

Country K : SENEGAL



**Status of Irrigated NERICA
Development and Dissemination**

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JICA/WARDA-ICA Joint Seminar on NERICA Dissemination
in Africa 2007

Agribank 4 December 2007



Background

- Interspecific Breeding Activities for irrigated rice started at WARDA Saint Louis in 1996
- 74 different crosses were made
- 10 glaberrima parents were used
- Nearly 100 sativa parents including lines from IRR, CIAT etc.




**Background
(cont')**

- 2 approaches
- In situ selection at Niaye and Faraye in Senegal
- Shuttle breeding (Burkina Faso, Cote d'Ivoire, Mali and Togo)


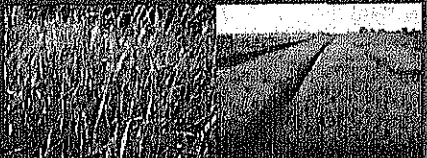


List of Glaberrima Parents used for different crosses

1	Tag 2452
2	Tag 5072
3	Tag 5073
4	Tag 5074
5	Tag 5075
6	Tag 5081
7	Tag 5082
8	Tag 7030
9	Tag 7031
10	Tag 7032

Breeding Objectives

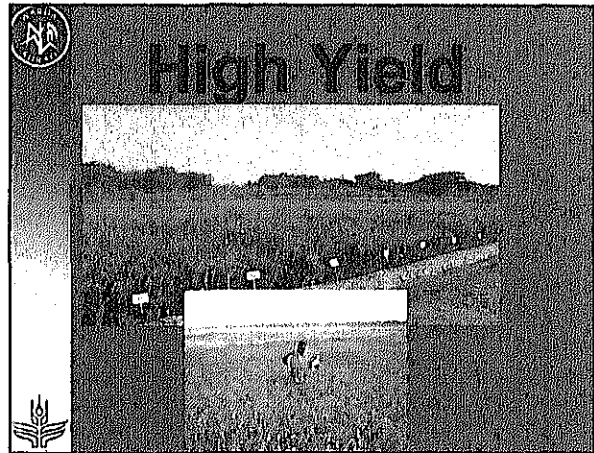
- High yield
- Early maturity
- Disease resistance (Bacterial blight, Shear blight, Blast)
- Insect resistance
- Good grain quality
- Drought tolerance
- Salinity tolerance
- High NRE
- High NUE




Genoplasm Exchange for interspecific lines

Designation	1990	1991	2001	2002	2003	2004
ORIN MARI				17		21
IRAKA				5	9	61
IRAKA (check)						492
IRAKA (check)	17	95				20
IRAKA (check)				10		10
IRAKA (check)				42		47
IRAKA (check)				31		21
IRAKA (check)				11		101
IRAKA (check)					45	10
Total	22	950		195	61	30
						1258



Yield (t/ha) of the best performing interspecific lines GN Dry season 2002

Designation	Penayo	Ndaya	Mean
WAS 161-B-4-B-1	10.5	6.9	8.7
WAS 161-B-4-B-2	8.5	5.2	6.8
WAB 161-B-2	11.2	6.8	9.0
WAS 161-B-4-B-3	7.1	6.2	6.6
WAS 161-B-4-B-4	7.1	6.2	6.6
WAS 161-B-4-B-5	6.5	7.9	7.2
WAS 161-B-4-B-6	7.2	6.0	6.6
WAS 161-B-4-B-7	7.1	6.1	6.6
WAS 161-B-4-B-8	7.0	6.1	6.5
WAS 161-B-4-B-9	7.0	6.1	6.5
WAS 161-B-4-B-10	7.0	6.1	6.5
SAHEL 108 (CHECK)	10.4	6.3	8.35
IR 31051 (CHECK)	7.1	6.1	6.6
IR 31051 (CHECK)	7.1	6.1	6.6

