
7	CMS 933133	8.96	7.99	6.26	8.38	3.45	9.68	7.31	6.69	7.44	5.62
3	CMS 933015	10.11	7.10	5.97	7.98	4.57	9.72	6.83	6.96	6.07	6.14
2	CMS 933011	9.21	7.34	5.77	7.69	3.54	8.99	6.44	6.81	6.39	5.81
4	CMS 933063	9.16	7.31	5.97	6.88	3.74	8.96	6.60	6.05	5.13	6.61
9	CMS 933165	8.41	5.88	4.70	7.19	3.35	10.47	5.78	6.47	4.99	5.61
10	CMS 933167	9.73	6.25	4.97	7.34	3.30	9.85	5.49	6.74	4.97	5.20
13	CMT 933081	7.80	8.09	6.22	7.20	3.33	9.16	6.41	7.10	5.93	5.48
14	CMT 933121	8.01	6.35	5.97	7.08	3.60	9.33	6.20	6.74	6.41	5.83
1	CMS 933005	2.19	6.75	4.83	7.42	3.56	9.50	6.82	6.46	5.27	5.68
11	CMT 933003	8.15	7.29	5.54	7.44	3.16	9.06	6.58	6.12	6.16	5.12
15	CMT 933153	8.04	6.86	4.89	7.07	3.11	8.73	5.84	6.96	5.36	5.43
5	CMS 933079	9.27	7.37	5.60	7.75	3.16	8.88	6.60	6.19	6.23	5.26
12	CMT 933033	9.33	6.44	5.34	7.71	3.09	8.75	5.15	6.03	6.09	5.33
16	CMT 933157	8.34	7.07	5.97	8.00	3.71	8.51	6.78	6.56	5.61	4.30
17	CMT 933211	9.05	7.05	5.57	6.70	3.75	7.58	6.05	6.34	4.05	5.25
6	CMS 933099	7.19	6.71	4.93	6.02	4.13	9.15	5.76	5.90	4.56	5.91
18	LA POSTA SEQ. C3-F2	7.23	6.46	4.73	5.60	3.28	7.68	5.68	5.96	4.31	5.07
19	LOCAL CHECK#1	8.64	8.01	4.69	7.18	2.75	8.99	6.34	6.07	4.12	5.51
20	LOCAL CHECK#2	8.10	3.17	3.62	6.93	2.89	8.77	6.89	5.27	3.39	5.91
	MEANS	8.35	6.98	5.48	7.30	3.53	9.09	6.27	6.50	5.65	5.50
	CV(%)	9.60	6.60	12.00	9.10	21.30	7.20	8.80	10.50	14.00	12.70

SOUTH AMERICA

ENTRY	ENTRY NAME	LOC.31	LOC.32	LOC.33	OVERALL MEANS GRAIN YIELD	DAYS SILK	PLANT HT(CM)
8	CMS 933137	5.79	3.73	5.09	6.61	80.14	202.67
7	CMS 933133	3.14	4.61	5.48	6.57	76.69	189.89
3	CMS 933015	3.85	4.09	6.24	6.53	77.50	200.52
2	CMS 933011	2.43	3.40	4.74	6.33	76.88	198.92
4	CMS 933063	4.03	3.64	5.50	6.22	77.35	200.66
9	CMS 933165	2.29	4.41	4.41	6.18	79.66	203.49
10	CMS 933167	4.81	4.06	5.80	6.18	78.82	202.00
13	CMT 933081	0.98	3.96	5.56	6.15	78.54	212.83
14	CMT 933121	4.69	3.83	4.67	6.09	77.43	194.47
1	CMS 933005	3.35	3.61	3.50	6.06	79.37	201.34
11	CMT 933003	3.50	3.60	5.25	6.00	78.61	203.13
15	CMT 933153	3.07	3.97	4.89	5.98	79.50	210.78
5	CMS 933079	4.26	2.68	4.34	5.95	80.44	214.85
12	CMT 933033	3.93	2.79	4.21	5.91	75.43	196.72
16	CMT 933157	1.56	3.95	4.93	5.79	78.11	209.99
17	CMT 933211	4.21	3.55	5.42	5.66	76.27	199.97
6	CMS 933099	1.37	3.95	2.90	5.64	81.05	203.64
18	LA POSTA SEQ. C3-F2	4.41	3.57	4.13	5.49	78.13	202.90
19	LOCAL CHECK#1	3.97	2.88	4.34	5.82	77.32	199.72
20	LOCAL CHECK#2	4.81	2.81	5.25	5.37	76.32	199.16
	MEANS	3.43	3.75	4.84	6.08		
	CV(%)	14.10	19.90	12.70			

No	LOC.	COUNTRY
1	DAN PHUONG	VIETNAM
2	JALNA	INDIA
3	U.P. LOS BANOS	PHILIPPINES
4	NAMULONGE	UGANDA
5	GREYTOWN	REP. S.AFRICA
6	SINEMATIALI	COTE D'IVOIRE

CIMMYT MAIZE LINES (CML) ANNOUNCED AS OF AUGUST 1995

CML #	ADAPTATION	SUBPROGRAM	DATE ANNOUNCED	CONTACT BREEDER
1-58	TROPICAL	HYBRID PROGRAM	Aug-91	SVASAL
59-74	TROPICAL	STRESS	Aug-91	DBECK
75-116	SUBTROPICAL	HYBRID PROGRAM	Aug-91	SVASAL
117-139	SUBTROPICAL	STRESS	Aug-91	DBECK
140-160	TROPICAL WHITE QPM	QPM	Aug-92	HCORDOVA
161-172	TROPICAL YELLOW QPM	QPM	Aug-92	HCORDOVA
173-194	SUBTROPICAL QPM	QPM	Aug-92	HCORDOVA
195-216	MID-ALTITUDE (MSVR)	MID-ALTITUDE, HARARE	Aug-92	DJEWELL/KPIXLEY
217-238	TROPICAL (MSVR)	TROPICAL, HARARE	Aug-92	DJEWELL/KPIXLEY
239-246	HIGHLAND	HIGHLAND	Jan-93	GSRINIVASAN
247-281	TROPICAL WHITE	LOWLAND TROPICAL, HQ	Mar-94	SVASAL
282-308	TROPICAL YELLOW	LOWLAND TROPICAL, HQ	Mar-94	SVASAL
309-310	TROPICAL WHITE	LOWLAND TROPICAL, CALI	Mar-94	SPANDEY
311-322	SUBTROPICAL WHITE	SUBTROPICAL, HQ	Jul-95	HCORDOVA
323-329	SUBTROPICAL YELLOW	SUBTROPICAL, HQ	Jul-95	HCORDOVA

TABLE 1. DESCRIPTIVE DATA FOR 12 WHITE SUBTROPICAL LINES AVAILABLE FROM CIMMYT MAIZE PROGRAM, MEXICO, 1996

Sl. No	CML No.	CIMMYT Line Code	Source Germplasm	Pedigree	Yield (1-5)	Days to Flowering Mal	Days to Flowering Fem	GDD Mal.	GDD Fem.	Tassel size (1-5)	Height Plant (cm)	Height Ear (cm)	Plant vigor (1-5)	Stand ability (1-5)	Ear asp. (1-5)	Ear rot (1-5)	Grain text.	Rust (1-5)	E.t. (1-5)	GCA	Hete-rotic Pattern	Specific heterotic partners
1	311	CL-50001	P500	S89500 F2-2-2-2-2-B*5	2.0	63	64	1012	1027	2.5	201	96	2.0	2.0	2.1	2.1	SF	1.5	2.0	Exc.	A	CML78, CML321, CML314
2	312	CL-50002	P500	S89500 F2-2-2-1-1-B*5	1.5	61	62	981	995	2.5	183	82	1.5	2.0	3.7	3.0	SF	2.0	1.8	Good	A	CML's 313, 314, 315, and 321
3	315	CL-50003	P500	P500c0F246-4-1-2-2-B*3	3.0	61	62	981	995	2.0	148	67	2.5	2.5	3.0	2.5	D	2.0	2.5	Aver.	A	CML312, CML321, (CML264xCML279)
4	316	CL-50004	P500	P500c0F114-1-1-B*3	3.0	66	68	1058	1087	3.0	185	80	2.5	3.0	3.5	3.0	SD	2.5	2.5	Good	B	CML78, CML311, CML312
5	313	CL-50101	P501	P501c0F6-3-3-2-1-B-B	2.0	70	70	1117	1117	3.0	206	101	3.0	3.0	2.5	2.0	SD	3.5	2.0	Good	B	CML97, CML312
6	320	CL-50102	P501	P501c0F112-2-5-1-1-B*4	2.5	68	69	1087	1102	3.0	176	90	1.0	2.0	1.0	1.6	SD	3.5	2.1	Good	A	CML321, CML322, CML312
7	321	CL-50201	P502	P502c0F1-1-3-1-B*4	2.0	64	66	1027	1058	3.5	200	109	1.0	1.5	1.7	1.2	SF	2.0	2.4	Good	B	CML320, CML78, CML312
8	314	CL-60001	P600	P600c0F14-2-1-2-B*4	1.0	60	61	964	981	2.0	183	112	1.5	1.5	1.7	1.7	D	4.5	2.0	Good	B	CML78, CML311, CML312
9	317	CL-04703	P47	P47c4F80-1-2-B*4	3.0	59	61	949	981	2.5	203	93	2.5	3.0	3.0	2.5	SF	3.0	1.5	Good	A	(CML321xCML322), CML321
10	318	CL-00502	Recy W	87[8810(66)S3/G24S2]-B-8-1-1-3-B*4	3.0	60	62	964	995	3.0	205	88	2.0	3.5	3.0	2.5	SD	3.5	2.0	Good	B	CML78, CML311
11	319	CL-00503	Recy W	89[Cr.Arg/CIM.Sh Pl NPH]6-3-2-4-B-B	2.5	60	61	964	981	3.0	186	101	2.0	2.5	3.0	2.5	SD	4.0	2.0	Aver.	B	Pop.501c1
12	322	CL-00504	Recy W	89[ULMBR]17-B-5-3-1-4-B*4	3.0	60	62	964	995	2.0	138	75	2.0	2.0	2.5	2.0	F	3.0	3.0	Good	B	CML78

Abreviations:

CML No. - CIMMYT Maize Line Number
Recy W. - Recycling of White Lines
-B*(number), - for example, -B*4 is the same as -B-B-B-B
Yield - Per se performance
GDD - Growing Degree Days
Ear Asp. - Ear Aspect
Grain text. - Grain texture (D = dent, SD = semident, SC = semiflint, F = flint)
Rust - *Puccinia sorghi*
E.t. - *Exserohilum turcicum*
GCA - General combining ability (Aver. = average, Exc. = excellent)

Scales for scores:

Yield, Vigor, Ear Asp. and Standability - 1 = good, 5 = poor
Tassel size - 1 = large, 5 = small
Disease (Ear Rot, Rust, and E.t.) - 1 = resistant, 5 = susceptible

MEAN GRAIN YIELD (T/HA) BY LOCATIONS AND OVERALL MEANS
YEAR: 1994 No. LOCATIONS: 33

ENTRY	ENTRY NAME	ASIA LOC. 1	LOC. 2	LOC. 3	EASTERN & S. AFRICA LOC. 4	LOC. 5	WESTERN AFRICA LOC. 6	LOC. 7	CENTRAL AMERICA LOC. 8	LOC. 9	LOC.10
8	CMS 933137	5.89	6.24	4.12	4.14	2.99	7.95	5.42	7.54	6.54	8.66
7	CMS 933133	7.18	5.15	4.43	4.41	1.51	9.06	7.01	8.16	4.62	7.99
3	CMS 933015	6.39	5.46	4.90	4.74	1.04	8.37	6.27	7.51	4.86	7.24
2	CMS 933011	6.44	6.59	4.34	4.17	1.20	9.28	7.29	8.83	4.72	5.19
4	CMS 933063	6.31	6.36	5.04	4.80	1.20	9.70	5.18	8.44	4.80	6.65
9	CMS 933165	5.67	5.47	5.03	3.44	1.06	7.19	5.05	7.79	6.46	7.52
10	CMS 933167	7.28	5.19	4.41	4.11	1.37	7.24	5.40	7.95	5.78	7.20
13	CMT 933081	6.58	5.22	4.50	4.59	1.19	8.98	7.51	7.40	3.52	6.33
14	CMT 933121	6.10	5.01	4.22	4.94	0.97	7.54	5.85	7.82	4.00	5.88
1	CMS 933005	5.84	6.36	4.91	3.42	1.17	7.86	6.78	8.44	5.11	6.07
11	CMT 933003	5.90	5.54	4.08	3.23	1.07	7.94	6.67	7.20	3.87	6.59
15	CMT 933153	5.03	5.78	4.34	3.26	0.74	7.46	6.32	5.89	5.83	6.05
5	CMS 933079	5.04	5.43	4.40	3.11	2.19	8.12	5.78	7.80	4.83	6.83
12	CMT 933033	6.03	5.54	3.12	4.36	0.73	8.46	5.63	7.27	4.35	4.84
16	CMT 933157	4.94	6.34	4.17	4.79	0.55	7.94	5.93	6.79	3.84	7.39
17	CMT 933211	5.25	5.56	3.89	4.03	1.28	7.42	4.94	7.05	5.32	6.09
6	CMS 933099	7.00	5.09	3.86	3.71	0.27	7.97	6.25	7.72	5.07	6.82
18	LA POSTA SEQ. C3-F2	5.68	5.49	3.48	4.62	1.17	7.67	5.56	6.77	4.08	6.16
19	LOCAL CHECK#1	5.13	5.54	0.93	2.65	2.79	7.16	5.89	8.00	3.09	5.40
20	LOCAL CHECK#2	3.39	5.37	0.68	4.80	3.02	7.06	5.16	8.41	3.71	4.37
	MEANS	6.03	5.66	4.29	4.10	1.20	8.12	6.05	7.58	4.87	6.64
	CV(%)	11.40	15.00	21.30	20.30	57.70	9.60	11.90	14.20	32.20	16.80

