ICRISAT

PEARL MILLET IMPROVEMENT PROGRAM

NURSERIES AND TRIALS, 1984

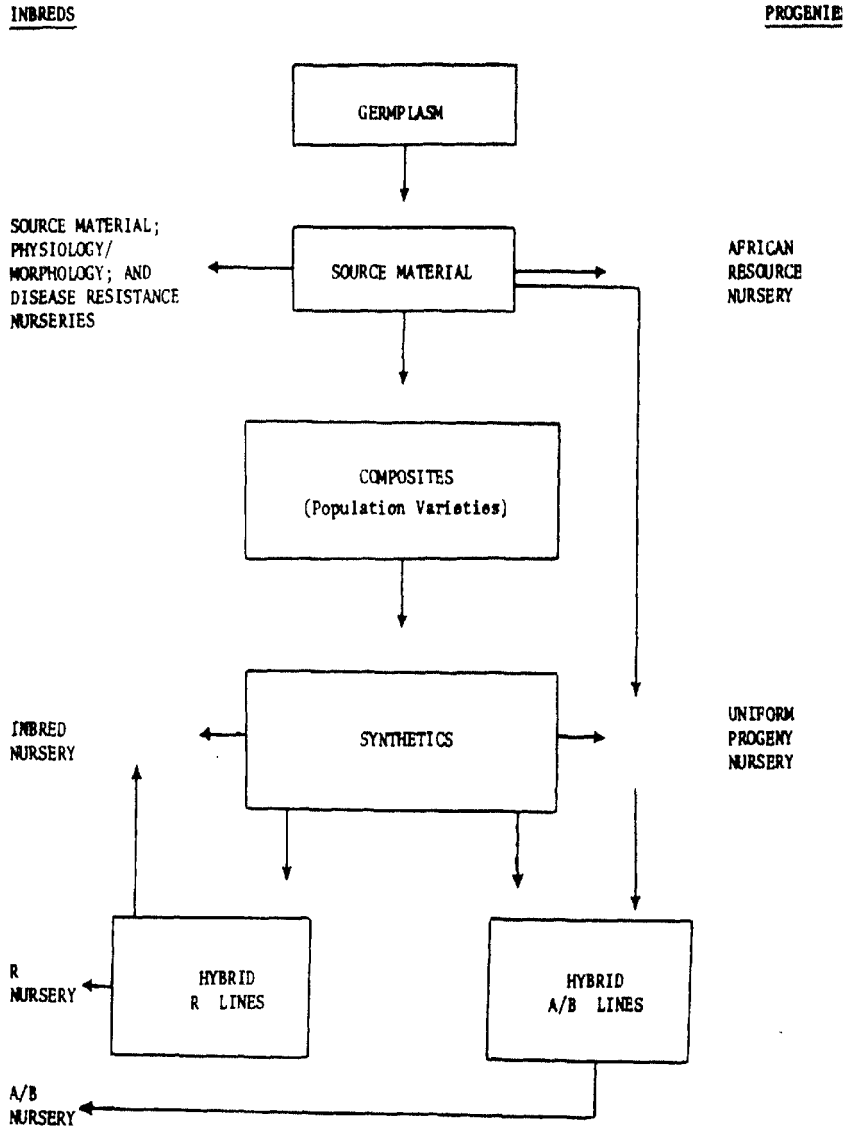
CONTENTS

INTRODUCTION

One of the major objectives of the Pearl Millet Improvement Program at ICRISAT is the distribution of improved and selected genetic material to interested scientists worldwide. To help simplify the distribution procedures, a number of nurseries/trials are assembled each year with the best material available in each of a number of different categories. This booklet contains information on these nurseries/trials. The relationship of the nurseries/trials to the ICRISAT program is illustrated in Fig. 1, their expected use is outlined in Table 1, and the details of each nursery are presented on subsequent pages. Materials listed in these nurseries is available on request (seed supplies permitting) from ICRISAT Center. The request may be addressed to:

The Pearl Millet Improvement Program
ICRISAT
Patancheru P.O. 502 324
A.P., India

Fig. 1: Output of improved genetic material from ICRISAT Pearl Millet improvement program



Advanced products (population varieties, synthetics, and hybrids) are assembled in a number of nurseries as detailed overleaf.

CONTENTS OF VARIOUS NURSERIES 1984

A. Breeder's nurseries/trials

Table 1. CONTENTS AND USE OF VARIOUS ICRISAT PEARL MILLET NURSERIES/TRIALS

A. Breeder's nurseries/trials

	Content	Use
1. Advanced products		
International Observation Nursery	5-6 elite population varieties and synthetics	Large plot and crop introduction studies
Elite products Nursery	15-20 proven varieties, synthetics and hybrids	Cultivar and introduction studies
International Adaptation	15-20 advanced varieties synthetics, and hybrids	Testing and introduction studies
Synthetic Trial	15-20 advanced synthetics	Testing
Population Varieties Trial	15-20 advanced population varieties	Testing
2. Progenies		
Uniform Progeny Nursery	90-100 F_4-F_5 progenies	Selection for inbreeding and testcrossing
3. Inbreds		
A/B	Elite A/B pairs	To cross with R-lines to make hybrids; to use in crossing program
Restorers	Elite R lines	To cross with A-lines to make hybrids; to use in crossing program
Source material	New variability	To introduce new variability
Physiology/Morphology	Special traits	To introduce specific trait; for basic studies
Disease Resistance	Specific resistances	To introduce specific disease resistance; inheritance studies

B. Pathologist's nurseries

International Downy Mildew Nursery	40 DM resistant lines	Source of DM resistance
International Rust Nursery	40 rust resistant lines	Source of rust resistance
International Ergot Nursery	28 ergot resistant lines	Source of ergot resistance
International smut Nursery	28 smut resistant lines	Source of smut resistance