Yield (t/ha) of the best performing interspecific lines PYT wet season 2003

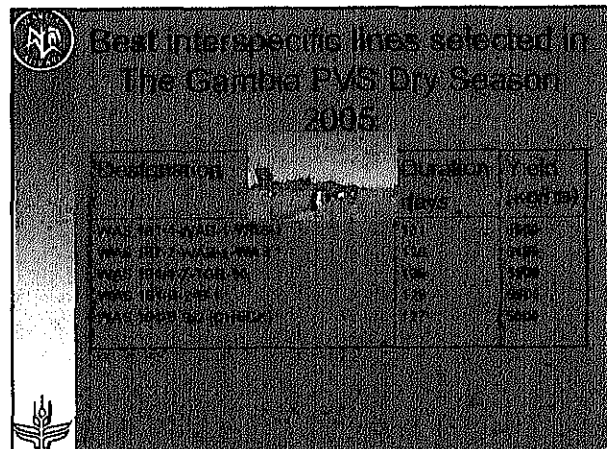
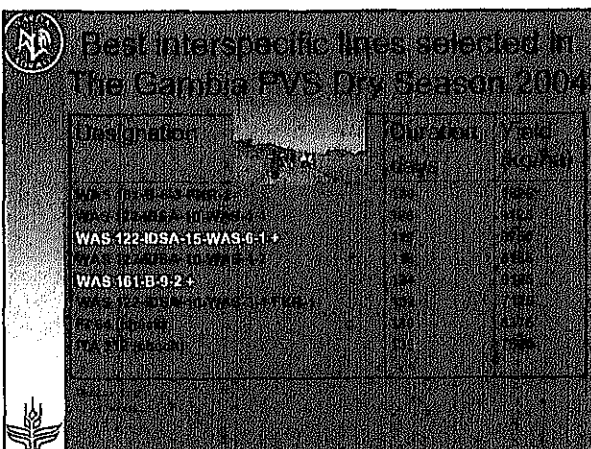
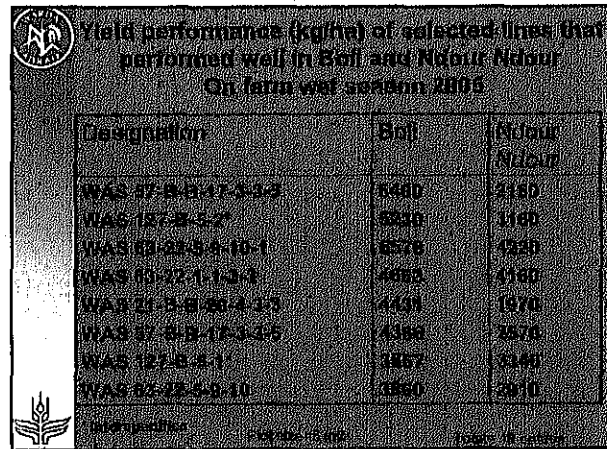
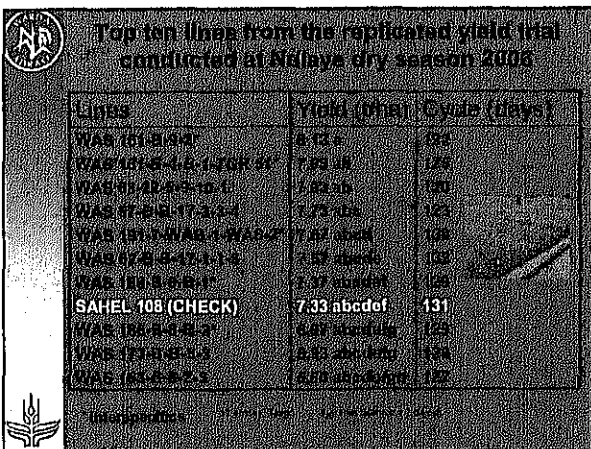
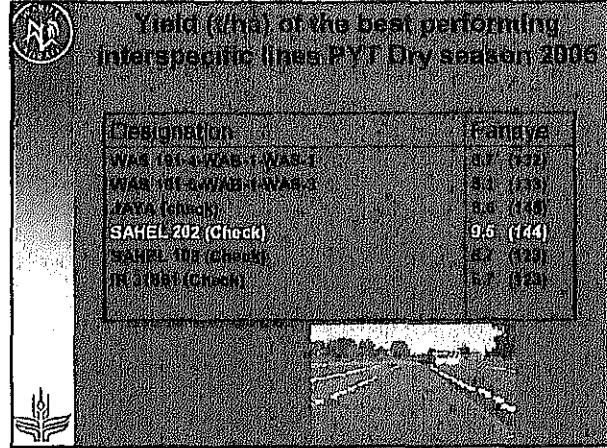
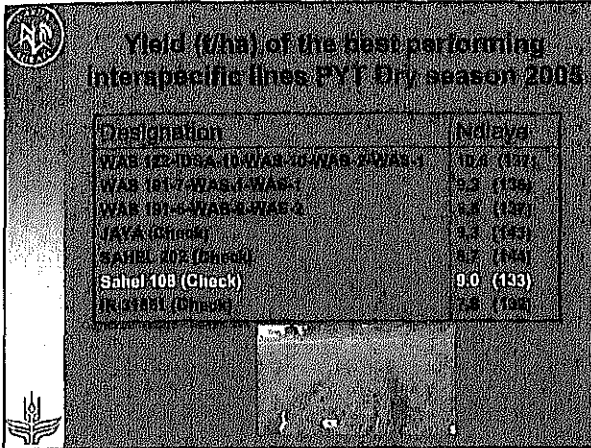
Designation	Penayo	Ndaya
WAS 161-B-4-B-1	7.5 (110)	7.9 (114)
WAS 161-B-4-B-2	5.7 (108)	5.4 (117)
WAB 161-B-2	7.4 (118)	6.7 (116)
WAS 161-B-4-B-3	7.4 (110)	
WAS 161-B-4-B-4	7.1 (110)	6.4 (108)
WAS 161-B-4-B-5	6.7 (111)	6.1 (107)
WAS 161-B-4-B-6	6.7 (110)	6.2 (110)
WAS 161-B-4-B-7	6.5 (107)	6.1 (111)
SAHEL 202 (check)	7.8 (117)	5.6 (124)

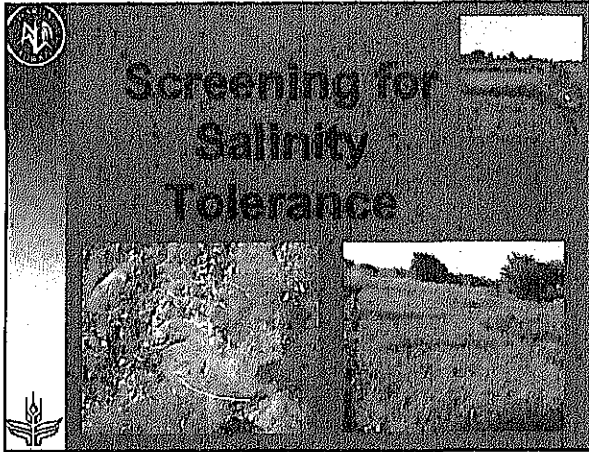
Yield (t/ha) of the best performing interspecific lines PYT wet season 2004

Designation	Mean
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-1	7.9 (113)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-2	7.9 (113)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-3	7.1 (112)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-4	7.1 (112)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-5	6.9 (110)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-6	6.9 (110)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-7	6.9 (110)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-8	6.9 (110)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-9	6.9 (110)
WAS 122-1DSA-10-WAS-10-WAB-2-WAS-10	6.9 (110)
JAYA (CHECK)	7.5 (117)
JAYA 202 (CHECK)	6.7 (108)
JAYA 202 (CHECK)	6.7 (108)

Yield (t/ha) of the best performing interspecific lines PYT wet season 2004

Designation	Mean
WAS 191-4-WAB-1-WAS-1	8.1 (122)
WAS 191-4-WAB-1-WAS-2	8.1 (122)
WAS 191-4-WAB-1-WAS-3	8.1 (122)
WAS 191-4-WAB-1-WAS-4	8.1 (122)
SAHEL 108 (CHECK)	8.2 (113)
IR 31051 (CHECK)	8.2 (112)
IR 31051 (CHECK)	8.2 (112)