ENTRY	ENTRY NAME	LOC.11	LOC.12	LOC.13	LOC.14	LOC.15	LOC.16	LOC.17	LOC.18	LOC.19	LOC.20
8	CMS 933137	7.74	7.16	9.16	8.05	6.81	8.47	1.80	6.70	9.47	8.81
7	CMS 933133	7.22	7.46	8.53	7.98	6.00	8.01	2.47	6.15	10.19	8.26
3	CMS 933015	7.69	6.55	9.15	8.19	6.21	7.72	2.76	6.18	9.89	8.62
2	CMS 933011	7.31	6.00	9.29	8.34	4.91	8.02	3.00	6.05	10.08	9.36
4	CMS 933063	6.92	5.95	6.89	8.39	5.09	8.17	2.50	6.20	8.25	8.95
9	CMS 933165	8.17	6.19	10.36	7.94	5.42	9.52	2.10	6.14	9.19	10.33
10	CMS 933167	6.98	5.83	8.68	8.11	6.66	8.34	2.48	6.86	6.60	8.98
13	CMT 933081	6.61	6.02	7.08	7.40	5.99	8.47	2.56	6.62	10.56	8.64
14	CMT 933121	7.26	6.10	8.92	7.64	5.17	7.53	3.10	5.68	8.93	9.69
1	CMS 933005	7.45	7.29	9.42	8.21	5.89	8.90	3.01	6.32	8.83	9.83
11	CMT 933003	6.64	5.98	8.82	7.39	4.66	8.43	3.33	6.46	9.59	7.60
15	CMT 933153	7.31	6.08	9.29	8.00	5.62	8.49	2.76	6.53	8.86	9.60
5	CMS 933079	6.64	6.34	8.94	7.63	4.37	7.28	3.10	5.74	7.44	7.76
12	CMT 933033	7.36	6.41	8.89	8.17	5.08	7.92	2.74	6.32	10.15	7.45
16	CMT 933157	6.11	5.97	8.59	7.68	4.79	6.33	2.07	6.23	9.16	6.45
17	CMT 933211	6.32	5.76	7.36	7.28	5.49	8.11	2.13	5.74	7.42	5.88
6	CMS 933099	6.71	5.13	8.91	7.69	5.35	8.07	2.26	5.27	7.87	6.74
18	LA POSTA SEQ. C3-F2	6.29	5.17	7.36	7.90	4.51	7.46	1.58	5.98	8.80	7.40
19	LOCAL CHECK#1	7.08	5.31	8.48	8.81	4.66	10.47	2.50	5.47	9.98	9.14
20	LOCAL CHECK#2	7.17	5.33	7.27	7.66	5.50	9.52	3.17	6.24	3.92	7.55
	MEANS	7.04	6.19	8.65	7.89	5.45	8.07	2.54	6.18	8.96	8.35
	CV(%)	5.10	11.80	9.20	8.00	13.70	13.40	22.30	5.20	7.10	11.80

SOUTH AMERICA

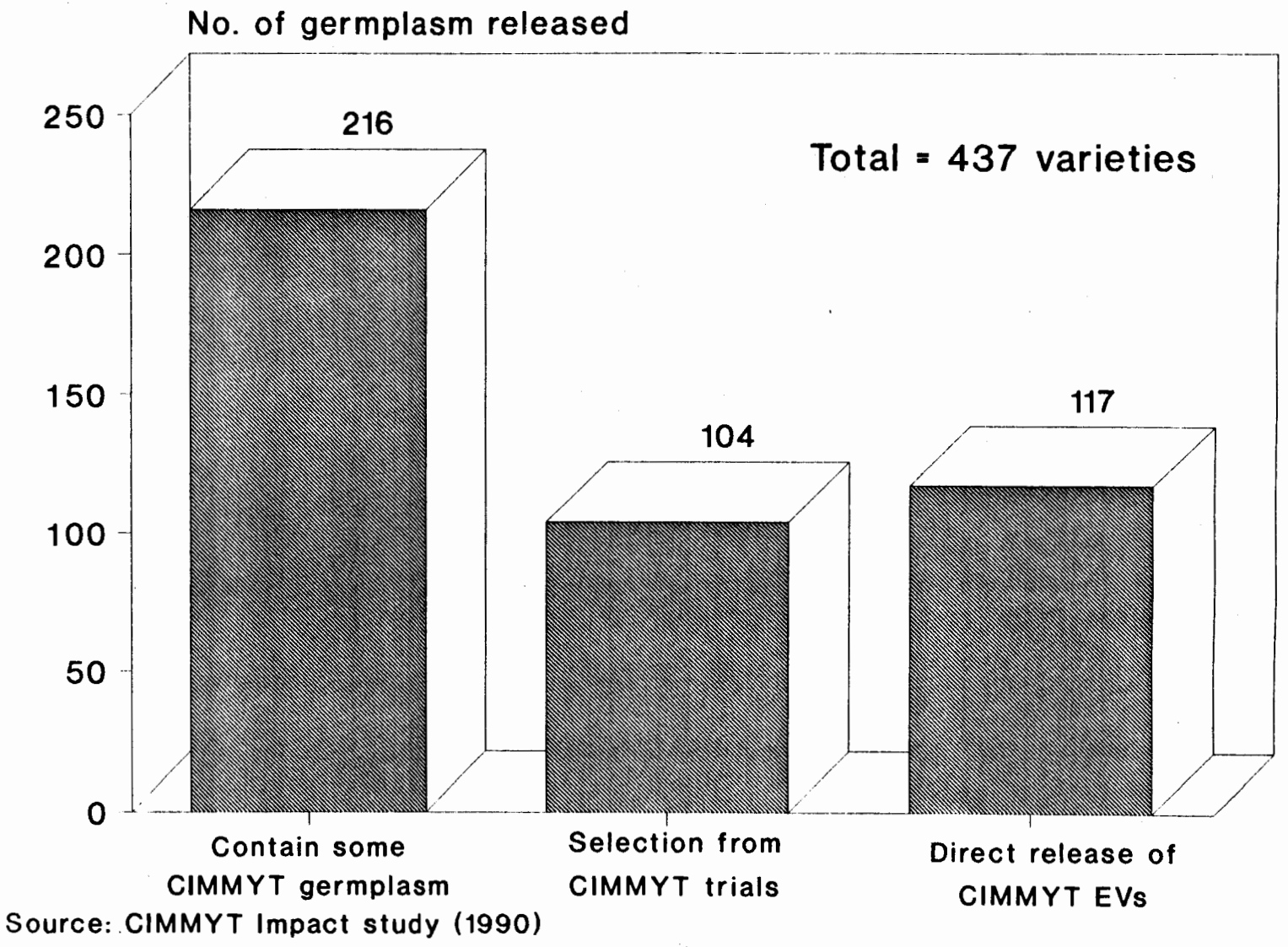
Global Maize seed shipments by CIMMYT
Total vs. Inbred lines shipment (92-95)

D. Impact of CIMMYT's maize research

NON-TEMPERATE MAIZE AREA UNDER MODERN VARIETES (MVs) IN DEVELOPING COUNTRIES , AND AREA UNDER MATERIALS WITH CIMMYT GERMPLASM, 1990

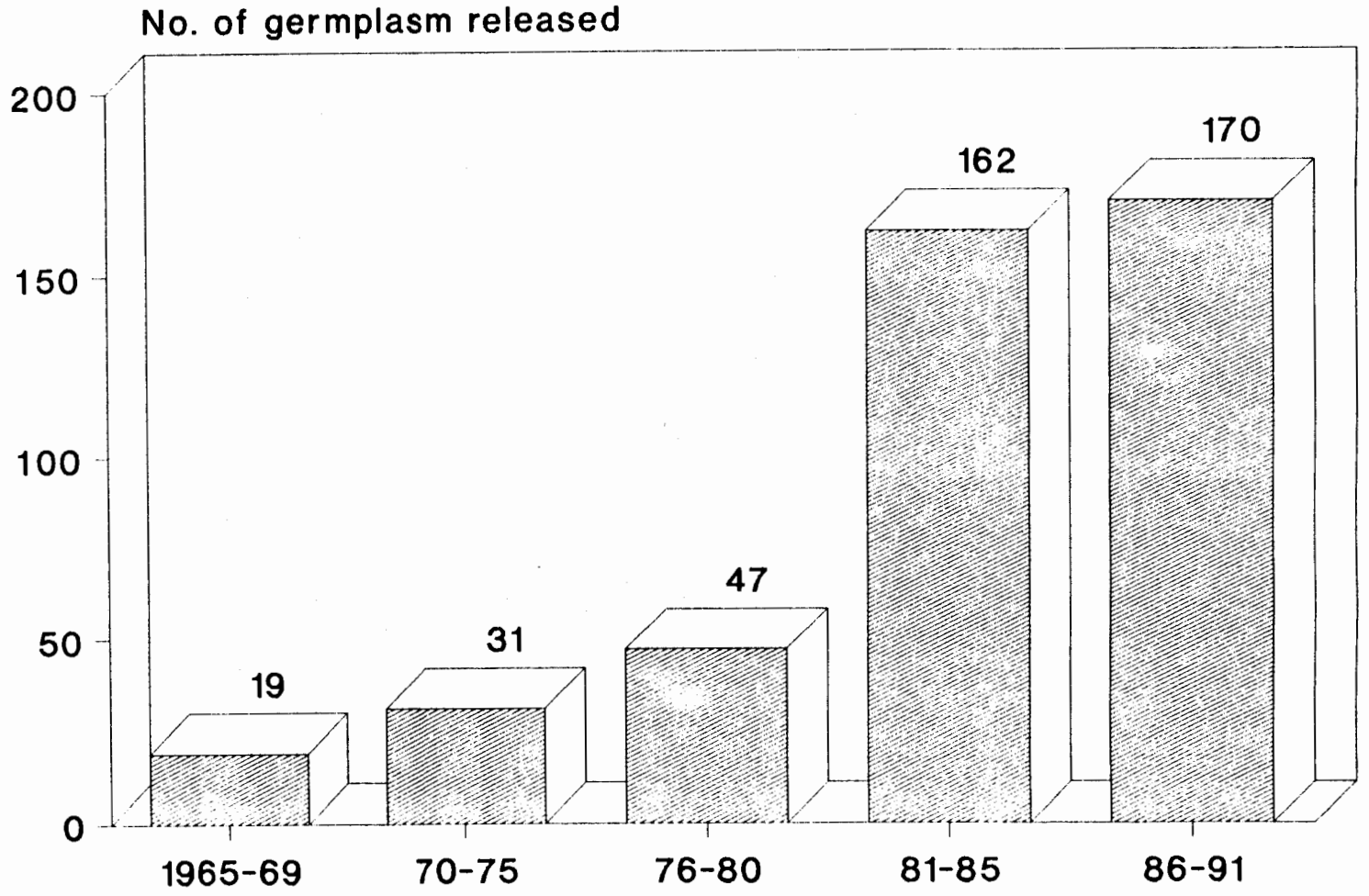
REGION	TOTAL NON-TEMPERATE MV AREA (M. HA.)	AREA UNDER MATERIALS WITH CIMMYT GERMPLASM	
		MILLION HA.	% OF MV AREA
SUB-SAHARRAN AFRICA	6.2	2	32
WEST ASIA AND NORTH AFRICA	0.6	0.5	96
ASIA	8.2	5.1	62
LATIN AMERICA	9.6	5.6	59
ALL DEVELOPING COUNTRIES	24.6	13.2	54

Release of CIMMYT-based Maize Germplasm



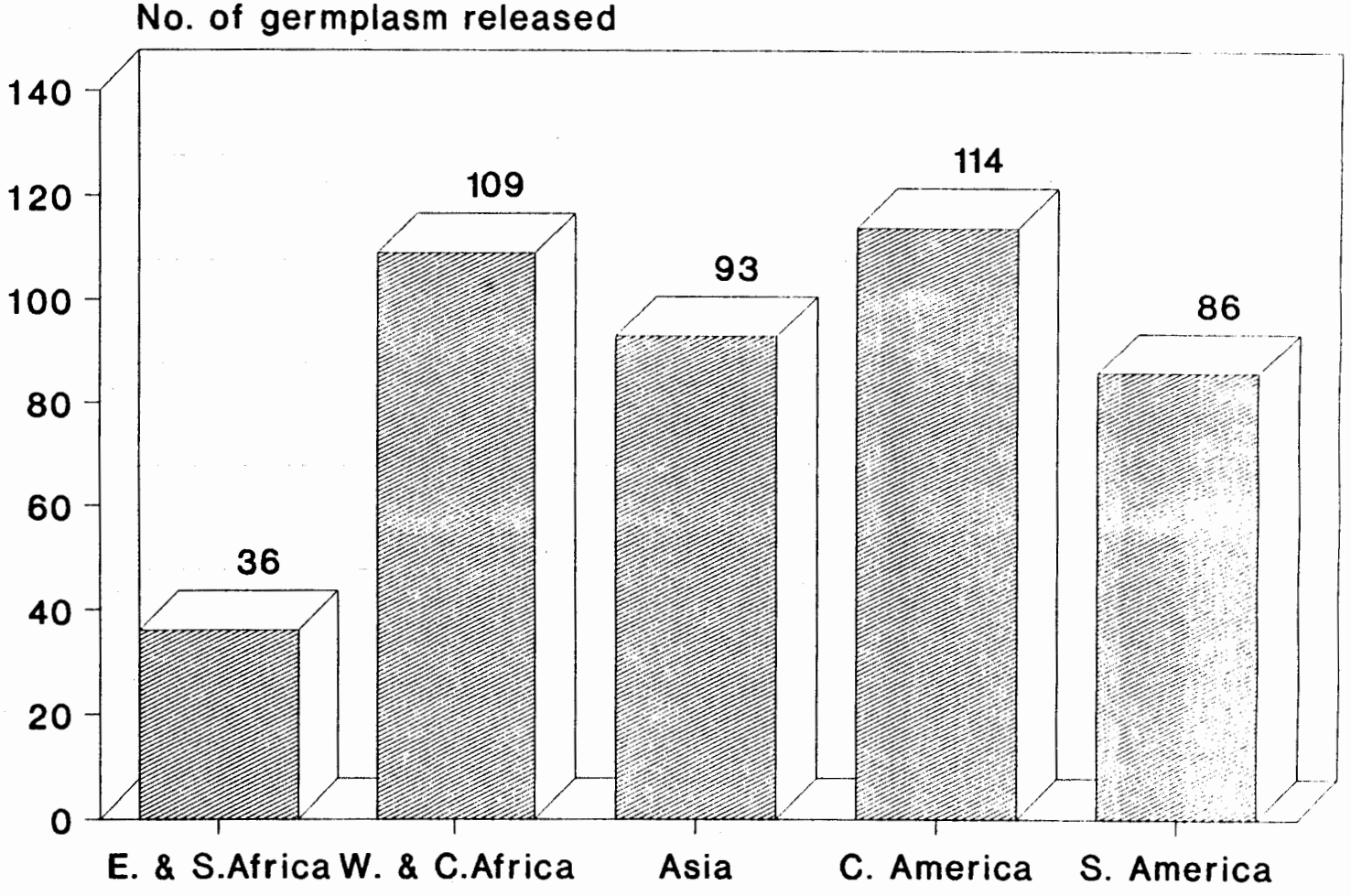
Source: CIMMYT Impact study (1990)