ICRISAT ENTRIES IN THE INTERNATIONAL PEARL MILLET OBSERVATION NURSERY (IPON) 1984

Entry No.	Designation	Pedigree/description
1.	MC-C75	Variety constituted from seven best entries selected at Coimbatore from full sib progenies of world composite.
2.	ICMS 7703	A synthetic developed by intermating seven inbreds from Indian x African crosses.
3.	Gam 73-K77	A dwarf experimental variety derived from West African (Senegal) dwarf population Gam 73 in 1977 at ICRISAT.
4.	IVS 5454	Advanced generation of a S_1 progeny selected from Intervarietal composite in 1975.
5.	ICMS 7835	A synthetic generated by random mating nine inbreds from Indian x African crosses.
6.	NELC H79	Advance generation of the random mated nine full sib progenies of New elite composite selected in 1979 at Hissar.
7.	Local Check	Most popular local cultivar (to be supplied by Co-operator)

ICRISAT PEARL MILLET ELITE PRODUCTS NURSERY 1984

A. VARIETIES

Entry No.	Designation	Pedigree	Year of entry[4]
1.	WC-C75[3]	Seven full sib progenies from world composites	1977
2.	ICMS 7703[3]	Seven inbreds from Indian x African crosses	1978
3.	IVS 5454[3]	One S_1 progeny of inter-varietal composite	1979
4.	IVS P77	Eight S_2 progenies of inter-varietal composite	1979
5.	ICMS 7704	Six inbreds selected at Tandojam from Indian x African crosses	1980
6.	ICMS 7835	Nine inbreds from Indian x African crosses and Indian and world composite progeny crosses	1980
7.	NELC P79	Nine full sibs from New Elite composite	1981
8.	ICMS 7857	Nineteen sister inbreds from Indian x African, Indian and world composite progeny crosses	1982
9.	IVS P78	Ten full sibs of inter-varietal composite	1982
10.	D_1C-P7904	Five S_2 progenies from the first cycle of D_1 composite re-combination	1982
11.	NELC H79[3]	Nine full sibs of new elite composite selected at Hissar	1983
12.	ICMS 8021	Three inbreds from Indian x African crosses	1983
13.	ICMV 81237	Advance generation of a S_2 progeny from I.V.C.	1984
14.	ICMS 81111	Developed by random mating seven S_2 progenies of I.V.C. selected at Patancheru	1984
15.	ICMV 81253	Advance generation of a S_2 progeny of Medium composite	1984

1. Most of the materials in this Nursery will be included in the Nationally coordinated Pearl Millet (AICMIP) trials in India 1984.
2. This also indicates the year of entry into the AICMIP trials
3. These entries are also included in the International Pearl Millet Observation Nursery (IPON)

(contd..2)

ICRISAT PEARL MILLET ELITE PRODUCTS MURS. 1984 (contd.)

B. HYBRIDS

16.	ICH 220	5054A x (Souna D_2 x Ex Bornu D1083-1)	1979
17.	ICH 241	5141A x 538-142	1979
18.	ICH 440	5141A x (T166-2x700594-2-6)-90	1981
19.	ICMH 415	5141A x WC 7209	1983
20.	ICMH 423	5141A x EC-S_3-211-1	1983

INTERNATIONAL PEARL MILLET ADAPTATION TRIAL 1984

Entry No.	Entry No	Pedig
1.	ICMH 82501	81A x (GAM 75 x HC2-29-3)
2.	ICMH 82601	81A x (F_4FC 1498-1-1-3 x J104-19-2)
3.	ICMH 82631	81A x (5141B x F_4FC 1498-1-1-2-15)
4.	EICH 8215	5141A x [(T166-2 x 700594-2-6)-90-26]
5.	EICH 8301	5141A x [(T166-2 x 700594-2-6)-90-7]
6.	EICH 8317	5141A x [(NW15-18)-44 -9-1]
7.	ICMS 8141	Five inbreds derived from crosses involving intervarietal composite progenies - J1798, Souna 34-4, 700..., K4-22-10-2, late composite progenies, J934, 70-1
8.	ICMS 8283	10 inbreds from smut resistant lines
9.	ICMS 8120	Developed by intercrossing five diverse inbreds
10.	ICMS 8019	Developed by intercrossing four diverse inbreds
11.	ICMS 8137	3 inbreds developed by intercrossing three diverse inbreds
12.	ICMS 8282	12 inbreds from smut resistant lines
13.	ICMV 82111	7 S_2 progenies of NELC from Patancheru test in 1981
14.	ICMV 82113	6 S_2 progenies of NELC from Hissar test in 1981
15.	ICMV 82116	6 S_2 progenies of NELC from Bhavanisagar test in 1981
16.	ICMV 82117	7 S_2 progenies of NELC from Bhavanisagar test in 1981
17.	ICMV 82132	5 S_2 progenies of SRC from across locations test in 1981
18.	ICMV 81135	A progeny variety of intervarietal composite
19 to 25		Open for cooperators contributions