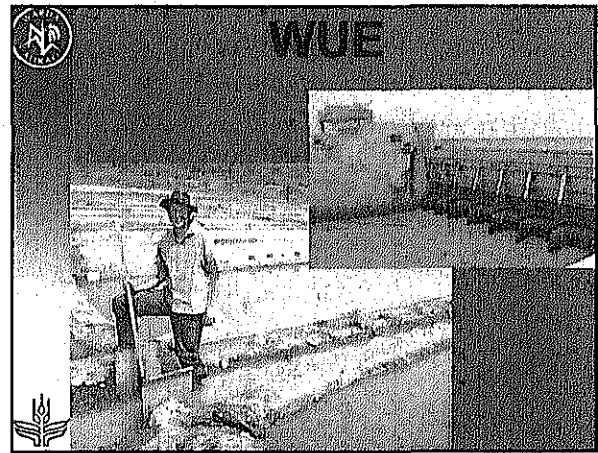


Yield Performances in kg/ha of selected materials for salinity tolerance - Nilaye Dry season 2005

Material	Grain yield	Stubble yield	Yield (total) kg/ha
Control	10.2	2.3	12.5
WAS 161-B-4-B-2*	8.9	5.3	14.2
WAS 122-IDSA-10-WAS-10-WAB-WAB-2-WAS-1*	7.5	6.2	13.7
WAS 101-10-4-FKR 1*	7.2	4.7	11.9
WAS 101-10-4-FKR 1-TGR 123*	7.2	4.5	11.7
WAS 122-IDSA-10-WAS-7-2-FKR1-TGR 6*	6.9	4.2	11.1
WAS 122-4-2*	6.4	4.0	10.4
WAS 122-IDSA-10-WAS1-1-FKR 1*	5.9	4.7	10.6

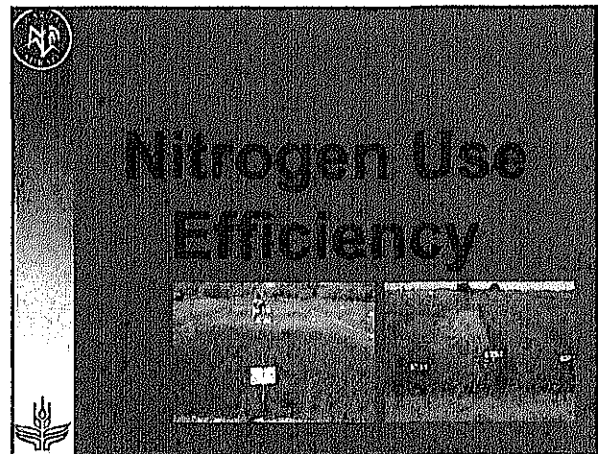
Yield Performances in kg/ha of selected materials for salinity tolerance - Nilaye Wet season 2005

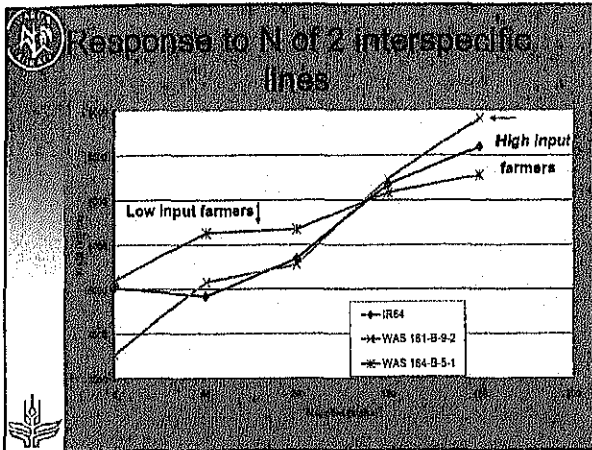
Material	Grain yield	Stubble yield	% of Water use
Control	1118	1467	100
WAS 101-10-4-FKR 1*	5722	5038	12
WAS 122-IDSA-10-WAS-10-WAB-2-WAS-1*	6209	4451	15
WAS 122-IDSA-11-WAS 8-2*	5098	4675	8
WAS 122-IDSA-10-WAS1-1-FKR 1*	5004	4866	3



Water saving irrigation at Faraye Dry season 2006

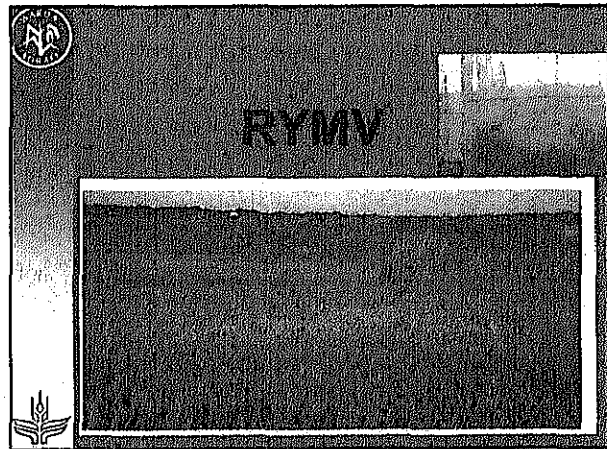
Material	Grain yield	Stubble yield
WAS 122-IDSA-11-WAS 8-2*	1745	1773
WAS 122-IDSA-10-WAS1-1-FKR 2*	1621	1613
WAS 122-IDSA-10-WAS1-1-FKR 2*	1625	1625
WAS 122-IDSA-10-WAS1-1-FKR 2*	1621	1748
WAS 122-IDSA-10-WAS1-1-FKR 2*	1621	1748