Release of CIMMYT-based maize germplasm
By year of release



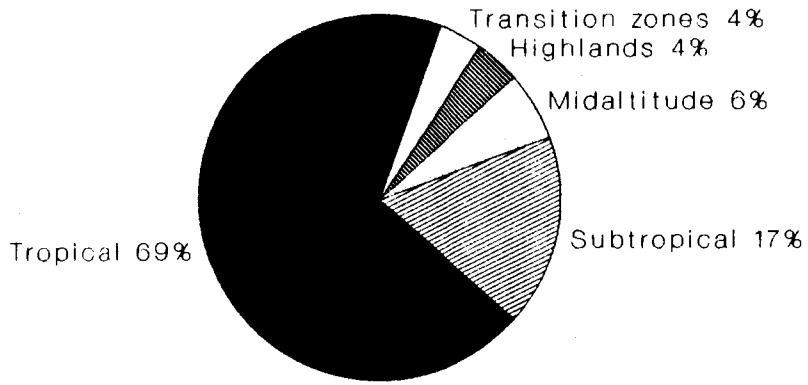
Source: CIMMYT Impact study (1990)

Release of CIMMYT-based maize germplasm By Region

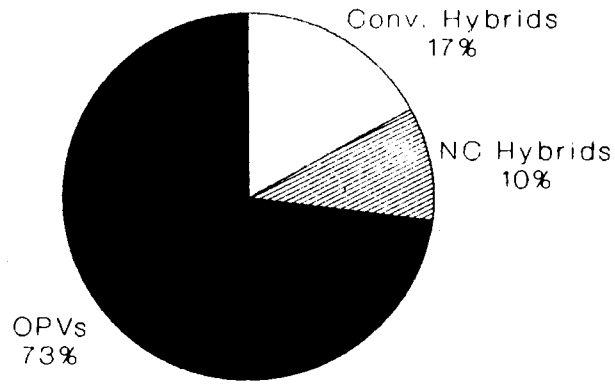


Source: CIMMYT Impact study (1990)

Maize releases containing CIMMYT germplasm



Ecological Adaptation



Type of Material

B. Maize Mega-Environments

MAIZE MEGA-ENVIRONMENTS (CIMMYT, 1988)

I. DEFINITION:

Broad, not necessarily contiguous, crop-dependent areas that are usually international and frequently transcontinental and are defined by similar biotic and abiotic stresses, crop performance, cropping system requirements, consumer preferences, and by a volume of production of the relevant crop sufficient to justify the attention of an international research program (1 million hectares).

II. USES:

a. Know target areas better.

b. Set priorities for germplasm class and stresses. Priorities are set based on a weighted production estimate which takes into account several factors such as (1) alternate suppliers, (2) strength of NARS, (3) Poverty level, (4) likelihood of success, (5) weightage to Sub-Saharan Africa among others. These are dynamic and constantly change.

c. Make inferences about similar environments in different countries.

d. In the future, relate maize variety performance to mega-environments - key site concept.

III. EXAMPLES:

A. Adaptation and maturity zones in S. and E. Africa.

B. Tropical lowland late white flint megaenvironent.

C. Tropical lowland late white dent germplasm with resistance to H. maydis, P. Polysora, and to Fusarium ear and stalk rot. This mega-environment produces an estimated 6.8 million tons of maize on some 3.8

million hectares distributed across 18 developing countries. Target populations - Pop.21, 22, 43

IV. How to improve the megaenvironment database ?

a. Verification with other databases, e.g. FAO, other IARCs, etc.

b. Consistency across countries. Collect more reliable and accurate data. Start with a few stronger NARS.

c. More precise definition of 0-5 scales

d. Data on other variables (eg. low fertility)

e. Use of new tools like GIS, Mapping softwares, etc.

f. Prediction of situation 10 years from now.

g. Incentive - share this valuable information with our collaborators.

h. GIS staff, Economist, Breeder, Agronomist, to work together in collecting and compiling the data.

TABLE 1. MAIZE MEGA-ENVIRONMENTS OF SUB-SAHARAN AFRICA *

	MEGA-ENVIRONMENT								
	1	2	3	3A	4	5	6	7	8
Area (000 ha)	1461	1882	3587[1]	1200	1925	1305	3624[2]	249	71
Ecology	HT	ST	ST	ST	LT	LT	LT	LT	LT
Grain type	WD	WD	WD/F	WD/F	WD/F	WD/F	WD/F	YD/F	YD/F
Maturity	L,XL	I	L,XL	L	XE,E	I	L	E	L[3]
Moisture	A	C,D	A,B	C	C,D	B[4]	B[5]	C	A,B[6]
Biotic stresses: [7]									
H. maydis	0.7	0.1	0.4	0.7	1.3	2.2	1.9	1.4	1.4
H. turcicum	2.8	1.1	1.6	3.3	0.3	0.8	0.5	0.2	0.7
P. sorghi	1.5	1.0	1.3	1.0	0.1	0.4	0.1	0	0
P. polysora	0	0	0	0	0.6	0	1.5	1.4	0.7
Streak	0.2	1.2	1.2	0.7	2.9	1.7	2.0	1.9	1.6
Stalk rot	0.5	0.3	0.1	0.7	1.0	0.8	1.8	0.6	0.7
Mildew	0	0.1	0.2	0	1.1	0.5	0.6	0.1	0.7
Ear rot	3.0	1.3	1.6	1.3	1.3	1.6	2.4	0.4	0
Borer	2.7	1.7	1.8	3.0	1.6	2.1	2.9	2.2	3.0
Armyworm	0.2	0	0	0	0	0.5	0	0.1	0
Rootworm	0.5	0.5	0.5	1.0	0.2	0.1	0	0	0
Termite	0.2	0	0.9	0	0.4	0.5	0.4	0.8	0
Striga	0.2	0	0.6	0	0.6	0.5	0.3	0.6	0

* Countries not included: Central Africa Republic, Namibia, Republic of South Africa, Somalia.

1/ Includes 520,000 ha of acid soils.

2/ Includes an estimated 200,000 ha grown in low pH soils in Nigeria.

3/ Includes small areas of intermediate maturing maize.

4/ Includes small areas in moisture classes A and C.

5/ Roughly 300,000 hectares in moisture classes A and C.

6/ 120,000 ha of maize in moisture classes C.

7/ Biotic stresses are rated on a scale of 0-5, in which 0 indicates that the problem is not present and 5 indicates that the crop cannot be grown in the environment unless resistant varieties are available. Rating listed in the tables are combined estimates for individual maize growing region of each country, weighted by area. More localized diseases and and insects are not included. Comparisons between diseases within a mega-environment are rough measures. On the other hand, comparisons of the same disease for different environments are fairly accurate.

MAIZE GERMPLASM CLASSIFICATION - LOWLAND TROPICS

	CLASS											
	1	2	3[1]	4[2]	5	6	7[3]	8[4]	9	10	11[4]	12
Area ('000)	2215	696	3893	1367	840	3265	5275	3213	2432	3837	4643	943
Grain type	WF	WD	YF	YD	WF	WD	YF	YD	WF	WD	YF	YD
Maturity	E	E	E	E	I	I	I	I	L	L	L	L
Moisture [6]	CD	CD	AB	CD	AB	AB	AB	AB	AB	AB	AB	AB
Biotic stresses: [7]												
Blight	1.6	1.4	2.1	2.1	1.3	1.6	3.6	4.1	2.2	1.8	2.6	0.8
Rust	0.7	1.1	1.1	0.9	0.0	0.0	1.9	2.0	1.2	1.3	1.4	0.6
Stunt	0	0.2	0	0	0.1	1.3	0	0	0.1	1.1	0	0.2
Streak	1.3	2.0	0.1	0	0.9	0.6	0	0	1.2	0.8	0	0
Stalk rot	1.3	1.1	1.1	0	1.7	0.9	1.0	0.1	1.8	1.7	2.2	0.9
Mildew	0.9	0.3	0.8	0	1.6	1.0	2.5	2.2	0.4	1.0	2.9	0.1
Ear rot	0.5	1.5	0.6	0.9	0.8	2.1	1.5	2.2	2.2	2.2	1.1	0.6
Borer	1.2	2.6	1.6	3.2	3.0	1.5	3.4	3.7	2.2	2.2	2.1	1.3
Armyworm	0.4	0.3	1.3	2.8	0.2	2.0	2.2	2.7	0.6	1.5	1.5	1.8
Rootworm	0	0	0.3	0.7	0	0.9	1.9	3.1	0.1	0.8	0.1	0.4
Termite	0.1	0.5	0.1	0	0.1	0.3	0	0	0.2	0.2	0	0
Striga	0.1	0.4	0	0	0.3	0.3	0	0	0.3	0.1	0	0

1/ Includes 1.7 M ha under moisture class CD.

2/ Includes 314.000 ha under moisture class AB.

3/ Includes 0.5 M ha under acid soils.

4/ Includes 0.5 M ha under acid soils and 1.1 M ha of moisture stress class CD.

5/ Includes 1.6 M ha under moisture class C.

6/ Moisture rating : A-D. A= rarely stressed, D= usually under stress.

7/ Biotic stresses are rated on a scale of 0-5, in which 0 indicates that the problem is not present and 5 indicates that the crop cannot be grown in the environment unless resistant varieties are available. Rating listed in the tables are combined estimates for individual maize growing region of each country, weighted by area. More localized diseases and and insects are not included. Comparisons between diseases within a mega-environment are rough measures. On the other hand, comparisons of the same disease for different environments are fairly accurate.

MEGAENVIRONMENT: TROPICAL LATE WHITE FLINT = POPULATION 25

Number of hectares with each level of stress *

Stress	1	2	3	4	5	>1	% of total ha > 1
Moisture	713	1371	235	---	---	1606	66
Helminth. maydis	723	511	750	---	---	1261	52
Helminth. turcicum	231	372	40	---	---	412	17
Puccinia polysora	138	1314	---	---	---	1314	54
Maize streak virus	100	1413	26	---	---	1439	59
Stalk rot - Fusarium	---	67	187	---	---	254	10
Stalk rot - Total	50	703	907	---	---	1610	66
Ear rot - Diplodia	---	300	45	---	---	345	14
Ear rot - Fusarium	---	361	---	---	---	361	15
Ear rot - Gibberella	---	---	107	---	---	107	4
Ear rot - Total	291	904	872	---	---	1776	73
Borers - Total	397	1020	710	100	---	1830	75

1 = Present but without economic importance
2 = Some economic importance
3 = Significant losses
4 = Severe losses
5 = Maize cannot be grown unless a resistant variety is used or chemical control applied

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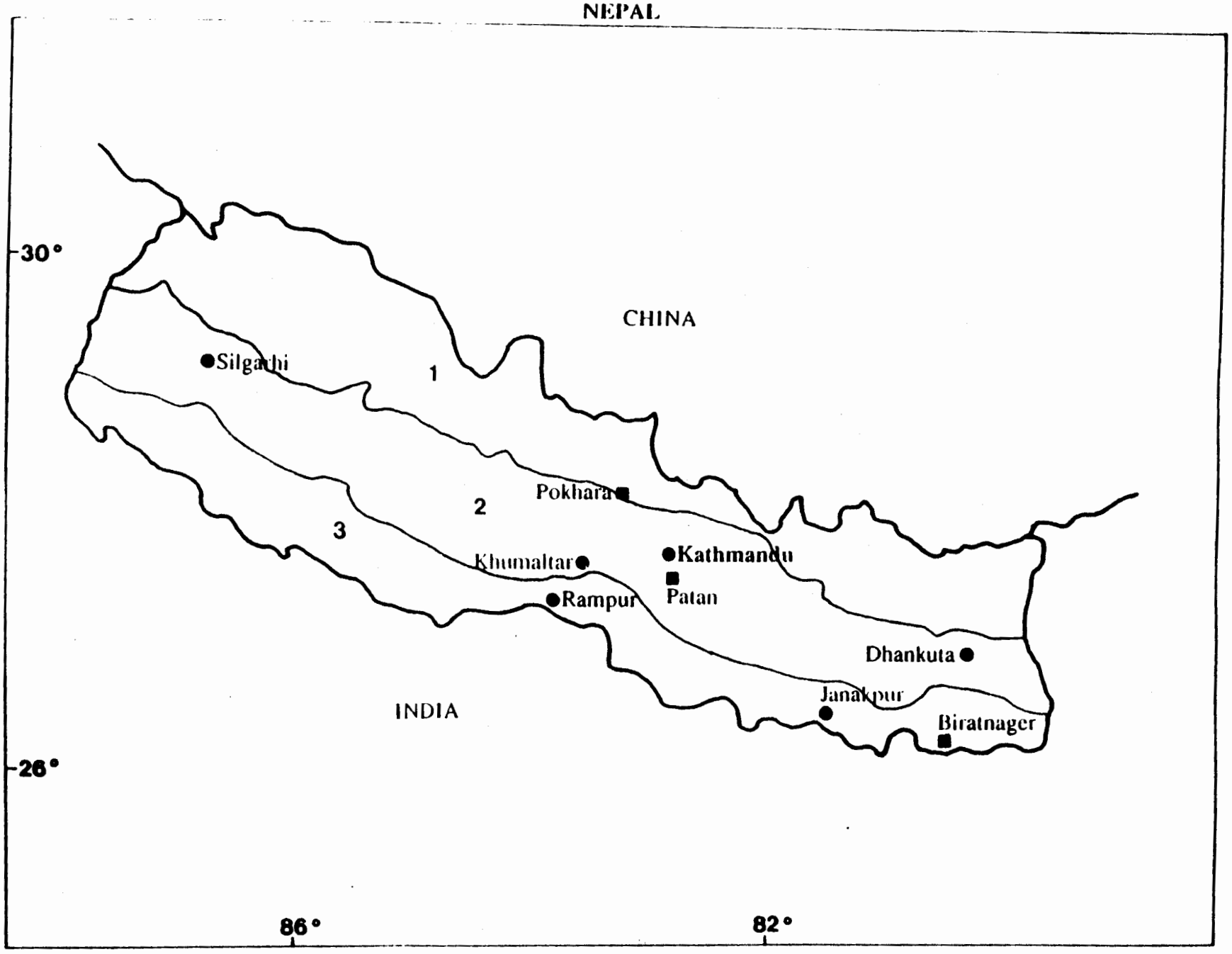