ICRISAT PEARL MILLET [illegible] TRIAL 1984

No.	Identification	Description/parents
1	ICMS 8233	Six sister inbreds from crosses involving 700651, J25-1 and 700797.
2	ICMS 8237	Five sister inbreds from crosses (B282xJ1244-1-1).
3	ICMS 8240	Five inbreds involving J104, 3/4 Souna, J1644 Medium Composite Progenies, Serere 33 and Dauro lines.
4	ICMS 8247	Four sister inbreds randommated from crosses (B Senegal-2(P5)x13003-4-2-3-3).
5	ICMS 8249	Seven sister inbreds involving IVS(S_2)250, J1798 and Serere-34-4-1-3-3.
6	ICMS 8253	Six inbreds derived from crosses Invlving Gam 73, B. Senegal, J834, J25-1, 70-1, 700..., 13003 and Cassady.
7	ICMS 8254	Eight inbreds derived from crosses involving SD_2, Ex-Bornu, J1623, 700..,B282 and J804.
8	ICMS 8260	Six inbreds from crosses involving J934, Late Composite Progenies, J25-1, T163-2 and 700...
9	ICMS 8261	Six inbreds from crosses involving J934, World Composite and Late Composite Progenies, J1644, 70-1 SC(M)P-30, T163-2, J25 and 700...
10	ICMS 8263	Five inbreds from crosses involving J934, World Composite and Late Composite Progenies, J934, J1644 and 700...
11	ICMS 8264	Six sister inbreds from crosses involving J934-3, Late Composite Progenies and 700...
12	ICMS 8265	Five inbreds from crosses involving J934, Late Composite Progenies, J25-1, T163-2, 70-1 and 700...
13	ICMS 8274	Five inbreds involving 13041, B Senegal, 70-1 EC298, Ex-Bornu, J1623, SD2, Gam 75 Progeny, J1798 and Serere 34.

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ICRISAT PEARL MILLET SYNTHETIC TRIAL 1984 (CONTD.)

No.	Identification	Description/parents
14	ICMS 8278	Five inbreds from crosses involving P24, SD2, Ex-Bornu, J343, EC298, A836, Serere 31, $23D_2B$, F_4 13061 and 700251.
15	ICMS 8280	Four inbreds randommated from crosses involving P24, SD_2, Ex-Bornu, SD 914, J343, EC298, J25, $23D_2$, 700... and F_4 13061.
16	ICMS 8282	Synthetic developed using 12 smut resistant sister lines involving EB137, ExB 132, B282, J934, 700... and progenies from world composite and super serere Composite.
17	ICMS 8102	Five inbreds, three high tillering good head type from crosses involving J2002, J934, 700..., J128-3, A836, J1798-32, Gam 73 FS-81, $23D_2B$, and F_4 13061 and two ergot resistant from crosses involving Ex-Bouchi-700638, SC-1(S_4)-27-2, and 700...
18	ICMS 8127	Five inbreds from crosses involving J934, Gam 73 Progeny, J1188, Cassoday, J25-1, 700..., Gam 75 Progeny, B282, J804, SDN 503 and J1244.
19	ICMS 8139	Four inbreds generated from crosses out of J1798, J934, 70-1, 700..., progenies from inter-varietal composite and late composite.
20	ICMS 8142	Five inbreds derived from crosses involving B-Senegal, 13003-4, 70-1, 700..., Serere Composite Progenies, J1188, Cassady, 3/4 Hainekheri, ExBornu $23D_2B$ and F_4 13061.
21	ICMS 8148	Four inbreds generated from crosses involving Souna Sco, B282, J804, J1798, 700...,Inter-varietal composite progenies, J1798, Serere lines, B-Senegal and 13003-4-2-3-3-4.
22	ICMS 8152	Five inbreds generated from crosses involving inter-varietal composite progenies, J1798, Serere Composite Progenies, 70-1, 700..., 3/4 Hainekheri, J1188, Cassady, B282, J804, 3/4 Ex Bornu & J260.
23	ICMS 7703*	Seven inbreds derived from crosses involving J25-1, B282, J260, J1798, Ex-Bornu, J804, Souna D_2 and 700....

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ICRISAT PEARL MILLET SYNTHETIC TRIAL 1984 (CONTD.)

No.	Identification	Description/parents
24	WC-C75*	Variety constituted from seven best entries selected at Coimbatore from full-sib progenies of World Composite.
25	BJ-104* (or BK560) (local check)	All India Coordinated Project Hybrid (5141Ax J104) commercially grown in India. (5141A x K560).

* checks

ICRISAT PEARL MILLET POPULATION VARIETIES TRIAL 1984

Entry No.	Designation	Pedigree
1	ICMV 83101	Developed by crossing 6 S_2 progenies of IVC selected at Patancheru in 1983
2	ICMV 83103	Developed by crossing 6 S_2 progenies of IVC selected at Patancheru in 1983
3	ICMV 83104	Developed by crossing 6 S_2 progenies of IVC selected at Patancheru in 1983
4	ICMV 83105	Developed by crossing 9 S_2 progenies of IVC selected at Patancheru in 1983
5	ICMV 83106	Developed by crossing 4 S_2 progenies of IVC selected at Patancheru in 1983
6	ICMV 83107	Developed by crossing 6 S_2 progenies of IVC selected at Bhavanisagar in 1983
7	ICMV 83108	Developed by crossing 6 S_2 progenies of IVC selected at Bhavanisagar in 1983
8	ICMV 83109	Developed by crossing 7 S_2 progenies of IVC selected at across locations (Patancheru, Bhavanisagar and Hissar) in 1983 kharif.
9	ICMV 83111	Developed by crossing 7 S_2 progenies of MC selected at Patancheru in 1983
10	ICMV 83113	Developed by crossing 6 S_2 progenies of MC selected at Patancheru in 1983K.
11	ICMV 83114	Developed by crossing 7 S_2 progenies of MC selected at Patancheru in 1983K.
12	ICMV 83115	Developed by crossing 7 S_2 progenies of MC selected at Patancheru in 1983K.
13	ICMV 83117	Developed by crossing 5 S_2 progenies of MC selected at Bhavanisagar in 1983K.
14	ICMV 83118	Developed by crossing 6 S_2 progenies of MC selected across locations (Patancheru, Bhavanisagar and Hissar) during 1983K.
15	ICMV 83126	Developed by crossing 4 S_1 lines of SSC selected at Patancheru in 1983K.
16	ICMV 83128	Developed by crossing 5 HS of SSC selected at Patancheru in 1983K.
17	ICMV 83129	Developed by crossing 5 S_2 of NELC selected at Patancheru in 1983K.
18	ICMV 83129	Developed by crossing 3 HS of SRC selected at Patancheru in 1983K.

cont'd.