Interspecific lines resistant to AFRGM

Designation	Yield (t/ha) 2004	Yield (t/ha) 2005	Average
WAS 166-B-8-B-1-WAB-2-WAS-1	2.6	2.9	2.75
WAS 171-B-10-B-1-WAB-2-WAS-1	1.5	1.6	1.55
WAS 166-B-8-B-1-WAB-2-WAS-1	12.1	11.7	11.9
WAS 166-B-8-B-1-WAB-2-WAS-1	11.1	11.3	11.2
WAS 166-B-8-B-1-WAB-2-WAS-1	10.3	10.5	10.4
WAS 171-B-10-B-1-WAB-2-WAS-1	22.5	23.2	22.85
WAS 166-B-8-B-1-WAB-2-WAS-1	11.3	11.1	11.2
WAS 166-B-8-B-1-WAB-2-WAS-1	11.7	11.5	11.6
WAS 166-B-8-B-1-WAB-2-WAS-1	11.7	11.5	11.6
TOS 14610 (RES. CHECK)	2.07	3.74	2.91
ITA 300 (sus. Check)	60.00	60.57	60.28



Best interspecific lines selected for RYMV resistance in Niono Mali in 2002 under artificial inoculation

WAS 164-B-5	
WAS 164-B-7	
WAS 122-DSA-1-WAB-2	
WAS 122-DSA-3-WAB-2	
WAS 122-DSA-10-WAB-2	
WAS 122-DSA-11-WAB-2	
WAS 122-DSA-12-WAB-2	
WAS 122-DSA-13-WAB-2	
WAS 122-DSA-14-WAB-2	
WAS 122-DSA-15-WAB-2	

Conclusion: Varietal Release

Designation	Country
WAS 164-B-5	Mali
WAS 164-B-7	Mali
WAS 122-DSA-1-WAB-2	Senegal
WAS 122-DSA-3-WAB-2	Senegal
WAS 122-DSA-10-WAB-2	Senegal
WAS 122-DSA-11-WAB-2	Senegal
WAS 122-DSA-12-WAB-2	Senegal
WAS 122-DSA-13-WAB-2	Senegal
WAS 122-DSA-14-WAB-2	Senegal
WAS 122-DSA-15-WAB-2	Senegal


Future

Environnement durable et qualité de vie pour tous
 (Quality of life for all)

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Thank you Merci



Status of Irrigated NERICA Development and Dissemination

Karim Traore
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Mohamed Kebbeh
Michiel de Vries

WARDA - Sahel Station

JAICAF-WARDA-JICA JOINT SEMINAR ON NERICA DISSEMINATION IN
AFRICA 2006

Accra 6-8 December 2006

Background

- Interspecific Breeding Activities started at WARDA Saint Louis in 1996
 - 74 different crosses were made
 - 10 glaberrima parents were used
 - Nearly 100 sativa parents including lines from IRRI, CIAT, etc.
- 2 approaches:
- In situ selection at Ndiaye and Fanaye in Senegal
 - Shuttle breeding (Burkina Faso, Côte d'Ivoire, Mali and Togo)

List of glaberrima parents used in the different crosses

1	Tog 2552
2	Tog 5672
3	Tog 5673
4	Tog 5674
5	Tog 5675
6	Tog 5681
7	Tog 5682
8	Tog 7235
9	Tog 7291
10	Tog 7292

Breeding objectives are:

- High Yield
- Salinity
- Disease Resistance : RYMV, BLB
- Insect (AfrGM)
- Iron toxicity
- Weed competitiveness
- Short Duration
- Extreme temperatures
- Grain Quality
- WUE
- NUE

Germplasm exchange between WARDA Saint Louis and the different NARS

Institute	1999	2000	2001	2002	2003	2004	
Benin INRAB				21			21
Burkina F INERA				52	9		61
Cote d'Ivoire IDESSA	17	475					492
Gambia NARI						20	20
Japan/JICA					10		10
Mali IER	5				42		47
Niger INRAN				21			21
Togo DNRA INCV				101			101
Uganda NARI						10	10
Total	22	950		195	61	30	1258

Yield (t/ha) of the best performing interspecific lines ON Dry season 2002

Designation	Fanaye	Ndiaye	Mean
WAS 161-B-4-B-1	10.5	6.9	8.7
WAS 161-B-2-B-1	9.5	6.6	8.05
WAS 161-B-9-2	9.4	6.6	8.0
WAS 122-IDSA-4-WAS-9-1	9.4	5.5	7.45
WAS 122-IDSA-10-WAS-4-3	9.3	6.2	7.75
WAS 122-IDSA-10-1-1	9.0	7.0	8.0
WAS 131-IDSA-1-WAS-4-B-1	8.6	6.9	7.75
WAS 122-IDSA-10-WAS-4-2	8.2	7.8	8.0
WAS 122-IDSA-10-WAS-5-4	8.0	6.3	7.15
WAS 127-B-5-B-1	7.9	5.3	6.6
SAHEL 108 (CHECK)	10.4	6.3	8.35
IR 64 (CHECK)	8.1	6.5	7.3
IR 31851(CHECK)	7.6	6.3	6.95

Plot size= 4.84 m2 for all ON trials

The fertilizer rate is 120N-60P-60K for all yield trials.

Yield (t/ha) of the best performing interspecific lines ON wet season 2003-Fanaye

Designation	Crop duration	Yield
WAS 191-7-WAB-1-WAS-2	107	9.5
WAS 187-WAB-1-WAS-1	115	9.3
WAS 122-IDSA-1-WAS-3-WAB-1-WAS-1	114	9.1
WAS 183-3-WAB-3-WAS-1	107	8.9
WAS 187-2-WAB-1-WAS-1	114	8.6
WAS 122-IDSA-1-WAS-1-WAB-1-WAS-1	116	8.4
WAS 122-IDSA-10-WAS-10-WAB-2-WAS-1	107	8.4
WAS 126-WAB-5-WAS-3-WAB-1-WAS-1	109	8.3
WAS 122-IDSA-10-WAS-10-WAB-5-WAS-1	107	8.2
WAS 122-IDSA-10-WAS-5-WAB-1-WAS-2	111	8.1
WAS 191-WAB-1-WAS-1	112	8.1
SAHEL 108 (CHECK)	112	8.4
JAYA (CHECK)	120	7.7