NEPAL
30°
CHINA
Silgadhi
1
2
3
Pokhara
Khumaltar
Kathmandu
Patan
Rampur
Dhankuta
Janakpur
Biratnager
INDIA
26°
86°
82°

NEPAL

	REGION		
	1	2	3
Area ('000 ha)	48	412	112
Ecology	TZ	ST	LT
Grain type	YEWF	YEWF	WF
Growing season	MA	MA	MA
Maturity	L	EI	EI
Moisture	C	C	C
Soil type	1	1	1
Biotic stresses:			
Rust	2	0	0
Stalk rot	2	3	1
Ear rot	3	1	0
Mildew	0	0	2
Ustilago maydis	2	0	0
Borers	2	2	2
Cryllotalpha spp.	2	3	3
Fall armyworm	2	2	2

MAIZE MEGA-ENVIRONMENT DATA AND WEIGHTED PRODUCTION

MEGAENVIRONMENT	MEGA ENVIRON-MENT CODE	AREA 1000 HA	MAIZE PRODUCTION REG. PROGRAM ESTIMATE (MT)	(%)	WEIGHTED PRODUCTION \1 (MT)	(%)
TROPICAL HIGHLAND	11	3,302	4,124,000	4.4	2,373,412	1.2
TROPICAL TRANSITION	12	2,272	5,930,820	6.4	23,754,065	11.8
TEMPERATE HIGHLAND	13	3,205	840,620	0.9	1,420,942	0.7
SUB TOTAL		8,779	10,895,440	11.7	27,548,419	13.6
SUBTROPICAL						
EARLY WHITE FLINT/DENT	21	652	821,250	0.9	3,367,266	1.7
EARLY YELLOW FLINT	22	977	1,004,630	1.1	2,433,505	1.2
INTERMEDIATE WHITE DENT	23	4,173	8,811,840	9.5	18,147,432	9.0
INTERMEDIATE YELLOW FLINT	24	1,045	1,178,660	1.3	3,268,186	1.6
LATE WHITE FLINT	25	2,188	3,102,500	3.3	22,807,275	11.3
LATE WHITE DENT	26	2,812	5,657,680	6.1	26,738,052	13.2
LATE YELLOW DENT/FLINT	27	4,325	8,848,700	9.5	5,862,150	2.9
OTHER	28	439	932,710	1.0	3,304,060	1.6
SUB TOTAL		16,611	30,357,970	32.6	85,927,926	42.5
TROPICAL						
EARLY WHITE FLINT	31	2,230	2,015,040	2.2	8,835,254	4.4
EARLY WHITE DENT	32	681	607,950	0.7	2,374,912	1.2
EARLY YELLOW FLINT	33	3,924	4,018,980	4.3	7,000,034	3.5
EARLY YELLOW DENT	34	1,367	1,202,200	1.3	868,648	0.4
INTERMEDIATE WHITE FLINT	35	1,185	1,411,880	1.5	7,947,088	3.9

MAIZE MEGA-ENVIRONMENT DATA AND WEIGHTED PRODUCTION

MEGAENVIRONMENT	MEGA ENVIRON-MENT CODE	AREA 1000 HA	MAIZE PRODUCTION REG. PROGRAM ESTIMATE (MT)	(%)	WEIGHTED PRODUCTION \1 (MT)	(%)
INTERMEDIATE WHITE DENT	36	2,920	5,810,050	6.2	6,377,938	3.2
INTERMEDIATE YELLOW FLINT	37	5,324	8,985,860	9.7	8,773,497	4.3
LATE WHITE FLINT	38	2,434	3,345,200	3.6	9,859,789	4.9
LATE WHITE DENT	39	3,839	6,750,900	7.3	10,329,983	5.1
LATE YELLOW FLINT	310	4,652	9,001,332	9.7	17,187,771	8.5
LATE YELLOW DENT	311	945	2,185,000	2.3	4,715,936	2.3
OTHER	312	3,213	6,491,480	7.0	4,249,152	2.1
SUB TOTAL		32,714	51,825,872	55.7	88,520,001	43.8
TOTAL (EXCLUDING TEMPERATE ZONES)		58,104	93,079,282	100	201,996,346	100
TEMPERATE EARLY/INTERMEDI	41	2,540	5,778,270		10,205,072	
TEMPERATE LATE	42	2,620	11,344,200		10,387,396	
SUB TOTAL		5,160	17,122,470		20,592,468	

International Trials Calendar of Events

	1990 Trials	1991 Trials	1992 Trials
Oct 89	Plan trials		
Dec 89	Announcement		
Jan-Feb 90	Preparation		
Mar-Aug 90	Shipment		
Sep 90	Data begins to arrive; individual site analysis		
Oct 90		Plan trials	
Dec 90		Announcement	
Jan-Feb 91		Preparation	
Mar-Aug 91		Shipment	
Apr 91	Begin preliminary report		
Sep 91		Data begins to arrive; individual site analysis	
Oct 91	Begin final report		Plan trials
Dec 91			Announcement

History of CIMMYT's International Maize Testing

1967 - 1973	Continued formation of gene pools and selection for yield, morphological traits, pest resistance, earlier maturity, and uniformity. International Maize Adaptation Nurseries. International Opaque-2 Maize Trials. Regional Trials.
1974	Systematic international testing program begins with IPTT's, one year per cycle of selection.
1975	EVT's distributed.
1976	ELVT's distributed. IPTT's change to two years per cycle of selection.

CIMMYT. Int.
Centro Internacional de Mejoramiento de Maíz y Trigo
International Maize and Wheat Improvement Center

ANNOUNCEMENT OF 1994 INTERNATIONAL MAIZE TRIALS

December 15, 1993

Dear Cooperator:

Enclosed please find the description of International Maize Trials available from CIMMYT for 1994. Three types of trials are being offered this year: (1) International Progeny Testing Trial (**IPTT**), (2) Experimental Variety Trial (**EVT**) and (3) CIMMYT Hybrid Trial (**CHT**). The following pages carry information on entries, size, adaptation, maturity, grain type, and special characteristics for each trial.

Starting in 1994 we are introducing hybrid trials in the International Maize Testing system. As most of you know, CIMMYT has been working actively on hybrid maize since 1985 and the decision to test experimental maize hybrids developed at CIMMYT through international testing is a natural follow-up to these efforts. Five CIMMYT Hybrid Trials - (1) tropical white (CHTTW), (2) tropical yellow (CHTTY), (3) subtropical white (CHTSW), (4) subtropical yellow (CHTSY), and (5) highland (CHTH) are offered this year. Each will contain not more than 20 entries, the experimental design will be randomized complete blocks (RCB) with four replications. The entries will comprise not more than 16 CIMMYT experimental hybrids, one common check hybrid, one common experimental variety provided by CIMMYT, and two local checks to be included by the cooperator. Hybrids included in these trials may be single, three-way and/or double cross hybrids. ***CIMMYT will provide upon request seed of parents of the superior hybrids identified by cooperators through these trials.***

The plot size for both EVTs and CHTs will be two 5 m long rows. Both of these rows will need to be harvested for obtaining yield data. We recommend that at least one border row is planted around the trial to avoid border effects.

If you would like to conduct one or more of these trials, please complete the enclosed **Trial Request and Shipping Information Forms** and return them to CIMMYT at least two months before your intended planting date. Because the number of available sets of these trials is limited, the early return of your trial request will allow us to reserve trials for you. The 1994 trials will be shipped beginning April 1994.

We hope that the materials offered in these trials will prove useful for your research programs. If you have any doubts about the most appropriate trials for your environments please do not hesitate to contact CIMMYT maize staff either at headquarters or our regional office near you.

Thank you again for your cooperation.

Sincerely yours,

Ganesan Srinivasan
International Maize Testing Unit

Lisboa 27, Colonia Juárez
Apdo. Postal 6-641, 06600 México, D.F. México
Mexico City office)

Telex: 1772023-CIMTME
Cable: CENCIMMYT
FAX: (595) 41069

1994 International Progeny Testing Trials (IPTTs)

Trial Name	Source Population	Description*	Progeny type**
	Tropical Populations		
IPTT 22	Mezcla Tropical Blanca	TLWD	FS
IPTT 23	Blanco Cristalino-1	TIWF	FS
IPTT 24	Antigua Veracruz 181	TLYD	FS
IPTT 25	Blanco Cristalino-3	TLWF	FS
IPTT 27	Amarillo Cristalino-1	TLYF	FS
IPTT 43	La Posta	TLWD	FS
	Subtropical Populations		
IPTT 33	Amarillo Subtropical	SIYF	TC
IPTT 45	Amarillo Bajio	SIYD	TC
IPTT 501	SIW - HG (A)	SIWD	TC
IPTT 502	SIW - HG (B)	SIWD	TC

* T=Tropical S=Subtropical L=Late I=Intermediate W=White Y=Yellow D=Dent F=Flint

** FS = Full-sibs; TC = Topcross of S2 lines to Tester from heterotic population.

1) Pop. 33 and Pop. 45 are heterotic to each other and are being improved through interpopulation improvement using Across 8833, an EV from Pop.33, as tester for Pop.45 and Across 8845, an EV from Pop. 45 as tester for Pop. 33. The progenies sent for testing are S2 x Tester topcrosses.

2) Pop. 501 and 502 are two new subtropical populations heterotic to each other. They are being improved through interpopulation improvement using the latest cycle from Pop. 501 as tester for Pop. 502 and vice-versa. The progenies sent for testing are S2 x Tester topcrosses.

All IPTTs will have a 14 x 14 simple lattice design with 2 replications and 1-row plots for a total of 392 5m rows plus borders. Entries consist of 190 families, 4 CIMMYT checks, and 2 local checks, and the weight of the seed will be approximately 5-6 kg.

DESCRIPTION OF CIMMYT MAIZE POPULATIONS IN 1994 IPTTs

Population 22 (Mezcla Tropical Blanca)--Tropical, late maturing, white dent-semident. Very broad genetic base, including Tuxpeño, ETO Blanco, Antigua, and Central American germplasm. This population was improved for downy mildew resistance in Thailand and the Philippines.

Population 23 (Blanco Cristalino 1)--Tropical, intermediate maturity, white flint. Intermediate in plant height. Aproximately 30% of the germplasm in this population is downy mildew resistant material from the Philippines. Also contains materials from Cuba, Mexico, Argentina, Honduras, El Salvador, Colombia, Ecuador, India, and US. Improved for resistance to root and stalk lodging as well as for husk cover.

Population 24 (Antigua-Veracruz 181)-- Tropical, late maturity, yellow semident. A mixture of Tuxpeño race collection Veracruz 181 and Antigua Group 2 germplasm. Intermediate plant height. Improved for tolerance/resistance to fall armyworm (*Spodoptera frugiperda*). Being improved for husk cover and resistance to stalk lodging.

Population 25 (Blanco Cristalino 3)--Tropical, intermediate to late maturing, white flint. Composed of white flint selections from crosses among materials from Mexico, Colombia, the Caribbean, Central America, India, Thailand, and the Philippines. Being improved for husk cover and resistance to ear and stalk rot and to root and stalk lodging.

Population 27 (Amarillo Cristalino-1)--Tropical, late maturing, yellow flint. Mixture of ETO, Cuban Flint, and Tuxpeño germplasm, plus materials from Central America, the Caribbean, and South America. Intermediate plant height. Improved for husk cover and resistance to ear rot and to stalk and root lodging.

Population 33 (Amarillo Subtropical)--Subtropical-temperate, intermediate maturity, yellow flint. Contains germplasm from Mexico, the Caribbean, Central and South America, the US Corn Belt, China, Pakistan, Yugoslavia, and Lebanon. Medium to short plant height. Improved for husk cover and resistance to ear rot, *H. turcicum*, and root and stalk lodging. Heterotic with Pop. 45 and is being improved currently through interpopulation improvement with Pop. 45.

Population 43 (La Posta)--Tropical, late maturing, white dent. Tuxpeño synthetic. Relatively tall, vigorous plants. The population was improved for resistance to maize streak virus in Nigeria.

Population 45 (Amarillo Bajío)--Subtropical-temperate, intermediate maturity, yellow dent. Has a broad genetic base derived from crosses among lowland tropical maize from Mexico and the Caribbean islands with Corn Belt dents from the USA. Being improved for husk cover and resistance to ear rots, *H. turcicum*, and root and stalk lodging. Heterotic with Pop. 33 and is being improved currently through interpopulation improvement with Pop. 33.

Population 501 (Subtropical Intermediate white Het. Grp. A)-- F3 generation of an intermediate maturing population based on the recombination of 32 S4 and S5 lines derived from commercial hybrids available for subtropical areas in Mexico. The lines were selected based on per se performance and testcross trials. These lines performed better with CIMMYT line CML 97 from Pop. 42 than with CML 78 from Pool 32. The population has semident kernels and has shown good heterosis in crosses with Pop. 502.

Populations 502 (Subtropical Intermediate White Het. Grp. B)-- F3 generation of an intermediate maturing population based on the recombination of 30 S4 and S5 lines derived from commercial hybrids available for subtropical areas in Mexico. The lines were selected based on per se performance and testcross trials. These lines performed better with CIMMYT line CML 78 from Pool 32 than with CML 97 from Pop. 42. The population has semident kernels and has shown good heterosis with Pop. 501.