19	ICMV 83131	Developed by crossing 15 H.sibs derived from 5 S_2 families of NELC selected at Patancheru in 1983K.
20	ICMV 83132	Developed by crossing 18 H.sib lines derived from 4 S_2 families of NELC selected at Patancheru in 1983K.
21	ICMV 83135	Developed by crossing 5 S_2 of Togo selected at Patancheru in 1983K.
22	ICMV 83136	Developed by crossing 5 S_2 of Togo selected at Patancheru in 1983K.
23	ICMV 83201	Advance generation of a H.sib progeny (57) of NELC selected in 1983K.
24	ICMV 83202	Advance generation of a half progeny (133) of NELC selected in 1983K.
25	ICMV 83205	Advance generation of a S_2 progeny (81-2) of MC selected in 1983K.
26	ICMV 83213	Advance generation of a S_2 progeny of (57) of MC selected in 1983K.
27	ICMV 83126	Advance generation of a S_2 progeny of (205) of MC selected in 1983K.
28	ICMV 83219	Advance generation of a S_2 progeny of IVC (16-1) selected in 1983K.
29	ICMV 83224	Advance generation of S_2 progeny of IVC (22-3) selected in 1983K.
30	ICMV 83240	Advance generation of the cross among 5 half sibs of SSC developed from the same S_1 SSC-C3 DB LB-2
31	ICMV 83243	Advance generation of a crosses of 5 half sibs identified from a S_1 progeny of SRC (135) selected at Patancheru in 1983K.
32	ICMV 83245	Advance generation of cross among 6 half sibs identified from the S_1 progeny (184) of SRC during 1983K.
33	MC-C75	Check
34	ICMS 7703	Check
35	MBH 110	Check

OTHER ELITE ENTRIES

Group	Entry	Uses
Early, bold seeded Togo varieties	1. Togo P8201 2. Togo P8202 3. Togo P8203 4. Togo H8201 5. Togo A8201	Direct test for adaptation, particularly in dry/low fertility areas.
D_2-Dwarf varieties	1. G73-K77 2. ICMS 7938 3 ICMS 8207 4 ICMS 8210 5. ICMS 8213 6 ICMS 8217 7. ICMS 8272 8. NCd_2 bulk 9. D_2 P8202	For male-sterile and pollinator (also as varieties in southern India).
D_2-Dwarf hybrids	1. ICMH 8401 (68A x GNS x SS-48-40-4) 2. ICMH 8402 (21A x " ")	Direct test for yielding ability under intercropping/ high management.

PERFORMANCE OF DPN 84 CANDIDATE ENTRIES AT BHAVANISAGAR, PHF, HISSAR IN K 83 AND PDN IN S-84

S.No.	Pedigree	DAYS TO 50% BLOOM			PLANT HEIGHT (cm)			DMS PDN S-84
		BSR	PHF	HISSAR	BSR	PHF	HISSAR	
1	(S054B x F_4 FC 1498-1-1-4)-10-1-1	53	55	61	150	180	240	0.0
2	(J104 STxLCSN 439-5-3-3)-3-2	50	49	59	175	195	245	0.0
3	(J104 STxF_4FC 1498-1-1-3)-3-3	49	49	62	120	175	240	0.0
4	(LCSN 31-3-2-2x3/4Souna(dwarf)-1-1-1	47	47	54	155	170	250	0.0
5	(LCSN 72-1-2-5xJ104ST)-3-1	48	50	-	150	170	270	3.1
6	(23D_2B trtr-1xJ104 ST)-5-3	43	46	60	155	160	230	0.0
7	(E298xF_4 FC 1498-1-1-1)-2-4-1	49	50	54	130	170	250	1.6
8	(E298xLCSN 282-4-1-2)-9-1	52	58	61	130	150	240	0.0
9	(E298xLCSN 1436-4-3-2)-7-1	52	54	58	125	160	200	0.0
10	(E298xLCSN 1436-4-3-2)-9-3-2	52	53	58	135	150	170	0.0
11	(E298xF_4FC 1498-1-1-3)-13-2-1	51	49	56	120	135	160	0.0
12	(LCSN 282-4-1-9xSouna B)-7-2	52	54	57	135	160	180	3.2
13	(B282xF_4FC 1436-4-3-1)-1-1-1	51	50	58	160	160	250	9.3
14	(B282xF_4FC 1498-1-1-2)-5-5	51	50	59	140	195	250	6.3
15	(B282xF_4FC 1498-1-1-2)-24-1	50	47	56	140	180	210	1.7
16	(S10B-106xLCSN 282-4-1-1)-5-1-2-1	50	46	54	160	185	270	0.0
17	(23D_2BxLCSN 31-3-2-4)-5-1-1-1	50	55	59	140	140	150	0.0
18	(23DBE 19-2 x S10B-106)-2-1-2-4	47	50	57	150	190	240	0.0
19	[(MC 118 x SS-33-6-2) x D_4-10]-5-3-1-1-1	51	52	60	150	200	230	0.0
20	(S054B x F_4FC 1498-1-1-2)-7-1-1-1	53	56	65	140	160	180	3.2
21	(23DBE 19-2 x S10B-106)-2-3-1-1	48	46	56	150	165	200	0.0
22	(B282 x S10B-38)-3-2-1-1-1	52	53	63	110	130	130	0.0
23	(F_4FC 1498-1-1-1 x S10B-106)-7-1-1-2	57	49	59	195	175	200	3.1
24	IVC-84-6I-1-1	55	55	65	200	215	270	0.0
25	IVC-88-2II-1-1	49	49	58	190	190	230	2.0

Contd.....