Yield (t/ha) of the best performing interspecific lines PYT wet season 2003

Designation	Fanaye	Ndiaye
WAS 161-B-6-4-FKR-1	7.8 (113)	5.6 (114)
WAS 161-B-6-B-3-1	7.7 (115)	5.4 (117)
WAS 161-B-9-3-FKR-1	7.3 (115)	5.7 (115)
WAS 127-IDSA-2-WAS-3-5-FKR-1	7.2 (110)	-
WAS 191-B-1-FKR-1	7.3 (112)	5.1 (109)
WAS 161-B-6-B-1	6.7 (111)	5.1 (107)
JAYA (check)	6.3 (118)	5.5 (119)
SAHEL 108 (check)	6.6 (106)	5.3 (101)
SAHEL 202 (check)	7.8 (117)	5.6 (124)

The plot size for all RYT is 7.04m²

Numbers between brackets indicate the crop duration in days.

Yield (t/ha) of the best performing interspecific lines ON wet season 2004

Designation	Ndiaye
WAS 122-IDSA-10-WAS-1-1-FKR 1	9.0 (114)
WAS 122-7-3	8.7 (119)
WAS 122-7-5	8.7 (119)
WAS 191-1-7-TGR 90	8.6 (116)
WAS 122-7-2	8.3 (123)
WAS 122-IDSA14-WAS B-FKR 1	8.0 (124)
WAS 126-1-1	7.9 (116)
WAS 122-IDSA-10-WAS-3-1-TGR 3	7.8 (110)
WAS 186-B-8-B-2	7.8 (115)
WAS 161-B-6-B-1	7.8 (122)
SAHEL 108 (check)	7.5 (108)
SAHEL 202 (check)	6.7 (130)
JAYA (check)	8.3 (123)
IR 31851 (check)	5.3 (110)

Yield (t/ha) of the best performing interspecific lines ON wet season 2004

Designation	Fanaye
WAS 122-IDSA 14-WAS B-FKR 1	9.6 (120)
WAS 127-IDSA 2-WAS 3-6-FKR 1	7.9 (116)
WAS 122-7-2	7.6 (118)
WAS 191-9-WAB-B-TGR 24	7.4 (118)
WAS 191-8-1-FKR 1	7.1 (121)
WAS 122-IDSA 13-WAS 13-3-3-FKR 1	7.1 (112)
JAYA (check)	5.6 (125)
SAHEL 202 (check)	5.2 (127)
IR 31851 (check)	4.7 (112)
SAHEL 108 (check)	4.4 (112)

Yield (t/ha) of the best performing interspecific lines PYT wet season 2004

Designation	Ndiaye
WAS 122-JDSA-10-WAS-10-WAB-2-WAS-1	7.9 (113)
WAS 187-7-WAB-1-WAS-1	7.8 (114)
WAS 127-IDSA-10-WAS-5-WAB-1-WAS-2	7.1 (112)
WAS 187-2-WAB-1-WAS-1	7.1 (113)
WAS 191-7-WAS-1-WAS-1	6.9 (112)
SAHEL 108 (CHECK)	6.9 (109)
JAYA (CHECK)	7.5 (117)
SAHEL 202 (CHECK)	6.5 (125)
IR 31851 (CHECK)	6.7 (106)

Yield (t/ha) of the best performing interspecific lines PYT wet season 2004

Designation	Fanaye
WAS 191-4-WAB-1-WAS-1	8.1 (122)
WAS 122-IDSA-10-WAS-10-WAB-2-WAS-1	7.9 (118)
WAS 191-7-WAB-1-WAS-2	7.7 (131)
SAHEL 108 (CHECK)	8.2 (113)
JAYA (CHECK)	7.6 (123)
SAHEL 202 (CHECK)	6.6 (126)
IR 31851 (CHECK)	8.2 (112)

Yield (t/ha) performance of the best performing interspecific lines ON Dry season 2005

Designation	Ndiaye
WAS 126-B-8-1-FKR-1-TGR 96	10.7 (136)
WAS 161-B-6-B-1	10.7 (140)
WAS 122-IDS A 11-WAS 8-2	10.4 (137)
WAS 186-B-8-B-2	10.3 (139)
WAS 191-1-5-FKR 1	10.3 (142)
WAS 161-B-1-1-FKR 1	10.1 (139)
WAS 161-B-2-B-2	10.0 (154)
WAS 161 161-B-4-B-2	9.4 (140)
WAS 191-8-1-FKR 1	9.3 (142)
WAS 161-B-4-B-1-TGR 51	9.3 (138)
SAHEL 202 (CHECK)	10.5 (145)
SAHEL 108 (CHECK)	8.5 (132)
JAYA (CHECK)	7.6 (149)
IR 31851	6.5 (128)

Yield (t/ha) performance of the best performing interspecific lines ON Dry season 2005

Designation	Fanaye
WAS 122-IDS A 13-WAS 10-FKR 1	12.6 (129)
WAS 161 B-2-B-2	12.2 (140)
WAS 161-B-6-B-1	11.4 (136)
WAS 161-B-6-B-4	11.0 (145)
WAS 161-B-2-B-4	10.9 (137)
WAS 186-B-6-B-1	10.7 (139)
WAS 161-B-2-B-3	10.7 (140)
WAS 161-B-9-1-FKR 1	10.4 (129)
JAYA (check)	10.2 (143)
SAHEL 108 (CHECK)	8.1 (123)
SAHEL 202 (CHECK)	8.9 (141)
IR 31851 (CHECK)	8.1 (123)

Yield (t/ha) of the best performing interspecific lines PYT Dry season 2005

Designation	Ndiaye
WAS 122-IDS A-10-WAS-10-WAB-2-WAS-1	10.6 (137)
WAS 191-7-WAS-1-WAS-1	9.2 (136)
WAS 191-5-WAB-2-WAS-2	8.8 (137)
JAYA (Check)	9.3 (143)
SAHEL 202 (Check)	8.7 (144)
Sahel 108 (Check)	9.0 (133)
IR 31851 (Check)	7.8 (132)