1994 Experimental Variety Trials (EVT) and CIMMYT Hybrid Trials (CHT)*

Trial	Description	No. of CIMMYT entries	No. of checks	Total no. of 5m rows
Experimental Variety Trials (EVT)				
EVT 12	Tropical late white	13	2	120
EVT 13	Tropical late yellow	18	2	160
EVT 14B	Tropical early/intermediate white	15	2	136
CIMMYT Hybrid Trials (CHT)				
CHTTW	CIMMYT Hybrid Trial – Tropical White	16	4	160
CHTTY	CIMMYT Hybrid Trial – Tropical Yellow	16	4	160
CHTSW	CIMMYT Hybrid Trial – Subtropical White	16	4	160
CHTSY	CIMMYT Hybrid Trial – Subtropical Yellow	16	4	160
CHTH	CIMMYT Hybrid Trial – Highland	16	4	160

All trials will have a randomized complete block design with four replications and plots of two 5m rows.

Weight of the seed will vary from 2 to 3 kg per trial.

* CIMMYT Hybrid Trials are included in the International Testing System for the first time from 1994 and will be offered on a regular basis in future years.

The hybrid trials will have a maximum of 20 entries per trial, and will include one common hybrid check, one common OPV check and two regional/local checks. The CIMMYT hybrids tested in the trial will include single, three-way and/or double cross hybrids.

1994 Experimental Variety Trial

EVT 12. Tropical late white varieties

Entry no.	Variety name	Country of selection	Parental population	Origin
1	Poza Rica 9222	Mexico	Mezcla Tropical Blanca	TL93B-6101
2	Poza Rica 9223	Mexico	Blanco Cristalino-1	TL93B-6102
3	Poza Rica 9225	Mexico	Blanco Cristalino-3	TL93B-6103
4	Pichilingue S9032*	Ecuador	ETO Blanco	TL93A-1016
5	Across S9032*	Across loca.	ETO Blanco	TL93A-1017
6	Poza Rica 9243	Mexico	La Posta	TL93B-6112
7	Poza Rica 9043	Mexico	La Posta	TL91B-6099
8	Poza Rica 9022	Mexico	Mezcla Tropical Blanca	TL91B-6096
9	Pool SPL C6 F2	Mexico	Semi-prolific population	PR93A-658
10	La Posta Sequia C3 F2	Mexico	La Posta (Drought Tolerant)	TL92A-1618
11	TS6 C2 F2	Mexico	Tuxpeño sequia	TL93B-6681
12	Suwan 8222 RE	Thailand	Mezcla Tropical Blanca	TL91B-6057
13	Farako Ba 8625 RE	Burkina Faso	Blanco Cristalino-3	TL92B-6126
14	Local Check 1			
15	Local Check 2			

* S = Synthetic from 10 lines

Entry No. 7 and 8 are top-performing varieties from 1992 EVT and are being tested for second time.

Entry No. 9, 10, 11 are developed in the Physiology sub-program at CIMMYT and have performed well in the preliminary evaluation trials conducted in 1992.

Ensayo (de) Híbridos Tropicales Blancos (CHTTW) Año – 1994

CIMMYT Hybrid Trial – Lowland Tropical White (CHTTW) Year – 1994

Entrada / Entry	Código de Híb. / Hybrid Code	Genealogía / Pedigree	Origen / Origin
1	CMS 933005	CML-264 X CML-279	PR94A-460-1x2
2	CMS 933011	CML-264 X CML-258	PR94A-460-3x4
3	CMS 933015	CML-264 X CML-273	PR94A-460-7x8
4	CMS 933063	CML-270 X CML-258	PR94A-460-19x20
5	CMS 933079	CML-258 X CML-275	PR94A-460-25x26
6	CMS 933099	CL-04316 X CML-251	PR94A-461-3x4
7	CMS 933133	CML-247 X CML-254	PR94A-461-15x16
8	CMS 933137	CML-247 X CML-274	PR94A-461-29x30
9	CMS 933165	CML-251 X CML-267	PR94A-461-19x20
10	CMS 933167	CML-251 X CML-274	PR94A-461-21x22
11	CMT 933003	T-2 B X CL-02131	PR94A-464-14x1
12	CMT 933033	T-2 B X CL-02132	PR94A-464-14x5
13	CMT 933081	T-2 B X CML-254	PR94A-464-14x10
14	CMT 933121	T-1 B X CML-249	PR94A-465-13x3
15	CMT 933153	T-2 B X CML-267	PR94A-465-14x7
16	CMT 933157	T-1 B X CML-268	PR94A-465-13x8
17	CMT 933211	T-1 B X CML-270	PR94A-466-13x4
18	LA POSTA SEQ.C3	POPULATION 43 (DROUGHT TOL.)	TL94A-1696
19	LOCAL CHECK #1	3001 W	PIONEER
20	LOCAL CHECK #2	B-555	DEKALB

Codigo de lineas / Line code:

	CML 247	(P24MH119xP24MH54)-6-4-1-1-BB-##	
	CML 249	(P24xPOB.21)-1-1-1-2-BB-####	
	CML 251	(POB.21HC114xPOB.21HC38)-5-3-2-1-BB-##	
	CML 254	TUXP.SEQUIA-149-2-BBB-##-1-BB-####	
	CML 258	POB.21C5HC218-2-3-B-###-B-1-BBB-##	
	CML 264	POB.21C5HC219-3-1-B-##-B-1-3-BBB-##	
	CML 267	POB.22 TSR-4-3-1-3-1-BB-####	
	CML 268	POB.23STEC1HC45-1-1-1-2-3-BB-####	
	CML 270	POB.29STEC1HC17-4-1-1-2-1-BB-####	
	CML 273	(AC7643xPOB.43)-2-3-2-1-BB-##	
	CML 274	(AC7643xPOB.43)-2-3-4-3-BB-##	
	CML 275	POB.43STEC1HC25-4-1-1-1-3-BB-##	
	CML 279	POB.43STEC1HC26-2-2-1-2-3-BB-##	
	CL-04316	(AC7643xPR7722)-2-3-1-1-BB-##	
	CL-02131	POB21C6S1MH125-3-B-1-1-1-BB-####	
	CL-02132	POB21C6S1MH177-2-B-4-3-1-BB-####	
	T-1 B	(POB.21C5HC229xPORRILLO.8073-11)	
	T-2 B	(POB.21C5HC219xAC7843-15)	

Diseno / Design: Bloques al azar / Randomized Complete Block
Entradas / No. of entries : 20 (18 +2 testigos / local checks)
Repeticiones / Rep 4
Parcela / Plot size: dos surcos de 5 m. / two 5 metre rows

History of CIMMYT's International Maize Testing

1988 Megaenvironment data used to target germplasm and set priorities.

1989 Agro-ecological information is requested and published for each trial location.
Variable size of IPTT's: 11 x 11 to 16 x 16 lattices.
Number of populations in IPTT system reduced.

1990 IPTT size: 12 x 12 lattice.

1991 Instead of ELVT's, elite varieties are recycled within appropriate EVT.
Special purpose varieties are entered in EVT's.
Internal review.

1992 IPTT size: 14 x 14 lattice.
External review.

1994 CIMMYT INTERNATIONAL MAIZE TRIAL REQUEST FORM

Cooperator Name: _____

Institution: _____

Country: _____

Trial.	No. of sets requested	Proposed planting date	Proposed testing site
Progeny Trials			
Tropical			
IPTT 22			
IPTT 23			
IPTT 24			
IPTT 25			
IPTT 27			
IPTT 43			
Subtropical			
IPTT 33			
IPTT 45			
IPTT 501			
IPTT 502			
Varietal Trials			
Tropical			
EVT 12			
EVT 13			
EVT 14B			
Hybrid Trials			
Tropical			
CHTTW			
CHTTY			
Subtropical			
CHTSW			
CHTSY			
Highland			
CHTH			

Please return both pages of this form to:

Dr. Ganesan Srinivasan
CIMMYT International Maize Testing Unit
Lisboa 27, Apdo. Postal 6-641
06600 Mexico, D.F. MEXICO

SHIPPING INFORMATION

Please check the following address(es), make corrections if necessary, and return this form with your trial request.

MAILING ADDRESS **SHIPPING ADDRESS (if different)**

Telex_____ Telephone_____

FAX_____ EMAIL_____

Suggested shipping route from Mexico via _____

to _____. Airport: _____

Suggested airline: _____

Special instructions for seed importation (e.g., customs declaration):

_____

_____

_____

_____

_____

Is an import permit required? If yes, please enclose with your request.

CIMMYT may use DHL package express service rather than air freight to send trials if (1) total weight is less than 10 kg and (2) DHL rates to your location are cheaper than air freight. If you would like to receive your shipment via DHL, please provide your complete street address and phone number; DHL does not deliver to P.O. boxes.

C I M M Y T
INTERNATIONAL MAIZE TESTING UNIT
GENERAL NOTES TO BE RECORDED

SIDE A

FOR COOPERATOR
COPY TO RETURN
(FOR CIMMYT USE ONLY)

TRIAL NAME: _____
YEAR: _____ PLAN: _____
FILE NAME: _____

COUNTRY: _____ LOCATION: _____
COOPERATORS(S): _____
INSTITUTION: _____ ABBREVIATION: _____
ADDRESS: _____

ADDRESS USED FOR RETURN OF ANALYSIS (IF DIFFERENT): _____

LATITUDE: _____
LONGITUDE: _____
ELEVATION: _____ m above sea level

DATE PLANTED |_____|_____|_____|
DATE HARVESTED |_____|_____|_____|
Month Day Year

CHECK VARIETIES:

Entry No.	Check name

PLOT SIZE:

A No. of rows harvested _____
B Row length at harvest _____ m
C Distance between rows _____ m
D Distance between hills _____ m
E No. of plants/hill _____
F Plot size = Ax(B+D)xC _____ m^2

UNITS USED TO RECORD DATA:
(Please check [X] appropriate box and provide requested information)

Variable	Name of disease/ insect	Counting	1-5* scale	Other (specify)
Lodging				
Ear rot				
Disease(1)				
Disease(2)				
Insect(1)				
Insect(2)				
Bad husk cover				

* 1 = Best 5 = Worst

OTHER COMMENTS ON DATA RECORDED: (Metric units are assumed for field and grain weight and for plant and ear height. Please indicate if otherwise.)

_____
_____

Continued on other side

CIMMYT INTERNATIONAL MAIZE TESTING UNIT

GENERAL NOTES TO BE RECORDED, SIDE B

WEATHER INFORMATION FROM PLANTING TO HARVEST

MOISTURE	mm	TEMPERATURE	oC
Total rainfall	____	Seasonal average	____
Total evaporation	____	Seasonal average max	____
Water applied by irrigation	____	Seasonal average min	____

(Please check [X] each appropriate box)

SOIL	SOIL TEXTURE		% ORGANIC MATTER		SOIL pH	
	Sandy	____	Very low (<1%)	____	< 4	____
	Sandy loam	____	Low (1-2%)	____	4-5.5	____
	Clay loam	____	Medium (2-5%)	____	5.5-7	____
	Clay	____	High (>5%)	____	> 7	____

MANAG.	FERTILIZER APPLIED:	Kg/ha		Yes	No
	Nitrogen	____	Chemical insect control	____	____
	Phosphorus (as P_2O_5)	____	Chemical weed control	____	____
	Potassium (as K_2O)	____	Organic fertilizer	____	____
	Other: ____________		Liming	____	____

GENERAL PERFORM. & ADAPTATION		CROP SEASON		SOWING TIME		SOIL AT SOWING		PLANT STAND		WEATHER	
Good	____			Early	____	Very wet	____	Good	____		
Fair	____	Major	____	Normal	____	Moist	____	Fair	____	Normal	____
Poor	____	Minor	____	Late	____	Dry	____	Poor	____	Abnormal	____

DISEASE PROBLEM		INSECT DAMAGE		WEED PROBLEM		NUTRIENT PROBLEM		SOIL TOXICITY		DROUGHT		FROST	
1*	____	1	____	1	____	1	____	1	____	1	____	1	____
2	____	2	____	2	____	2	____	2	____	2	____	2	____
3	____	3	____	3	____	3	____	3	____	3	____	3	____
4	____	4	____	4	____	4	____	4	____	4	____	4	____

* 1=Not present or negligible 2=Slight 3=Moderate 4=Heavy

CIMMYT USE ONLY

OTHER COMMENTS ON TRIAL PERFORMANCE OR GROWING CONDITIONS: (e.g. stresses, explanation of missing plots, opinions of trial entries, etc.)

____

____

____

6. Summary

(This section is optional and it is to get the general feeling of the staff)

Question 6.1: In view of the reduced core-funding from CG, CIMMYT management decided to freeze international staff salaries at 1993 levels for 1994 [illegible] additional steps to change annual leave travel policies from full economy fare to [illegible]. These austerity measures are expected to result in certain savings for this year. The [illegible] (apart from fund-raising), might have been to reduce or eliminate some more activities [illegible] in loss of few more international staff positions. Do you support this strategy the management took for 1993 ?

YES____ NO ____

Question 6.2: If CIMMYT's budget continues to shrink in the future, and if the *CIMMYT* ***management has indicated*** *to you that the activity you are involved in will be reduced or* ***stopped***, will you be more [illegible] supportive [illegible] in benefits so that the activity you are involved in can be maintained and probably saving staff position in the process?

[illegible] _____ NO ______

Question 6.3: If CIMMYT's budget continues to shrink in the future, and if the *CIMMYT* ***management has indicated*** *to you that the activity you are involved in is of* ***high-priority and hence will not be affected****, but other activities your colleagues are involved in (which you* ***feel are equally impor[illegible]*** [illegible] *reduced* [illegible] inclined to be supportive of some red[illegible] benefits so [illegible] probably some staff positions in the pr[illegible]

[illegible] _______ NO ____

Question 6.4: If you answered [illegible] questions 6.2 and [illegible] of benefits and allowances would you [illegible] forego or [illegible] Please list below in order of priority the [illegible] think can be reduced.

....

....

....

....