PERFORMANCE OF UPN-84 CANDIDATE ENTRIES AT BHAVANISAGAR, PHF, HISSAR IN K-83 AND PDN IN S-84 (CONTD.)

S.No.	Pedigree	DAYS TO 50% BLOOM			PLANT HEIGHT (cm)			DM% PDN S-84
		BSR	PHF	HISSAR	BSR	PHF	HISSAR	
26	IVC-109-5I-4-1	55	52	56	185	160	180	0.0
27	IVC-140-21-2-1	57	55	59	210	205	250	0.0
28	IVC P77-127-1-1	52	51	62	200	210	230	6.1
29	IVC-16-1I-1-1	51	50	62	190	200	265	0.0
30	IVC-88-iII-1	47	48	56	210	190	230	0.0
31	IVC-127-7II-3	49	52	-	190	195	230	1.4
32	IVC-88-3I-2	49	48	-	180	200	-	1.4
33	MC-20-10I-3-1	50	47	62	160	190	220	0.0
34	MC-99-6I-3-1	50	50	63	135	170	225	0.0
35	MC-121-4I-1-1	52	50	62	155	195	170	0.0
36	MC-37-7II-1	45	44	50	170	180	240	1.4
37	MC-37-7II-2	49	49	57	170	185	175	0.0
38	MC-99-2I-1	49	49	-	160	190	220	0.0
39	MC-189-7II-1	52	60	63	180	190	240	1.4
40	MC-46-3II-1	49	51	62	190	210	280	0.0
41	MC-121-9I-1	53	50	63	195	170	230	0.0
42	D_2-112-5I-1	56	55	-	160	140	190	0.0
43	NEC-181-5I-1	47	48	63	190	160	210	1.9
44	(J1623x700490-2-4-3-4-2)-2-3-1	47	49	62	160	140	150	0.0
45	[(Serere-39x700594)x700760-1-2-5]-2-3-1-2	62	60	-	240	260	250	0.0
46	[(Serere-39x700594) x 700760-1-2-5]-2-3-1-3	64	56	-	270	255	260	1.9
47	(8062-2)-1-1	46	49	63	140	160	160	0.0
48	(8082-2)-2-1	50	53	-	160	165	210	0.0
49	(8088-1)-1-1	52	53	63	130	150	200	0.0
50	(8102-2)-1-1	52	56	-	120	110	140	1.9

Cont d. . . . .

PERFORMANCE OF UPN-84 CANDIDATE ENTRIES AT BHAVANISAGAR, PHF, HISSAR IN K-83 AND PDN IN S-84 (CONTD.)

S.No.	Pedigree	DAYS TO 50% BLOOM			PLANT HEIGHT (cm)			DM% PDN S-84
		BSR	PHF	HISSAR	BSR	PHF	HISSAR	
51	(8102-3)-4-2	52	57	65	125	120	155	0.0
52	(1/2HK Nain)-2-2	52	55	-	180	220	230	1.8
53	[(J2002-1) x (J2S-1x700515-4-2-3)]-3-4-1-1	46	50	59	160	145	150	2.3
54	(B. Senegal-9 P-5 x B816)-2-2-1-1	52	54	60	195	220	200	0.0
55	(B. Senegal-9 P-5 x B816)-2-2-1-2	49	48	62	190	225	220	0.0
56	(B. Senegal-9 P-5 x B816)-2-2-2-1	49	48	62	200	155	180	3.4
57	(B. Senegal-9 P-5 x B816)-2-2-3-1	54	55	65	175	170	210	0.0
58	(B. Senegal-2 P-5 x EC298-2)-2-1-2-2	63	61	-	200	170	220	2.6
59	[(J104 x Old Jamnagar-6-4-2) x B282-1-1)]-2-1-5-1	51	59	65	145	110	150	0.0
60	[(J104 x Old Jamnagar-6-4-2) x B282-1-1)]-2-1-5-2	50	55	62	135	120	150	0.0
61	[B816 x (J1623 x WC-2) F_4 Bulk]-1-1	56	52	66	200	210	270	0.0
62	[KS60-2 x (J934-7 x 700544-7-2-1)]-7-2-1	46	49	60	155	165	160	0.0
63	{[Gam 75 x ExB) BC_1 F_3-11] x P24-1P230-1}-4-1-1	45	49	62	170	210	260	0.0
64	[J1472 x (700250 x ExB-6-2)]-9-1-1	50	47	56	150	140	190	0.0
65	[J128-3 x (A836 x J1798-32-2-1)]-3-1-1	52	48	60	175	155	190	0.0
66	[J128-3 x (A836xJ1798-32-2-1)]-10-2-1	47	40	50	145	150	190	3.3
67	[B281-1 x (A836 x J1798-32-1)]-2-5-1	52	52	62	160	155	190	0.0
68	[(SD_2 x ExB-2) x (B282 x J804-1-21-2-12)]50-1-1-1	50	48	60	180	200	240	0.0
69	[(J2S-1 x 700797-4-1-4) x (SD_2xE2B-2-1)]-21-2-3-1	52	52	60	190	200	240	4.0
70	[(J2S-1 x 700797-4-1-4) x (SD_2 x E2B-2-1)]-36-3-3-1	50	56	-	170	200	250	1.8
71	[(J2S-1 x 700797-4-1-4) x (SD_2 x ExB-2-1)]-41-2-1-1	49	52	61	145	160	210	0.0
72	[(J2S-1 x 700797-4-1-4) x (SD_2 x ExB-2-1)]-41-6-1-1	46	47	60	175	190	230	1.6
73	[(J2S-1 x 700797-4-1-4) x (SD_2 x ExB-2-1)]44-1-1-1	50	52	62	170	185	230	0.0
74	[(J2S-1 x 700797-4-1-1) x (SD_2 x ExB-2-1)]-47-2-1-1	51	52	62	175	180	250	1.4
75	[(SD_2 x ExB-2) x (J2S-1 x 700515-4-2-3-2-12)]-6-3-1-1	45	52	56	170	215	250	1.5

Contd.....