Yield (t/ha) of the best performing interspecific lines PYT Dry season 2005

Designation	Fanaye
WAS 191-4-WAB-1-WAS-1	8.7 (132)
WAS 191-5-WAB-1-WAS-3	8.1 (133)
JAYA (check)	8.6 (145)
SAHEL 202 (Check)	9.5 (144)
SAHEL 108 (Check)	6.7 (123)
IR 31851 (Check)	6.7 (123)

Selected entries that out yielded the best performing check at Ndiaye dry season 2006 in ON

Entries	Yield t/ha	Cycle (days)	Height (cm)
WAS 122-7-6-2-1*	10.2	126	105
WAS 127-2-1-3-3*	9.1	134	107
WAS 126-1-1-2-1*	9.0	126	104
WAS 208-B-B-5-1-3	9.0	126	83
WAS 199-B-B-1-3-2	8.9	131	102
IKP (CHECK)	8.8	129	95

Top ten lines from the replicated yield trial conducted at Ndiaye dry season 2006

Lines	Yield (t/ha)	Cycle (days)
WAS 161-B-9-2*	8.13 a	122
WAS 161-B-4-B-1-TGR 51*	7.93 ab	125
WAS 63-22-5-9-10-1	7.93 ab	120
WAS 57-B-B-17-3-3-4	7.73 abc	123
WAS 191-7-WAB-1-WAS-2*	7.67 abcd	130
WAS 62-B-B-17-1-1-3	7.57 abcde	132
WAS 186-B-6-B-1*	7.37 abcdef	129
SAHEL 108 (CHECK)	7.33 abcdef	131
WAS 186-B-8-B-2*	6.97 abcdefg	129
WAS 173-B-B-5-3	6.93 abcdefg	129
WAS 183-B-6-2-3	6.90 abcdefgh	122

Yield performance (kg/ha) of selected lines that performed well in Boli and Ndour Ndour
On farm wet season 2005

Designation	Boli	Ndour Ndour
WAS 57-B-B-17-3-3-5	6400	2160
WAS 127-B-5-2*	5230	3160
WAS 63-22-5-9-10-1	5578	4220
WAS 63-22-1-1-3-3	4663	4160
WAS 21-B-B-20-4-3-3	4431	1970
WAS 57-B-B-17-3-3-5	4366	2570
WAS 127-B-5-1*	3867	3340
WAS 63-22-5-9-10	3860	2910

*interspecifics plot size = 5 m2 Total entries= 19

Best interspecific lines selected in The Gambia PVS Dry Season 2004

Designation	Duration days	Yield (kg/ha)
WAS 161-B-6-3-FKR-1	126	9825
WAS 122-IDSA-10-WAS-4-4	126	9125
WAS 122-IDSA-15-WAS-6-1 +	119	8750
WAS 122-IDSA-10-WAS-4-2	118	8188
WAS 161-B-9-2 +	124	8125
WAS 122-IDSA-10-WAS-3-4-FKR-1	132	7125
IR 64 (check)	130	8375
ITA 212 (check)	135	7500

+ released in The Gambia Plot size= 5m2

Best interspecific lines selected in The Gambia PVS Dry Season 2005

Designation	Duration days	Yield (kg/ha)
WAS 191-4-WAB-1-WAS-1	131	6500
WAS 187-2-WAB-1-WAS 1	128	6100
WAS 191-1-7-TGR-90	136	5500
WAS 161-B-2-B-1	128	5500
WAS 161-B-9-2 (CHECK)	127	5000

Plot size= 5m2

Yield Performances in kg/ha of selected materials for salinity tolerance –Ndiaye Dry season 2005

Designation	Fresh water	Saline water	Yield reduction %
IKP (CHECK)	10.9	5.6	49
D 14	10.5	6.6	37
WAS 161-B-4-B-2*	8.9	5.3	40
WAS 198-B-B-2	8.4	5.4	36
WAS 199-B-B-2	8.2	5.8	29
WAS 122-IDSA-10-WAS-10-WAB-WAB-2-WAS-1*	7.5	5.2	30
IR 31785 (SUSC. CHECK)	7.5	0.4	95
WAS 30-11-1-4-6-2-1B	7.4	4.6	39
WAS 191-10-4-FKR 1*	7.2	4.7	35
WAS 191-10-4-FKR 1-TGR 123*	7.2	4.5	37
IR 64197-3B-14-1	7.0	5.1	26
WAS 122-IDSA-10-WAS-7-2-FKRI-TGR 8*	6.9	4.2	40
WAS 174-B-6-1	6.9	5.5	21
WAS 122-4-2*	6.4	4.6	29
WAS 44-B-B-223-4	6.2	5.3	13
WAS 122-IDSA 10-WAS1-1-FKR 1*	5.9	4.7	13

*interspecifics

Yield Performances in kg/ha of selected materials for salinity tolerance –Ndiaye Wet season 2005