Question 6.5: If some [illegible] allowances are [illegible] and salaries frozen (as in 1994) would [illegible]

1. Choose to [illegible] NO _____
2. Would look [illegible] paying [illegible] attractive [illegible] you find [illegible] _____ NO ______
3. What effect [illegible] existing [illegible] and to the morale an[illegible] existin[illegible] if needed)

....

....

MOORE SPEEDIFLEX. PATENTE 69003

27048

COMMENT

CIMMYT SEED HEALTH UNIT
HEALTH CERTIFICATE

LOCATION: EL BATAN, MEXICO

DATE:

TO THE PLANT PROTECTION ORGANIZATION(S) OF:

THIS WILL CERTIFY THAT INTERNATIONAL SHIPMENTS OF CIMMYT MAIZE SEEDS

1) Originate only from increase plots on CIMMYT stations
2) Were multiplied under the direct supervision of CIMMYT international scientists
3) Were multiplied in plots carefully inspected at least 3 times during the growth cycle by the Seed Health Unit and Maize Program pathologists and entomologists and determined free of organisms of possible quarantine interest as specified below
4) Were derived only from healthy seed from the best plants in the best plots by rigorous selection procedures
5) Were sampled and subjected to viability tests in accordance with the rules and recommendations of the International Seed Testing Association (ISTA)
6) Were subjected to microscopic examination and laboratory tests conducted under internationally accepted methods and standards and determined free of the organisms of possible quarantine interest as specified below and found practically free from other injurious organisms

VIABILITY DECLARATION

MEAN GERMINATION PERCENT: _____

COMMENTS: _____

PATHOGEN/PEST DECLARATION

ABSENCE IN FIELD INSPECTION AND LABORATORY TESTS:

PATHOGENS
CEPHALOSPORIUM MAYDIS*
CORYNEBACTERIUM NEBRASKENSE*
ERWINIA STEWARTII
SCLEROPHTHORA RAYSSIAE FV ZEAE*
SCLEROPHTHORA PHILLIPINENSIS*
SCLEROSPORA SORGHI
SCLEROSPORA SACCHARI*
SPHACELOTHECA REILIANA
* **not reported to occur in Mexico**

PESTS
TROGODERMA GRANARIUM

VIRAL PATHOGENS FOR WHICH LABORATORY TESTS ARE NOT PRESENTLY CONDUCTED BUT WERE NOT FOUND PRESENT ON PLANTS DURING FIELD INSPECTIONS:
MAIZE LEAF FLECK VIRUS**
MAIZE LEAF SPOT VIRUS**
WHEAT STREAK MOSAIC VIRUS**
** **not reported to occur in Mexico**

ADDITIONAL DECLARATION(S): male sterile materials with T-cytoplasm are not present

SEED TREATMENT

DISINFESTATION: _____

FUNGICIDE: _____ INSECTICIDE: _____

AUTHORIZED OFFICER: LARRY BUTLER, PH.D _____

THIS CERTIFICATE IS NOT A SUBSTITUTE FOR BUT SUPPLEMENTARY TO THE PHYTOSANITARY CERTIFICATE ISSUED BY THE PLANT PROTECTION AUTHORITIES OF THE GOVERNMENT OF MEXICO.

CIMMYT. Int.
Centro Internacional de Mejoramiento de Maíz y Trigo
International Maize and Wheat Improvement Center

ANNOUNCEMENT OF 1994 INTERNATIONAL MAIZE TRIALS

December 15, 1993

Dear Cooperator:

Enclosed please find the description of International Maize Trials available from CIMMYT for 1994. Three types of trials are being offered this year: (1) International Progeny Testing Trial (**IPTT**), (2) Experimental Variety Trial (**EVT**) and (3) CIMMYT Hybrid Trial (**CHT**). The following pages carry information on entries, size, adaptation, maturity, grain type, and special characteristics for each trial.

Starting in 1994 we are introducing hybrid trials in the International Maize Testing system. As most of you know, CIMMYT has been working actively on hybrid maize since 1985 and the decision to test experimental maize hybrids developed at CIMMYT through international testing is a natural follow-up to these efforts. Five CIMMYT Hybrid Trials - (1) tropical white (CHTTW), (2) tropical yellow (CHTTY), (3) subtropical white (CHTSW), (4) subtropical yellow (CHTSY), and (5) highland (CHTH) are offered this year. Each will contain not more than 20 entries, the experimental design will be randomized complete blocks (RCB) with four replications. The entries will comprise not more than 16 CIMMYT experimental hybrids, one common check hybrid, one common experimental variety provided by CIMMYT, and two local checks to be included by the cooperator. Hybrids included in these trials may be single, three-way and/or double cross hybrids. ***CIMMYT will provide upon request seed of parents of the superior hybrids identified by cooperators through these trials.***

The plot size for both EVTs and CHTs will be two 5 m long rows. Both of these rows will need to be harvested for obtaining yield data. We recommend that at least one border row is planted around the trial to avoid border effects.

If you would like to conduct one or more of these trials, please complete the enclosed **Trial Request and Shipping Information Forms** and return them to CIMMYT at least two months before your intended planting date. Because the number of available sets of these trials is limited, the early return of your trial request will allow us to reserve trials for you. The 1994 trials will be shipped beginning April 1994.

We hope that the materials offered in these trials will prove useful for your research programs. If you have any doubts about the most appropriate trials for your environments please do not hesitate to contact CIMMYT maize staff either at headquarters or our regional office near you.

Thank you again for your cooperation.

Sincerely yours,

Ganesan Srinivasan
International Maize Testing Unit

Lisboa 27, Colonia Juárez
Apdo. Postal 6-641, 06600 México, D.F. México
(Mexico City office)

Telex: 1772023-CIMTME
Cable: CENCIMMYT
FAX: (595) 41069

UNIDAD DE SANIDAD DE SEMILLAS DEL CIMMYT
CERTIFICADO DE SANIDAD

LOCALIDAD: EL BATAN, MEXICO

FECHA:

A LAS AUTORIDADES FITOSANITARIAS DE:

POR EL PRESENTE SE CERTIFICA QUE LOS EMBARQUES INTERNACIONALES DE SEMILLAS DE MAIZ DEL CIMMYT:

1) Proceden única y exclusivamente de parcelas de multiplicación de estaciones experimentales del CIMMYT en México
2) Se multiplican bajo la supervisión directa de los científicos internacionales del CIMMYT
3) Se multiplican en parcelas inspeccionadas con gran cuidado en por lo menos dos ocasiones a lo largo del ciclo de cultivo por los patólogos y entomólogos de la Unidad de Sanidad de Semillas y/o del Programa de Maíz a fin de determinar si están libres de organismos susceptibles de cuarentena como se especifica más adelante
4) Se obtienen únicamente de semillas sanas procedentes de las mejores parcelas mediante rigurosos procedimientos de selección a menos que se especifique otra cosa
5) Se muestrean y someten a pruebas de viabilidad de acuerdo con las normas y recomendaciones de la Asociación Internacional de Prueba de Semillas (ISTA)
6) Se someten a un examen microscópico y a pruebas de laboratorio realizadas según los métodos y normas internacionales aceptados, a fin de determinar si están libres de organismos susceptibles de cuarentena como se especifica más adelante y también prácticamente libres de otros organismos dañinos a menos que se especifique otra cosa

DECLARACION DE VIABILIDAD

PORCENTAJE MEDIO DE GERMINACION: _____

COMENTARIOS: _____

DECLARACION DE PATOGENOS/PLAGAS

AUSENCIA DE LOS SIGUIENTES ORGANISMOS EN LA INSPECCION EN EL CAMPO Y EN LAS PRUEBAS DE LABORATORIO

PATOGENOS
CEPHALOSPORIUM MAYDIS*
CORYNEBA ACTERIUM NEBRASKENSE*
ERWINIA STEWARTII
SCLEROPHTHORA RAYSSIAE PV. ZEAE*
SCLEROPHTHORA PHILLIPINENSIS*
SCLEROSPORA SORGII
SCLEROSPORA SACCHARI*
SPHACELOTECA REILIANA
* No han sido consignadas en México

PLAGAS
TROGODERMA GRANARIUM

PATOGENOS VIRALES RESPECTO A LOS CUALES NO SE LLEVAN A CABO EN LA ACTUALIDAD PRUEBAS DE LABORATORIO, PERO QUE NO SE ENCONTRABAN PRESENTES EN LAS PLANTAS DURANTE LAS INSPECCIONES DE CAMPO:

VIRUS DE LA PECA FOLIAR DEL MAIZ **
VIRUS DE LA MANCHA FOLIAR DEL MAIZ**
** No se tienen noticias de que existan en México

DECLARACIONES ADICIONALES:

TRATAMIENTO DE LAS SEMILLAS

DESINFESTACION: _____

FUNGICIDA: _____ INSECTICIDA: _____

FUNCIONARIO AUTORIZADO: DR. LARRY BUTLER _____
(Firma)

EL PRESENTE CERTIFICADO NO SUSTITUYE, SINO QUE COMPLEMENTA EL CERTIFICADO FITOSANITARIO EXPEDIDO POR LAS AUTORIDADES FITOSANITARIAS DEL GOBIERNO MEXICANO.

DIAGRAM OF HYDROLOGICAL CYCLE:

This shows the basic processes that go on all the time that affects lake levels. The trees intercept the rain and increase the time lag of water entering into the lake- often taking as long as 3 years for it to flow just 1 km underground.

No. 133

ACKNOWLEDGEMENT OF RECEIPT OF MAIZE SEED
ACUSE DE RECIBO DE SEMILLA DE MAIZ
ACCUSE DE RECEPTION DE SEMENCES

Please complete this form and return to
Favor de llenar esta forma y regresarla a
S.V.P. priére de remplir et de retourner ce formulaire á

Dr. Ganesan Srinivasan
CIMMYT International Maize Testing Unit
Lisboa 27, Apdo. Postal 6-641
06600 Mexico, D.F., Mexico

Seed arrived in / semilla recibida en / Semences arrivees en — good / buenas / bonnes: good. — poor / malas / mauvaises: ____ — condition / condiciones / conditions

Date received/Fecha de recepción/Date de reception: April, 27, 1994.

Comments/Comentarios/Remarques: No comment.

Name/Nombre/Nom: Dr John Sfakianakis

Address/Dirección/Adresse: Cereal Institute
P.O. Box 312
570 01 Thermi
Thessaloniki, GREECE.

Fax, Telex, Tel, email, etc. 031 - 471209.

For use by CIMMYT/Para uso de CIMMYT/A remplir par CIMMYT:

Seed registration No. ____ Trial registration No. 794005

Seed sent by
Semilla enviada por: D.R.G. Srinivasan
Semences envoyées par

Date sent/Fecha de envio/Date d'envoi des semences: 21/IV/94

Danzasmex ____ DHL ✓ Correo ____ Otros ____

CIMMYT, Int.
Centro Internacional de Mejoramiento de Maíz y Trigo
International Maize and Wheat Improvement Center

CIMMYT 1991 INTERNATIONAL MAIZE TRIALS

SPECIAL INSTRUCTIONS

Dear Cooperator:

Enclosed are maize yield trials you requested for 1991. For details on planting the trials and recording data, please refer to the booklet "Managing Trials and Reporting Data for CIMMYT's International Maize Testing Program". Some special points for this year's trials are as follows:

1. All **IPTTs** consist of two replications of a 12 x 12 square lattice design. Bear in mind that for a lattice experiment all plots within a block should be planted physically adjacent to each other. Thus, these trials should be planted in blocks of 12 adjacent rows. Entries 1-138 of the IPTTs are full-sib progenies of the respective population; entries 139-142 are standard checks provided by CIMMYT; and entries 143 and 144 are local checks to be supplied by you. Envelopes for the IPTTs contain 22 seeds each, for planting one 5-m row, two seeds/hill at 50 cm hill spacing, with no thinning.

2. **EVTs and ELVTs** are randomized complete block designs with four replications. Each envelope contains 132 seeds, for planting plots of four 5-m rows, three seeds/hill at 50 cm hill spacing, then thinning to two seeds/hill. Because several new populations are represented in the EVT/ELVTs this year, a brief description of these materials is included with the field book sheets for each trial. In evaluating these new materials, remember that many of them were selected for resistance to specific stresses. When grown in the absence of those stresses, they may not always compete well for yield with other materials.

3. A small package of **FURADAN** granules (carbofuran, a systemic insecticide) is enclosed in the envelopes for local check varieties. Please treat the seed of your checks with a fungicide of your choice. At planting, place the seed of the check varieties in the soil and apply a small amount (about 1/4 teaspoon per hill) of FURADAN on top of the seed before covering with soil. If you use a machine for planting, you can apply FURADAN on the soil surface where

Lisboa 27, Colonia Juárez
Apdo. Postal 6-641, 06600 México, D.F. México
(Mexico City office)

Telex: 1772023-CIMTME
Cable: CENCIMMYT
FAX: (595) 41089

Telephone: México, D.F. (5) 7613911/3415
Texcoco (595) 42100/3939

DIAGRAM SHOWING THE EFFECTS OF DEFORESTATION:

As a result of the Spanish invasion and the process of colonization the natural vegetation in the Chapala area has deteriorated. Due to an ever increasing population hillsides are being cleared to build houses. This creates hard impermeable surfaces, therefore rain cannot infiltrate into the soil and eventually become through flow. There is more surface run off and as there are no trees to hold soil in place the run off takes along with it soil, rocks and sediments . More water is lost through evaporation and because at the local level increased evaporation does not result in increased rainfall, this results in a drop in lake level.

Deforestation results in increased sedimentation of the lake and in the long run in less water reaching the lake-therefore it results in a drop in lake level.