PERFORMANCE OF UPN-84 CANDIDATE ENTRIES AT BHAVANISAGAR, PHF, HISSAR IN K-83 AND PDN IN S-84 (CONTD.)

S.No.	Pedigree	DAYS TO 50% BLOOM			PLANT HEIGHT (cm)			DM% PDN S-84
		BSR	PHF	HISSAR	BSR	PHF	HISSAR	
76	[(SD_2xExB-2) x (J25-1 x 700515-4-2-3-2-12)]-44-4-4-1	49	51	54	170	200	190	0.0
77	[(J104 x 700441-6-1) x (SD_2 x ExB-2-11)]-1-3-2-1	50	52	54	140	160	220	2.2
78	[(SD_2 x ExB-2) x (J1623 x 700544-7-1-4)]-11-5-2-1	47	46	54	160	165	250	4.2
79	[(SD_2 x ExB-2) x (J1623 x 700544-7-1-4)]-14-6-3-1	50	52	56	145	160	170	0.0
80	[(SD_2 x ExB-2) x (B282 x J804-1-21-3-12)]-14-5-3-1	50	46	54	140	170	210	0.0
81	[ExB 237-3-1 (S76) x (700626-21 x B282-2-1)]-3-4-1-1	48	52	62	175	190	250	0.0
82	700620 x 3/4EB-8-19-4	-	48	50	-	165	200	3.4
83	B282 x (3/4EB 100-11-6)-1	-	56	56	-	145	140	0.0
84	((81B) x (J1623x3/4EB-96-1-9) -1-1	-	56	55	-	148	120	1.6
85	NELC-133	-	49	52	-	188	210	3.2
86	[IVS-S_2-250 x (J1623 x 700544-13-4-2)]-2-4-2-1	-	54	52	-	195	200	2.1
87	DSC:WC-BC_3-F_5-59	-	49	57	-	128	100	1.6
88	DSC:IVC-BC_3-F_5-1090-2	-	55	-	-	105	90	0.0
89	DSC:IVC-BC_3-F_5-391	-	48	53	-	118	100	0.0
90	[(B282 x J1244-1-1) x IVS-S_2-60]-1-3-2-2	-	49	55	-	188	190	0.0

ICRISAT A/B NURSERY 1984

S.No.	Code	Pedigree
1	ICM ms 81A/B	Downy mildew resistant version of $23D_2A$
2	ICM 833A	$23D_2A(I)$ x (J-1623 x 3/4 EB-96-1-10)-11-1-1-4-4
3	ICM 834A	Serere 10A-17
4	ICM 841A	Disease resistant version of S141A
5	ICM 842A	Disease resistant version of 21A
6	ICM 843A	Disease resistant version of 68A

ICRISAT RESTORER NURSERY 1984

Entry No.	Designation	Pedigree	Year of entry
1.	ICP 220	SD_2xEx B-2(D1088)-1	1979
2.	ICP 241	S38-142	1979
3.	ICP 440	T166-2x700594-2-6-90	1981
4.	ICP 415	WC 7209	1983
5.	ICP 423	EC-S_3-211-1	1983

ICRISAT SOURCE MATERIAL INBRED NURSERY 1984

Designation (ICMI#)	Pedigree
83201	(P3Kolo x G73-C_1-12)-4
83202	(3/4ExB x Niger Sel.1978)-4-1
83203	(J1644 x 3/4 Souna-3-1)-1-3
83204	(NEP7-5603 x SS48-20-1)-4
83205	(B282 x 3/4 ExB-100-6-8)-2-1
83206	(B282 x 3/4 ExB-100-10-2)-1-1
83207	(J1644 x 3/4 Souna 6-27-2-2)-4
83208	(B282 x 3/4 ExB-100-11-4)-2-2
83209	(B816 x 3/4 ExB 105-11)-1-1
83210	(B816 x 3/4 ExB-105-11)-2-2
83211	(PIB228 x 3/4 ExB 119-35-7)-4-2
83212	(F_4FC1474-2-2-2-2)-3
83213	(239D_2B x 700516-30-3)-1
83214	(DPN-8-2-1)-2
83215	(B816 x 3/4 ExB-105-11)-4
83216	(MC103 x 517B-11-3-1)-2
83217	(NEP-7-5603 x 3/4 ExB-8-16-1-3-2)-1
83218	(J1281 x SS 40-4-1)-11-1-1-1
83219	(NEP7-5603 x SS-48-47)-7-3-1-1
83230	(B282 x 3/4 ExB-100-11-4)-1-1-2-1
83231	(" ")-1-2-1-1
83232	(J1912 x 23D_2B-57-3-1)-1-1-5
83233	(")-2-3-2
83234	(")-3-1-2
83235	(PIB228 x 3/4HK 119-35-7)-1-1-2
84201	(F_4 FC1498-1-1-1 x S10B-106)15-1-1-2
84202	(B282 x S10B-38)-4-3-1-2
84203	(F_4FC 1498-1-1-1 x S10B-106)15-1-2-1-2
84204	(B282 x S10B-38)6-1-1-1-2
84205	23D_2B x (J104 x 3/4HK 11-80-1)20-1-3
84206	(23DBE-19-2 x S10B-106)2-1-1-1-1
84207	(LCSN 72-1-2-4 x J104ST-5)1-1-3-2
84208	(B282 x S10B-38)6-1-1
84209	(LCSN 1173-1-9-3 x E298)13-6
84210	(23DBE-19-2 x S10B-106)2-1-2-2

Cntd.