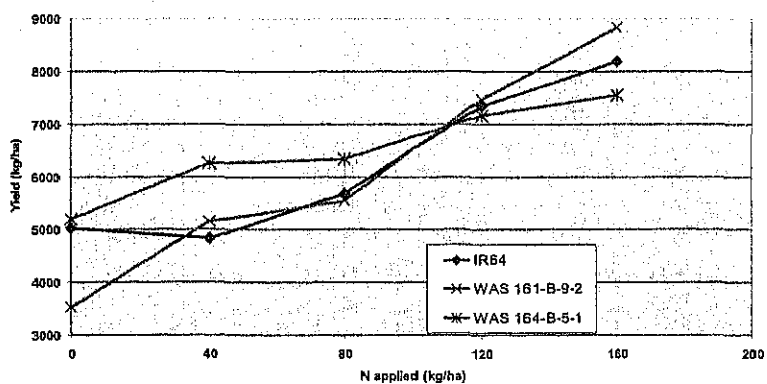
Designation	Fresh water	Saline water	Yield reduction %
WAS 208-B-1	6335	5160	19
WAS 73-B-B-231-4	5959	5047	15
WAS 191-10-4-FKR 1*	5722	5038	12 intersp.
IR 63731-1-1-1-4-2	5470	4819	12
WAS 73-B-B-231-2	5319	4841	9
WAS 122-IDSA-10-WAS 10-WAB-2-WAS 1*	5209	4451	15 intersp.
WAS 182-B-1-1	5204	4998	4
WAS 207-B-B-3	5186	4858	6
WAS 122-IDSA-11-WAS 8-2*	5096	4675	8 intersp.
WAS 122-IDSA-10-WAS1-1-FKR 1*	5004	4866	3 intersp.
IR 4630 (RES CHECK)	4320	3652	15
IKP (RES CHECK)	6061	4683	23
IR 31 785 (SUSC CHECK)	4165	1561	63
SAHEL 108	6536	4521	31
WAS 183-B-6-2-2	4427	416	91
WAS 206-B-1	3703	3663	1

* interspecifics

Water saving irrigation at Fanaye Dry season 2006

	0 cm water	10-20 cm water
WAS 124-B-3-4-FKR-1*	7282	7773
WAS 161-IDSA-3-3-WAS B-IER-2-4*	6551	9113
WAS 57-B-B-17-3-3-6-TGR-20	6505	7996
WAS 136-WAB-5-WAS-3-WAB-3-WAS-1	6483	7796
WAS 186-B-8-B-2*	5995	7940

*interspecifics



Response to N of 2 interspecific lines

It can be concluded that WAS 161-B-9-2 and IR64 are suitable for high input and WAS 164-B-5-1 is suitable for low input.

Interspecific lines resistant to AfRGM

Designation	%tiller infest. 2004	% tiller infest. 2005	Average
WAS 186-B-8-B-1-WAB-2-WAS-1	9.5	22.3	15.9
WAS 127-IDSa-2-WAS-1-1-1	16.7	18.5	17.6
WAS 186-B-8-B-1-WAB-1-WAS-5	18.5	21.7	20.1
WAS 186-B-8-B-1-WAB-1-WAS-3	19.5	17.8	18.7
WAS 186-B-8-B-1-WAB-1-WAS-4	19.5	19.0	19.3
WAS 127-IDSa-12-WAS-11-3-1	23.5	20.5	22.0
WAS 127-IDSa-12-WAS-11-3-2	27.5	20.1	23.8
WAS 186-B-8-B-1-WAB-1-WAS-2	28.5	17.6	23.1
WAS 186-B-8-B-1-WAB-1-WAS-1	29.6	21.1	25.4
TOS 14519 (RES. CHECK)	2.07	3.74	2.91
ITA 306 (susc. Check)	50.06	50.57	50.32

Best interspecific lines selected for RYMV resistance in Niono Mali in 2002 under artificial inoculation

WAS 164-B-5

WAS 164-B-7

WAS 122-IDSa-1-WAS-8-2

WAS 122-IDSa-5-WAS-5-2

WAS 122-IDSa-10-WAS-7-4

WAS 122-IDSa-13-WAS-2-2

WAS 122-IDSa-13-WAS-6-2

WAS 126-IDSa-4-WAS-3-2

WAS 187-B-1-2

Gigante and TOG 5681 are sources of resistance identified by WARDA

Conclusion-Varietal Release

Designation	Country
WAS 122-IDSa-1-WAS-6-1 (FKR 62NO)-NERICA-L-19	Burkina Faso
WAS 122-IDSa-1-WAS-B (FKR 60N)-NERICA-L-20	
WAS 161-B-9-3 (FKR 56N)-NERICA-L-41	
WAS 191-9-3-FKR-1 (FKR 58N)-NERICA-L-60	
WAS 122-IDSa-15-WAS-6-1	The Gambia
WAS 161-B-9-2	
WAS 122-IDSa-1-WAS-B (MALI N1)-NERICA-L-20	Mali
WAS 161-IDSa-3-WAS-B-IER-2-4 (MALI N2)-NERICA-L-42	

Future

- Post-harvest and cooking quality assessment (e.g. Quality laboratory in Ndiaye)
- Further hot spot screening for biotic and abiotic stresses (e.g. iron toxicity, alkalinity, etc.)
- Enhance PVS activities in the lowland continuum (more locations in Senegal and more countries to cover in Africa)
- Seed availability (Breeder seed, foundation seed, training activities)
- High Yield (GxE) Diversify variety choices at farmers' level.

Country L : TANZANIA

THREE YEARS OF NERICA EVALUATION TRIAL

Haki J.M. and Kibanda N.J.M.

Introduction

- Rice is grown under 3 major ecosystems
 - Rainfed/lowland (74%)
 - Upland (20%)
 - Irrigated (6%)
- Importance of upland rice
- Food crop
- Income

Upland Rice Production Constraints

- Lack of acceptable improved varieties
- Weed infestations
- Low soil fertility
- Disease infestation
- Drought incidences (most important)
 - A need for upland drought resistant/tolerant genotypes

A need for drought tolerant/resistant upland rice

- Change for rainfall reliability/inadequate
- Decline in grain yield from the current 0.5t/ha to less
- In 2003, the NRR Sub-Program requested drought tolerant rice seeds from WARDA, received
 - Upland nursery ~ 60 lines
 - Lowland nursery ~ 20 lines
 - Irrigated nursery ~ 20 lines

A need for drought tolerant/resistant upland rice cont.