EVT 14B YEAR 1990 UGANDA NAMULONGE

CO-OPERATOR:MAIZE PROGRAM

ENTRY NO./PEDIGREE	KG/HA	CHECK %BEST	DAYS SILK	PLNT HT	EAR HT	%EAR ROT	PUCC	HUSK COVER	HELM	STREAK 1-5	PLANTS HARV	EAR ASPCT	PLANT ASPECT	PLNTS GERM	MOIST %
4 Manoi 8749	5553	119	61	182	87	0.0	1.3	1.3	1.0	1.1	39.5	3.0	2.1	42.5	17.5
5 Gandajika (1) 8549	5340	114	62	167	67	0.6	1.0	1.1	1.4	1.0	42.8	3.0	2.4	42.0	16.8
2 Pirsabak (1) 8730	5267	113	60	192	94	0.0	1.0	1.4	1.4	1.0	41.3	3.0	2.5	43.0	14.9
3 Bao Phuong (1) 8749	5255	112	62	183	80	0.0	1.0	1.0	1.3	1.3	41.0	3.0	2.3	43.0	17.0
6 Poza Rica 8749	5165	110	62	171	75	0.0	1.3	1.4	1.3	1.0	36.5	3.3	2.4	38.3	16.5
1 Pirsabak 8730	4957	106	59	189	93	0.0	1.1	1.5	1.5	1.0	40.5	3.0	2.4	42.0	15.2
8 Poza Rica 8730	4933	106	60	196	92	0.0	1.1	1.1	1.3	1.0	40.0	3.0	2.6	43.0	15.2
12 Santa Rosa 8330 RE	4550	97	62	191	88	0.0	1.0	1.3	1.3	1.0	41.3	3.0	2.6	41.5	14.8
10 Chitedza 8723	4484	96	66	205	107	1.3	1.0	1.3	1.4	1.1	40.0	3.0	2.5	42.3	17.9
9 Across 8723	4331	93	62	209	108	0.0	1.0	1.3	1.1	1.0	42.5	3.0	2.6	43.3	17.0
11 Los Diamantes 7823 R	4108	88	68	191	101	0.7	1.0	1.3	1.4	1.0	40.8	3.0	2.4	42.5	17.1
7 Poza Rica (1) 8723	4095	88	66	201	99	1.4	1.0	1.0	1.3	1.1	39.3	3.3	2.5	43.0	18.1
MEANS	4835	103	63	190	91	0.3	1.1	1.2	1.3	1.1	40.4	3.0	2.4	42.2	16.5
MAXIMUM	5553	119	68	209	108	1.4	1.3	1.5	1.5	1.3	42.8	3.3	2.6	43.3	18.1
MINIMUM	4095	88	59	167	67	0.0	1.0	1.0	1.0	1.0	36.5	3.0	2.1	38.3	14.8
CHECKS (TESTIGOS):															
13 POP. 89	4673	-	64	212	112	0.0	1.0	1.3	1.0	1.3	31.3	3.0	2.6	32.5	18.8
14 ACROSS 83	3952	-	73	222	144	0.0	1.0	1.1	1.1	1.0	35.0	4.0	2.9	41.3	20.2
CHECK MEANS	4313	-	68	216	128	0.0	1.0	1.2	1.1	1.1	33.1	3.5	2.8	36.9	19.5
5% LSD	928.7		4.5	15.0	14.1						7.0				
C.V.	13.6		5.0	5.4	10.3						12.4				

LATITUDE	0 28 S	DATE PLANTED	9/19/90	TOT. RAINFALL	1270 MM	MON.AVE TEMP	24 C
LONGITUDE	32 35 W	DATE HARVESTED	2/4/91	TOT. EVAPORATION	-	MON.AVE MAX T	25 C
ELEVATION	1150 MASL	WEATHER	NORMAL	TOT. IRRIGATION	-	MON.AVE MIN T	22 C

SOIL TEXTURE S. LOAM
% ORG. MATTER HIGH >5%
SOIL PH 5.6-7

NITROGEN	90 K/H	INSECT CONTROL	NO	GEN.PERFORMANCE	GOOD	PLANT STAND	GOOD	NUTRIENT PROB	NEGLIGIBLE		
PHOSPHOROUS	60 K/H	CHEM WEED CTRL	NO	CROP SEASON	MAJOR	DISEASE PROB	NEGLIGIBLE	SOIL TOXICITY	NEGLIGIBLE		
POTASSIUM	0 K/H	ORGANIC FERT	NO	SOWING TIME	EARLY	INSECT PROB	NEGLIGIBLE	DROUGHT	NEGLIGIBLE		
		LIMING	NO	SOIL AT SOWING	TOO WET	WEED PROB	NEGLIGIBLE	FROST	NEGLIGIBLE		

COMMENT: TERMITE DAMAGE

ELVT 19 YEAR 1991

MEAN GRAIN YIELD (T/HA) BY LOCATIONS AND OVERALL MEANS
ELITE, TROPICAL OR SUBTROPICAL, QPM VARIETIES (ELVT 19) YEAR: 1991 No. LOCATIONS: 15

		ASIA			WESTERN AFRICA		NORTH AFRICA	CENTRAL AMERICA		SOUTH AMERICA	
ENTRY	ENTRY NAME	LOC. 1	LOC. 2	LOC. 3	LOC. 4	LOC. 5	LOC. 6	LOC. 7	LOC. 8	LOC. 9	LOC.10
5	IBOPERENDA 8664	5.09	5.89	5.93	5.51	4.79	6.22	5.72	6.18	3.59	5.90
3	POZA RICA (1) 8763	5.00	6.11	4.83	5.11	4.31	5.13	4.63	5.93	3.57	5.68
2	ACROSS 8762	4.76	6.10	4.38	5.82	4.47	4.70	4.69	7.09	3.34	5.82
10	ACROSS 7940 QRE	4.55	5.08	5.43	5.28	5.13	5.20	5.84	6.45	2.97	5.07
1	ELVT 19	3.89	4.49	5.33	5.13	4.15	7.70	5.09	5.88	3.07	6.29
4	ACROSS 8763	3.59	5.01	4.35	4.03	3.93	5.71	5.65	6.06	3.31	5.33
8	GOIANA 8765	4.66	4.02	4.49	4.90	4.38	5.17	4.44	5.77	3.06	5.29
6	SS9TLWQ	3.67	4.14	5.11	3.46	3.78	6.35	4.88	5.97	2.74	4.49
7	SS9C15Q	3.12	4.87	4.69	5.44	3.43	5.77	5.03	4.95	2.67	4.52
9	IBOPERENDA 8666	3.51	5.15	4.16	4.55	4.23	4.81	5.12	5.33	2.97	4.55
11	SUWAN 8222 HRE	4.64	5.81	2.35	4.73	4.53	4.33	4.45	6.53	2.83	5.96
12	LOCAL CHECK 1	5.08	4.24	2.15	5.91	4.04	7.42	5.51	6.81	2.99	5.71
	MEANS	4.18	5.09	4.87	4.92	4.26	5.68	5.11	5.96	3.13	5.29
	CV(%)	15.50	19.50	27.40	23.30	17.20	15.50	16.10	12.70	23.00	16.00

							OVERALL MEANS		
							GRAIN YIELD	DAYS SILK	PLANT HT(CM)
ENTRY	ENTRY NAME	LOC.11	LOC.12	LOC.13	LOC.14	LOC.15			
5	IBOPERENDA 8664	3.71	6.06	6.41	5.33	6.00	5.49	60.47	189.35
3	POZA RICA (1) 8763	4.20	6.11	6.56	5.69	6.89	5.32	59.92	188.55
2	ACROSS 8762	4.06	6.97	6.20	5.45	5.84	5.31	58.75	190.99
10	ACROSS 7940 QRE	3.60	6.49	5.46	6.39	6.69	5.31	60.71	177.87
1	ELVT 19	3.83	6.56	6.67	5.68	5.55	5.29	58.72	173.30
4	ACROSS 8763	3.23	5.96	5.53	5.27	4.89	4.79	59.13	178.29
8	GOIANA 8765	3.66	5.77	5.76	5.18	5.26	4.79	59.93	180.98
6	SS9TLWQ	3.58	6.01	5.28	5.00	5.00	4.63	57.97	176.35
7	SS9C15Q	3.33	6.04	5.43	4.80	4.95	4.60	58.25	179.12
9	IBOPERENDA 8666	2.54	5.23	5.47	5.45	5.85	4.60	59.45	182.33
11	SUWAN 8222 HRE	3.60	9.68	4.38	3.73	7.63	5.01	59.49	181.55
12	LOCAL CHECK 1	3.44	9.59	5.76	4.67	7.11	5.36	60.23	185.14
	MEANS	3.58	6.12	5.88	5.42	5.69	5.01		
	CV(%)	18.30	13.50	14.90	10.50	12.10			

No	LOC.	COUNTRY
1	DAB PHUO	VIETNAM
2	YEZIN	MYANMAR
3	MYMENSIN	BANGLADE
4	SAMARU	NIGERIA
5	FERKESSE	COTE D'I
6	KARAJ	IRAN
7	EL PARAI	HONDURAS
8	OMONITA	HONDURAS
9	EL PORVE	PERU
10	KARAJ	PERU
11	TURIPANA	COLOMBIA
12	S.CRUS P	BRASIL
13	CAPIBOPO	BRASIL
14	CAPIBOPO	BOLIVIA
		ARGENTIN

A new Summary Table which can create cumulative yield ranking at any stage. Very useful for our Prelim. Expr format.

RANDOMISED BLOCK ANALYSIS OF VARIANCE

SOURCE		KG/HA	MEAN SQUARES DAYS SILK	PLNT HT	EAR HT
REPS	3	712612.59	9.87	427.59	411.98
TREATMENTS	17	1046001.49	63.97	1642.50	830.83
ERROR	51	338622.93	2.68	138.22	212.38
TOTAL	71				
F RATIO FOR TREATMENTS		3.09	23.83	11.88	3.91
L.S.D. (5%)		826.01	2.33	16.69	20.69
COEFFICIENT OF VARIATION		7.37	1.83	4.49	9.58

SOURCE		MEAN SQUARES PLANTS HARV	MOIST %
REPS	3	2.38	3.34
TREATMENTS	17	68.04	0.55
ERROR	51	2.86	0.79
TOTAL	71		
F RATIO FOR TREATMENTS		23.75	0.69
L.S.D. (5%)		2.40	1.26
COEFFICIENT OF VARIATION		4.14	6.01

Newer Version of ANOV Table for RCBDs in ENT's & CUT's. All characters listed in title by the. PS. have been reversed.

8B

3. Housing Assistance

Policy No. : 2.1
Update: 1 / 8 / 87

Currently CIMMYT reim [illegible] **and utilities and the amount that is re** [illegible] **status, etc. Currently, headquarters based staff a** [illegible] **s upto a maximum amount depending on number of d** [illegible] **y for actual amount permissible). Outreach st** [illegible]

Question 3.1: Should thi [illegible]

		YES	NO
i)	Increase	____	____
ii)	D	____	____
iii)	L	____	____

Question 3.2: Should C [illegible]

i)	I	____	____
ii)	I	____	____
iii)	L	____	____

Question 3.3: Would you [illegible] **T to pay a fixed house-rent and utilities based on your family si** [illegible] ____ NO _____

Question 3.4: If a fixed h [illegible] **lities policy is to be adopted, the amount that you will be eligi** [illegible] **the current limits. Would y**

i)	I	____	____
ii)	I	____	____
iii)	L	____	____

iv) A [illegible] separate s [illegible]
.....
.....

Question 3.5: Currently [illegible] **the staff membe** [illegible] **ement. In addition to laborio** [illegible] **work for CIMM** [illegible] **ntinues as it is now (percen** [illegible] **T pay a flat rate for utilit** [illegible] **family size basis.**

____ NO _____

Any sug [illegible]
sheet if [illegible]
.....
.....

CIMMYT International Maize Testing Program

1991 EVT 12

Preliminary Summary: 10 locations

LOCATION		LAT.	ALT. (M)	PLANTING DATE	HARVEST DATE	COMMENTS
1 Capinopolis	Brasil	18 16 S	621	11/16/91	3/29/92	Drought at early stages; weather data available
2 S. Cruz Palmeiras	Brasil	6 13 S	550	11/15/91	4/6/92	
3 Poza Rica	Mexico	20 5 N	60	5/21/91	9/10/91	Weather data available
4 CEELN, Cañas	Costa Rica					
5 Central Farm	Belize	17 0 N	61	6/26/91	10/28/91	Weather data available
6 Ferkessedougou	Cote d'Ivoire	9 35 N	325	7/7/91	11/22/91	
7 Sinematiali	Cote d'Ivoire	9 37 N	305	7/27/91	11/28/91	
8 Gui-Yang	China	29 29 N	1140	4/20/91	9/11/91	
9 Jalna	India	19 51 N	550	7/4/91	10/15/91	Weather data available
10 Dan Phuong	Vietnam	21 1 N	5	8/21/91	12/30/91	Weather data available