ICRISAT SOURCE MATERIAL INBRED NURSERY 1984 (CONTINUED)

84211	23D$_2$B x (J104 x 3/4 HK 11-80-8)10-1-1-1
84212	S10LB 30 x LCSN 282-4-1-1-1
84213	(J1644 x 3/4S-6-27-2-P2)-4
84214	(23DBE 19-2 x S10B-106)2-1-3
84215	Serere 10B-106 x LCSN 282-4-1-1)6-1-1
84216	(LCSN 72-1-2-2 x S10B-106)2-2-1
84217	(Serere 10B-37 x LCSN 1173-1-9-1)2-1-3
84218	(F_4FC 1498-1-1-8 x 3/4Ex Bornu)5-3-2-1
84219	(LCSN 282-4-1-1 x S10B-38)5-2-1
84220	(E298 x LCSN 282-4-1-3)-1-1
84221	(3/4 Souna 210-2 x S10B-38)2-1-1-1
84222	(S10B-106 x LCSN 282-4-1-1)5-1-3
84223	(LCSN 72-1-2-2 x S10B-37)2-2-4-2
84224	(LCSN 72-1-2-3 x S10B-38)8-1-3
84225	(B282 x S10B-38)2-1-2-2
84226	(23DBE-19-2 x S10B-106)2-3-1-1
84227	(E 298 x F_4FC 1498-1-1-3-6)2-1-2-2

BREEDERS'/PHYSIOLOGISTS' NURSERY

Entry	Pedigree	Major character
1	[700594 x (K560-11(OP)x13033)]-4-1-1-1	Seedling vigour - high
2	Exbornu-15-1-1-1	Plant height - tall
3	NC-196-1-1	" "
4	D_1C-196-1-1	Plant height - medium
5	D_1C-216-1-1	" "
6	J104-1-1	Plant height - short
7	(EC^{4}xG73)-44-1-1	Plant height - d2 dwarf
8	(MC^4 xG73)-258-1-1	" "
9	(GNS x SS-48-40-4)-4-3-1-3	Growth habit - spreading
10	(E298 x LCSN282-4-1-2)-12-2-2	" "
11	(IVC^4 x G73)-47-1-1	Growth habit - semi spreading
12	CD39-5-1-2-1-1-1	" "
13	J1593-1-3-1-1-1	Growth habit - upright
14	B211-2-1-4-1-1-1	" "
15	[SD_2xExB-2(D-1)-3]-1-1-1	Thick stem
16	(A836xJ1623)-16-2-1-1-1-1	"
17	(E298 x F_4FC1498-1-1-2)-4-1	Thin stem
18	(LCSN1173-1-9-3 x E298)-13-8	"
19	J1925-1-5-1-1-1-1	Stiff stalk
20	[SD_2xEXB-2(D1074-1)]-1-3-3-1-1	Leaf width - broad
21	(3/4EXB x J1399-2)-4-1-1-1	" "
22	CD-15-4-1-2-3-1-1-1	Leaf width narrow
23	(23D_2B x 23D_2Btrtr-1)-17-1-2	" "
24	(LCSN1179-1-9-4 xJ104)-10-5-2-1	" "
25	(MC^4.xG73)-192-1-1	Leaf angle - up right
26	(F_4FC1498-1-1-1 x610LB-106)-7-1-1-2	" "
27	F_6-226-1-74-1-2-1-1	Leaf angle - Lax
28	J1270-5-1-3-1-1-1	" "
29	(J25-1 x J934-7-18)-2-1-2-3-1-1-1	Leaf senescence - early
30	(J1352 x 239D_2B-17)-2-2-1-1-1	" "
31	(GNS x SS-48-40-4-)-3-7-2-1	" - late
32	(B282 x J888)-6-1-1-1-1	Canopy - open
33	(70-1 x J934)-7-9-1-3-1	Canopy - dense
34	(GNS x SS-48-40-4)-3-7-2-1	" "
35	WC-1-3-1-2-1-1-1	Basal tillering - high
36	7025-7-3-1-1-1	" "
37	(GNS x SS-48-40-4)-3-7-2-1	" "
38	(F_4FC1498-1-1-3 x J104ST)-16-1-1-1-1	" "
39	(E298 x LCSN282-4-1-3)-1-1-	" "
40	SD_2xEXB-2(SD-954-1)-3-6-2-1-1-1	Basal tillering - low

Entry	Pedigree	Major character
41	7097-1-3-1-1-1	Basal tillering - low
42	(Souna B x LCSN1173-1-9-2)-4-2-1-1	" "
43	[(J1644 x 3/4 Souna 6-3-1)xD296-5]-1-2-3-2-2	" "
44	(Tulaja-3 x LCSN 173-1-9-3)-15-1-1-1	Synchronous tillering
45	(GNS x SS-48-40-4)-3-7-2-1	" "
46	ICM ms 81B	Non-synchronous tillering
47	(J25-1xJ934-7)-1-8-2-1-1-3-1-1-1	Nodal tillering - high
48	WC-12-2-1-3-1-1	Nodal tillering - low
49	J1444-1-2-1-1-1	Crop type - wheat
50	SD_2 x EXB-2(D-1)-2-1-1-1	Crop type - sorghum
51	3/4 Seno-22-1-2	Long heads
52	[(J1623 x 3/4 EXB-96-1) x #34-1]-17-1-1-1	"
53	7097-1-2-1-1-1	"
54	7042-1-4-4	Short heads
55	(A836 x 700743-12)-1-5-1-1-2-1-1	Head girth - thick
56	(E298 x F_4FC1498-1-1-4)-5-1	Head girth - thin
57	(J1352 x 67B-13)-1-2-1-1-1	Globose head
58	(B282 x S10B-38)-39-3-1-3	Bristled head
59	[(PIB228 x 3/4 EXB 108-2-4) x 3/4 Seno 57-2]-3-3-2-1	" "
60	7226-2-2-1-1-1	Compact head
61	S10B	Loose head
62	[23D_2B x (J104 x 3/4 HK-11-80-8)]-16-3-2	Good exsertion
63	(B282 x J888)-6-1-2-2-1-1-1	Poor exsertion
64	Togo 908-5-2	Grain size - bold
65	[23D_2B x (J104 x 3/4 EXB-11-80-8)] 20-1-1-2	Grain size - small
66	Bhilodi-1	Early maturity
67	(Tulaja-3 x LCSN 1173-1-9-3)-15-1-1-1	Late maturity
68	700112-2-1	Protein content - high
69	WC-190-5-2	" " "