- In 2005, further received NERICA1: 18 upland seeds from Namulonge, Uganda for multiplication and evaluation

Materials and Methods

- In 2003: Nursery seeds went through phytosanitary at TPRI
- In 2004: Materials evaluated at ARI KATRIN under open quarantine
 - Single plot (1m x 5m) observation dibbled at 25cm x 15cm spacing
- 2005: Materials re-evaluation
 - Single plot (1m x 5m) observation dibbled at 25cm x 15cm spacing

Materials and Methods

- In 2003-2004: N-fertilizer 40-20-20 N-P2O5-K2O5 kg/ha and split twice
 - 20-20-20 N-P2O5-K2O5 kg/ha at 21 DAG
 - 20kg N at panicle initiation (PI) stages
- Other standard agronomic practices observed
- Results
 - 12 elite lines selected

7

Materials and Methodology

- In 2006: Twelve selected elite lines evaluated in a replicated trial
- 3 Replications
- Dry seeding (dibbling) in 2m x 5m plot size
- Spacing: 25cm x 15cm
- Fertilization: 40-40-20 N-P2O5-K20 kg/ha
- 20-20-20 N-P2O5kg/ha split twice at 21 DAG and 45 DAG

8

Materials and Methodology

- All other agronomic practices were observed.
- Treatments
 - NERICA 1, NERICA 2, NERICA 3, NERICA 4, NERICA 5, NERICA 6, NERICA 7, WAB 450-12-2-BL1-DV4, WAB 450-1-B-P-124-1-1, WAB 450-1-B-P-74-1-1, WAB 450-12-2-BL1-DR3, WAB 450-15-3-P8-2-1-1 and LUNYUKI (check)

9

Materials and Methodology

- Data collected-
- Number of tillers/hill (26 and 56DAS and at maturity), plant height (cm) at maturity, days to 50% flowering , number of panicles/hill, panicle length, grain number/panicle, % filled grains, 1000-grain weight (g), grain length (cm), grain shape and yield.

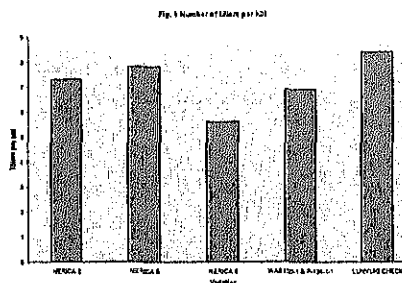
10

Materials and Methodology

- Germination date, plant height, number of tillers/hill, 50% flowering and yield components were collected from 20 hills whereas yield were collected from 3m.sq. crop cut.

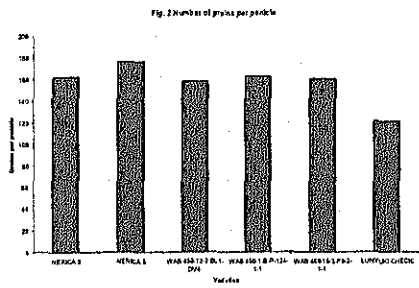
11

Results



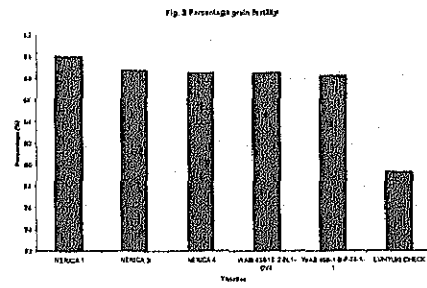
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Results cont..



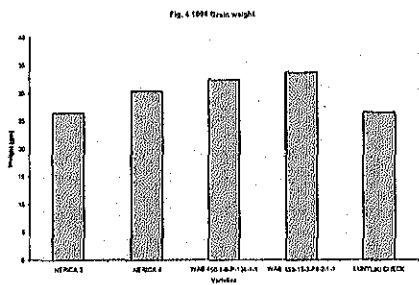
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Results cont..



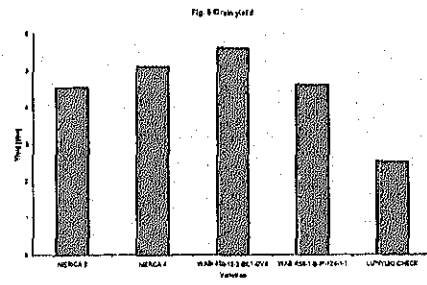
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Results cont..



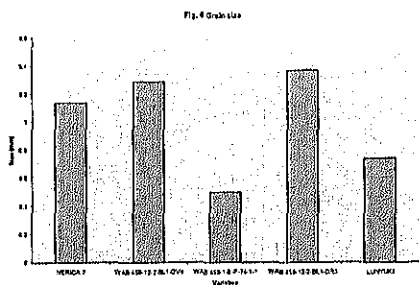
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Results cont..



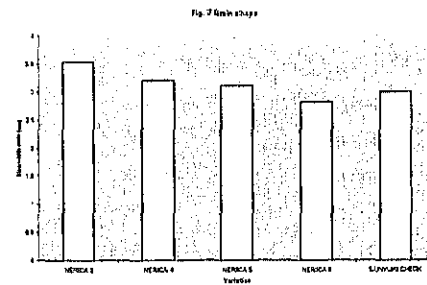
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Results cont..



17

Results cont..



18

Results

- Inconsistent ranking in all the traits evaluated within and across years
- All rice genotypes have acceptable physical grain qualities
- NERICA 1 is aromatic
- Pooled high mean yields were from WAB 450-12-2-BL1-DV4 (5.6t/ha), NERICA 4 (5.1t/ha), NERICA 7 (4.5t/ha), NERICA 2 (4.54t/ha) and NERICA 3 (4.44t/ha)

Conclusion

- It is proposed that WAB 450-12-2-BL1-DV4 (5.6t/ha), NERICA 4 (5.1t/ha), NERICA 7 (4.5 t/ha), NERICA 2 (4.54t/ha), NERICA 3 (4.44t/ha) and NERICA 1 (3.58t/ha) be advanced for on-farm testing and evaluation for they are
 - Have high yield grain performance
 - Acceptable physical grain qualities
 - Resistance to drought and non-lodging

Conclusion cont.

- Non-sensitivity to photoperiod
- Tolerant to insect pests and diseases
- NERICA 1 is an aromatic genotype

Problems and Constraints

- Insufficient funds
- Delayed disbursement
- Lack of research equipments such as seed moisture metre, sensitive weighing balance, seed counter and seed sizer

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• THANK YOU