Mean grain yield (t/ha) by locations and overall means

Tropical Late White Trial (EVT 12) Year: 1991 Number of locations: 10

Ent No.	Entry name	S. America Loc.1	Loc.2	C. America Loc.3	Loc.4	Loc.5	W. Africa Loc.6	Loc.7	Asia Loc.8	Loc.9	Loc.10	Overall means Grain yield	Days to silk	Plant ht (cm)	Russell-Eberhart's b	MS(D)
17	LOS DIAMANTES(1)8843	6.91	6.82	7.02	6.97	5.61	6.20	3.20	6.38	6.06	5.01	6.02	63	212	1.05	*
14	GOLDEN VALLEY 8843	6.73	6.89	6.65	7.47	5.69	5.65	3.40	5.27	6.86	5.29	5.99	63	216	1.01	**
15	LOUDIMA 8843	7.58	6.27	6.76	6.81	5.91	4.94	3.93	6.25	6.14	5.14	5.97	63	219	0.89	**
16	LOS DIAMANTES 8843	6.54	6.04	7.47	6.03	5.67	6.89	3.12	6.37	6.53	4.64	5.93	63	212	1.09	**
10	GOLDEN VALLEY 8825	7.30	6.65	6.27	6.33	5.02	5.83	3.23	6.15	7.00	4.75	5.85	61	197	1.11	**
13	POZA RICA 8843	6.32	6.41	6.98	6.07	5.77	6.37	3.39	5.52	6.42	5.07	5.83	63	214	0.93	
6	ACROSS S8721	6.97	6.20	7.57	5.57	5.88	5.19	3.42	5.54	6.90	4.26	5.75	64	209	1.19	
19	POP. 22 (TSR) 89	7.26	7.28	7.30	5.50	4.52	5.11	3.28	5.22	6.73	4.36	5.66	63	200	1.30	*
9	POZA RICA 8825	7.03	6.56	6.66	5.74	5.42	4.79	3.46	6.19	7.24	3.53	5.66	61	196	1.21	**
20	SUWAN 8222 RE	7.01	5.73	6.74	6.57	5.12	5.58	3.45	5.24	6.63	4.52	5.66	63	197	1.04	
12	ACROSS 8729	6.92	6.57	6.94	5.77	5.07	5.07	3.62	4.42	6.06	5.41	5.59	64	207	0.93	**
1	ILONGA S8721	6.04	6.24	6.53	6.02	4.84	5.85	2.84	5.51	7.09	4.89	5.58	63	202	1.07	
3	KANIAMA S8721	6.28	5.29	6.24	6.03	5.46	5.98	3.93	4.85	6.60	5.07	5.57	63	212	0.68	
4	CUYUTA S8721	6.34	6.32	7.09	4.91	5.74	4.85	3.17	4.89	6.51	4.52	5.44	64	207	1.07	
5	OMONITA S8721	6.50	6.37	6.63	4.83	5.57	5.56	2.86	5.36	5.97	4.59	5.42	64	201	1.04	
7	CPS 8821-4	5.63	6.17	6.63	5.59	4.98	5.14	3.75	5.29	5.55	4.70	5.34	64	201	0.71	
21	FARAKO BA 8625 RE	6.86	6.04	5.50	5.45	4.91	4.93	3.89	5.23	6.63	3.63	5.31	59	186	0.88	**
18	POZA RICA 89301	6.79	6.34	6.15	4.87	5.31	5.97	3.08	4.44	5.60	4.20	5.28	65	203	0.99	*
11	LA MOLINA 8729	7.21	5.41	6.75	3.82	4.97	4.48	3.22	5.89	6.41	4.55	5.27	63	205	1.05	**
2	SAN ANDRES S8721	6.26	4.25	7.00	5.02	4.69	5.23	3.67	5.95	6.32	4.22	5.26	63	208	0.84	**
8	POP. 21 (IST) C1F2	5.96	5.04	6.72	4.63	5.29	5.59	3.43	4.37	6.21	4.51	5.17	64	209	0.83	*
22	LOCAL CHECK 1	5.46	9.47	7.77	4.18	4.77	4.71	2.93	5.63	7.04	4.08	5.60				
23	LOCAL CHECK 2	4.95	9.37	6.86	3.79	4.56	5.99	3.33	4.59	6.94	4.57	5.49				
	MEANS	6.69	6.14	6.74	5.72	5.31	5.49	3.40	5.45	6.45	4.61	5.59				
	CV (%)	15.1	8.5	7.4	17.9	8.3	14.5	14.8	13.4	9.7	13.0					

Effect of genotypes	**
Genotype x location	**
5% LSD	0.45
CV (%)	12

** = Significant at the 0.01 probability level.

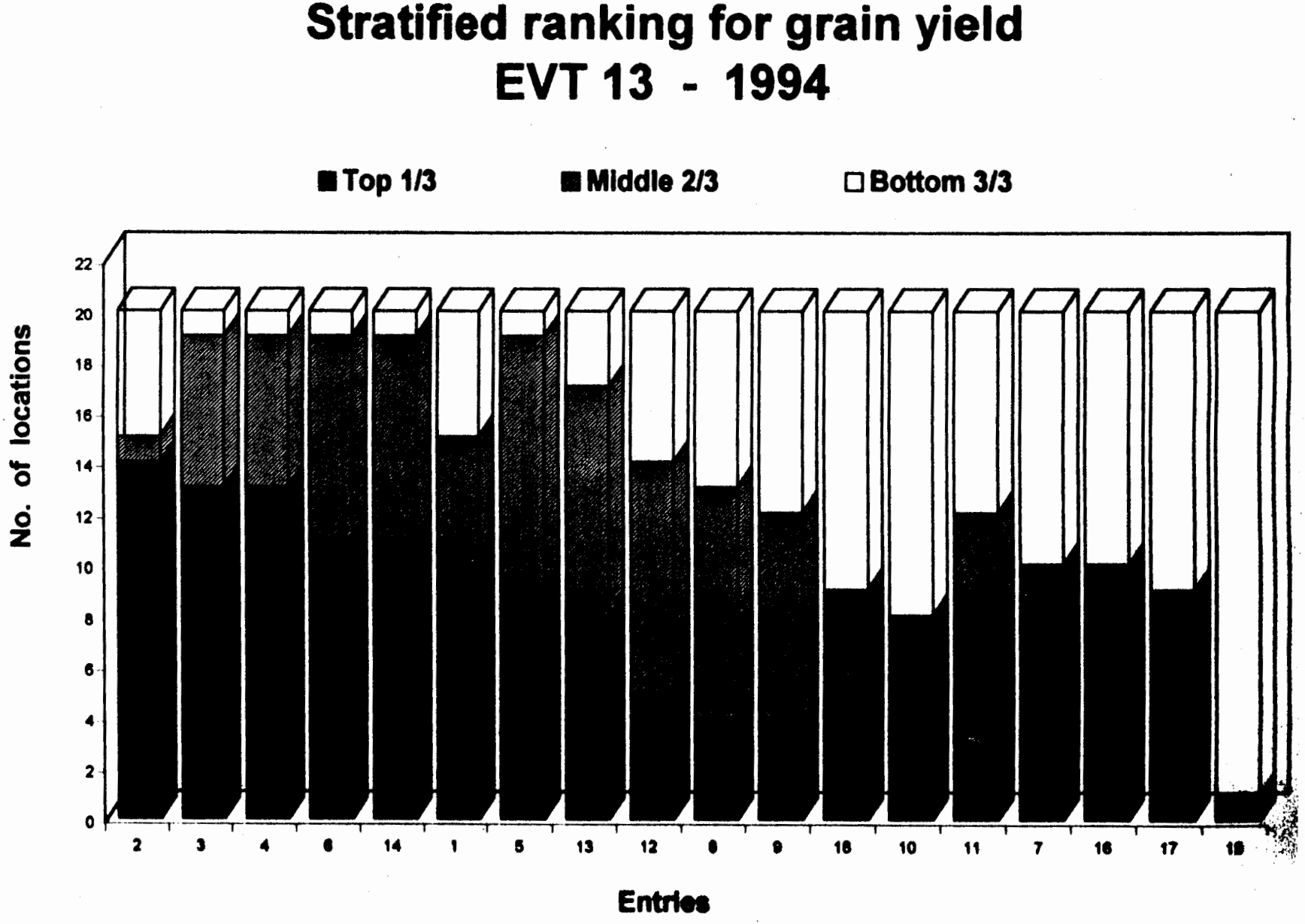
Table 6

Rank for grain yield (t/ha) by locations and overall means
Tropical Early / Intermediate White Trial (EVT 13)
Year: 1994 No. of locations: 20

Ent.		Asia									Eastern & South Africa	Western Africa	Central, North America and Caribbean					South America				Overall Means	
No.	Entry Name / Locs.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Grain Yield	Rank
3	JALNA 9126	4	5	8	3	7	6	8	2	2	3	2	7	1	17	3	5	4	3	8	5	4.8	1
2	SINEMATIALI 9126	8	3	4	2	6	4	13	1	1	13	3	3	3	6	13	11	3	18	2	1	4.8	2
6	ACROSS 9126-2	1	1	9	5	5	2	2	10	12	2	1	17	8	9	11	6	2	8	4	11	4.8	3
5	SANTA CRUZ 9126	5	7	2	8	1	5	5	8	3	11	9	9	13	3	14	7	1	2	7	8	4.8	4
4	DAN PHUONG 9126	3	8	8	4	3	1	7	13	6	5	10	4	11	4	12	10	10	6	6	2	4.8	5
13	HUANUCO 8928	2	2	7	8	4	3	3	9	5	1	11	14	15	11	4	8	9	10	1	13	4.7	6
1	TAK-FA 9126	11	4	3	7	2	7	4	3	4	4	17	13	7	2	16	14	5	13	9	3	4.7	7
14	ACROSS 8328 BN C5 F2	6	6	5	9	8	12	6	4	8	7	4	16	6	7	1	2	6	11	3	6	4.6	8
8	LUDHIANA 9136	9	11	10	13	12	14	1	11	16	12	5	10	10	1	7	13	17	4	14	18	4.4	9
12	POZA RICA 9227	7	10	12	17	13	16	12	5	11	8	15	11	2	16	10	4	15	5	5	7	4.3	10
9	YOUSAFWALA 9136	13	12	15	14	17	9	9	8	10	14	8	1	5	10	6	12	11	15	13	14	4.3	11
11	POZA RICA 9224	10	16	11	18	15	17	10	17	14	9	6	8	12	8	15	1	12	16	12	10	4.3	12
17	ACROSS 8627 RE	14	13	18	10	11	10	17	7	7	6	13	6	14	14	9	16	16	7	15	15	4.2	13
7	MUNENG 9136	12	14	13	12	14	13	15	18	15	10	14	12	9	12	5	3	7	9	16	17	4.2	14
16	EV 89345-1	16	18	14	1	9	8	11	15	9	17	12	2	16	13	18	18	18	12	10	12	4.2	15
18	ACROSS 8328 RE	18	15	1	11	10	11	18	14	13	16	16	5	17	16	8	15	13	1	11	9	4.2	16
10	ACROSS 9136	15	9	17	16	18	15	14	12	18	15	7	15	4	5	2	9	8	14	17	16	4.1	17
15	POOL 26 SEQUIA C3 F2	17	17	16	15	16	16	16	16	17	16	16	18	18	15	17	17	14	17	18	4	3.7	18

No	LOC.	COUNTRY	No.	LOC.	COUNTRY	No.	LOC.	COUNTRY
1	SONG-BOI	VIETNAM	8	JALNA	INDIA	15	RIO HATO	PANAMA
2	TAK FA	THAILAND	9	BANGALORE	INDIA	16	POZA RICA	MEXICO
3	PATTANANIKOM, L	THAILAND	10	NAMULONGE	UGANDA	17	SAN JAVIER	VENEZUELA
4	SUWAN	THAILAND	11	SINEMATIALI	COTE D'IVOIRE	18	PORTO VIEJO	ECUADOR
5	R&D STATION	THAILAND	12	DUCLOS	GUADELOUPE	19	PICHILINGUE	ECUADOR
6	RAMPUR	NEPAL	13	ALANJE	PANAMA	20	LA JOTA	BOLIVIA
7	ARABHAVI	INDIA	14	EJIDO	PANAMA			

Fig. 2



NB: For entry name refer to Table 5 or 6

Table 6

Rank for grain yield (t/ha) by locations and overall means
Tropical Early / Intermediate White Trial (EVT 13)
Year: 1994 No. of locations: 20

Ent.		Asia									Eastern &	Western	Central, North America					South America				Overall Means	
											South Africa	Africa	and Caribbean									Grain	
No.	Entry Name / Locs.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Yield	Rank
3	JALNA 9128	4	5	6	3	7	6	8	2	2	3	2	7	1	17	3	5	4	3	8	5	4.8	1
2	SINEMATIALI 9128	8	3	4	2	6	4	13	1	1	13	3	3	3	6	13	11	3	18	2	1	4.8	2
6	ACROSS 9128-2	1	1	9	5	5	2	2	10	12	2	1	17	8	9	11	6	2	8	4	11	4.8	3
5	SANTA CRUZ 9128	5	7	2	6	1	5	5	8	3	11	9	9	13	3	14	7	1	2	7	8	4.8	4
4	DAN PHUONG 9128	3	6	8	4	3	1	7	13	6	5	10	4	11	4	12	10	10	6	6	2	4.8	5
13	HUANUCO 8928	2	2	7	8	4	3	3	9	5	1	11	14	15	11	4	8	9	10	1	13	4.7	6
1	TAK-FA 9128	11	4	3	7	2	7	4	3	4	4	17	13	7	2	16	14	5	13	9	3	4.7	7
14	ACROSS 8328 BN C5 F2	6	8	5	9	8	12	6	4	8	7	4	16	6	7	1	2	6	11	3	6	4.6	8
8	LUDHIANA 9136	9	11	10	13	12	14	1	11	16	12	5	10	10	1	7	13	17	4	14	18	4.4	9
12	POZA RICA 9227	7	10	12	17	13	16	12	5	11	8	15	11	2	16	10	4	15	5	5	7	4.3	10
9	YOUSAFWALA 9136	13	12	15	14	17	9	9	6	10	14	8	1	5	10	6	12	11	15	13	14	4.3	11
11	POZA RICA 9224	10	16	11	16	15	17	10	17	14	9	6	8	12	8	15	1	12	16	12	10	4.3	12
17	ACROSS 8627 RE	14	13	18	10	11	10	17	7	7	6	13	6	14	14	9	16	16	7	15	15	4.2	13
7	MUNENG 9136	12	14	13	12	14	13	15	18	15	10	14	12	9	12	5	3	7	9	16	17	4.2	14
16	EV 89345-1	16	18	14	1	9	8	11	15	9	17	12	2	16	13	18	18	18	12	10	12	4.2	15
18	ACROSS 8328 RE	18	15	1	11	10	11	16	14	13	18	18	5	17	18	8	15	13	1	11	9	4.2	16
10	ACROSS 9136	15	9	17	18	18	15	14	12	18	15	7	15	4	5	2	9	8	14	17	16	4.1	17
15	POOL 26 SEQUIA C3 F2	17	17	16	15	16	18	18	16	17	16	16	18	18	15	17	17	14	17	18	4	3.7	18

No	LOC.	COUNTRY	No.	LOC.	COUNTRY	No.	LOC.	COUNTRY
1	SONG-BOI	VIETNAM	8	JALNA	INDIA	15	RIO HATO	PANAMA
2	TAK FA	THAILAND	9	BANGALORE	INDIA	16	POZA RICA	MEXICO
3	PATTANANIKOM, L	THAILAND	10	NAMULONGE	UGANDA	17	SAN JAVIER	VENEZUELA
4	SUWAN	THAILAND	11	SINEMATIALI	COTE D'IVOIRE	18	PORTO VIEJO	ECUADOR
5	R&D STATION	THAILAND	12	DUCLOS	GUADELOUPE	19	PICHILINGUE	ECUADOR
6	RAMPUR	NEPAL	13	ALANJE	PANAMA	20	LA JOTA	BOLIVIA
7	ARABHAVI	INDIA	14	EJIDO	PANAMA			