ICRISAT DISEASE RESISTANT NURSERY, 1984

Entry No.	Designation	Pedigree/Source	Year of entry
A. Downy Mildew Resistant			
1	SDN-503	Nigeria	1976
2	P-7	Mali	1976
3	700251	Nigeria	1976
4	700516	Nigeria	1976
5	E 298-2-1-8	Advance generation progeny of Early composite/ICRISAT	1980
B. Rust Resistant			
6	700481-21-8	Nigeria	1977
7	Souna Mali	Mali	1979
8	IP 2084-1	South Africa	1980
9	IP 537 B	Mali	1978
10	700481-7-5	Nigeria	1977
C. Ergot Resistant			
11	ICMPES-1	Developed using 5 F_8 lines from J606-2 x J703-1	1982
12	ICMPES-2	Developed using 5 F_8 lines from J2238 x J2210-2	1982
13	ICMPES-9	Developed from F_5 from 700708-1-E-1 x J797-1-E-1-2	1983
14	ICMPES-16	Developed from 3 F_5 lines from 700708-1-E-1 x J797-1-E-1-2	1983
15	ICMPES-27	Developed from 5 F_5 lines from 700708-1-E-1 x J797-1-E-1-2	1982
D. Smut Resistant			
16	EB 132-2-S-5-2-DM-1	Nigeria	1978
17	P-489-S-3	Senegal	1981
18	EBS 46-1-2-S-2	Nigeria	1980
19	P-20-S-1	Senegal	1980
20	EB 112-1-S-1-1	Nigeria	1980

CONTENTS OF VARIOUS NURSERIES 1984

B. Pathologist's Nurseries

INTERNATIONAL PEARL MILLET DOWNY MILDEW NURSERY - 1984

S. No.	Entry
1.	P-7
2.	P-105
3.	P-310
4.	P-472
5.	P-524
6.	P-2672
7.	700251
8.	700516
9.	700651
10.	EB-83-2
11.	EB-298-2-1-8
12.	SDN-503
13.	IP-1903
14.	P-3254
15.	P-3281
16.	P-3283
17.	P-3292
18.	P-3299
19.	P-3344
20.	P-3346
21.	P-183
22.	P-186
23.	P-462
24.	P-463
25.	P-535
26.	P-2828
27.	P-2887
28.	P-2903
29.	IP-6139
30.	IP-6140
31.	IP-6141
32.	IP-6149
33.	IP-6156
34.	IP-6469
35.	IP-8669

(contd..2)

INTL. PMDM NURSERY - 1984 (Contd..2)

S. No.	Entry
36.	IP-8695
37.	IP-8712
38.	IP-8713
39.	IP-8715
40.	IP-8747
41.	700481-22-8
42.	D-1162/1/2
43.	Collection-75
44.	Collection-91
45.	RC-069

INTERNATIONAL PEARL MILLET RUST NURSERY - 1984

S.No.	Entries
1.	P-2890
2.	P-1577
3.	P-1592
4.	P-1591
5.	P-1564
6.	P-1581
7.	P-2880
8.	45-329
9.	45-373
10.	IP-2084-1
11.	IP-2084-1
12.	SAD-421
13.	P-2950
14.	P-1630
15.	45-335
16.	P-615
17.	45-345
18.	P-24
19.	IP-1481-L
20.	IP-6248 (P-148)
21.	IP-8877
22.	Collection-91
23.	IP-5639 (P-2936)
24.	IP-8821
25.	IP-8875
26.	P-2933
27.	P-51
28.	IP-8747
29.	IP-8767
30.	Collection-95
31.	IP-6043
32.	IP-6151
33.	IP-6152
34.	IP-6165
35.	IP-8776

(contd..2)

INTL. PMR Nursery 1984 (Contd.)

S. No.	Entries
36.	8791
37.	IP-6469
38.	IP-8997
39.	IP-8998
40.	IP-6431
41.	IP-6250
42.	IP-8818
43.	IP-6164
44.	IP-8748
45.	IP-537 B

INTERNATIONAL PEARL MILLET ERGOT NURSERY 1984

No.	Entry/Code No.
1.	IOMPES-1
2.	IOMPES-2
3.	IOMPES-6
4.	IOMPES-7
5.	IOMPES-8
6.	IOMPES-9
7.	IOMPES-15
8.	IOMPES-16
9.	IOMPES-17
10	IOMPES-18
11	IOMPES-22
12	IOMPES-23
13	IOMPES-24
14	IOMPES-26
15	IOMPES-27
16	IOMPES-28
17	IOMPES-29
18	IOMPES-30
19	IOMPES-31
20	IOMPES-32
21	IOMPES-34
22	IOMPES-35
23	IOMPES-37
24	IOMPE 13-6-27
25	IOMPE 13-6-30
26	IOMPE 34-1-10
27	IOMPE 134-6-25
28	IOMPE 134-6-34
29	Trial Check-1
30	Trial Check-2
31	Local Resistant
32	Local Susceptible

SOCIAL COST OF ENVIRONMENTAL QUALITY REGULATIONS: A GENERAL EQUILIBRIUM ANALYSIS

Michael Bazilio and Raymond L. Epp

(Discussion Paper QERP 11)