

Rice biotechnology in Egypt

Balal M.S.

in

Clément G. (coord.), Cocking E.C. (coord.).
FAO MedNet Rice: Breeding and Biotechnology Groups: Proceedings of the Workshops

Montpellier : CIHEAM

Cahiers Options Méditerranéennes; n. 8(2)

1994

pages 59

Article available on line / Article disponible en ligne à l'adresse :

<http://om.ciheam.org/article.php?IDPDF=CI020567>

To cite this article / Pour citer cet article

Balal M.S. **Rice biotechnology in Egypt**. In : Clément G. (coord.), Cocking E.C. (coord.). *FAO MedNet Rice: Breeding and Biotechnology Groups: Proceedings of the Workshops*. Montpellier : CIHEAM, 1994. p. 59 (Cahiers Options Méditerranéennes; n. 8(2))



<http://www.ciheam.org/>
<http://om.ciheam.org/>

Rice Biotechnology in Egypt

Mohamed Sayed Balal

Agricultural Research Center, Giza (Egypt)

Many areas in biotechnology could be useful for varietal improvement, one of them is the haploid culture technique. Anther culture was developed to accelerate the production of homozygous genotypes. This technique has attracted wide attention of plant breeders because it is the quickest method of advancing heterozygous breeding to homozygosity and increases selection efficiency. In addition to these advantages, anther culture allows the early expression of recessive genes.

In Egypt utilization of anther technique has been in practice in collaboration with IRRI since 1990. Many anther culture derived lines have been developed and used in the breeding programme either in yield tests or in crossing (*Table 1*).

In 1992, ten crosses were plated, 80 lines were tested and 12 out of them were promoted to yield trials. Some of them performed well and were used in crossing programmes (*Table 2*).

In 1993, 450 lines were tested in an observation nursery and 11 out of them were selected for yield evaluation in 1994. In addition to this we have plated in 1994 anthers of 10 crosses and obtained 147 lines. These lines will be evaluated in an observational nursery.

Table 1. Volume of anther cultured crosses, RRTC-Sakha, 1990-93

Season	No. of crosses	No. of lines	Selected	Utilization
1990	10	100	5	Yield and crossing
1991	20	1660	20	Yield and crossing
1992	10	80	12	Yield and crossing 1993
1993	9	450	73	Yield and crossing 1994
1993	10	147	—	Evaluation in 1994

Table 2. Performance of some promising anther culture derived lines during 1992 and 1993

Cross	Acc. No.	Year	Yield (t/ha)	Heading (days)	Plant height	Blast	Remarks
GZ 1368-5-4	Check	1992	9.10	103	110	2	High amylose
GZ 1368-5-4/Milyang 49	AC-1223	1992	9.18	99	100	2	Low amylose
GZ 1368-5-4/Milyang 49	1224	1992	8.60	99	98	2	Salt tolerance
GZ 1368-5-4/Milyang 49	1225	1992	8.51	95	99	2	Salt tolerance
Giza 176/Zhong Hoa 3	56	1993	Under	93	83	2	Blast
GZ 4120-205/ZHong Hoa 3	117	1993	Evaluate	92	105	2	Resistant
GZ 4120-205/ZHong Hoa 3	119	1993		91	103	2	Good
GZ 4196-36/GZ 4120-205	185	1993		86	116	2	Plant
GZ 4565-5-10/BL 1	221	1993		96	118	2	Type
GZ 4565-5-10/BL 1	216	1993		104	114	2	
GZ 4565-5-10/BL 1	219	1993		99	123	2	
GZ 4565-5-10/BL 1	238	1993		9	104	2	
GZ 4565-5-10/BL 1	242	1993		94	119	2	
GZ 4565-5-10/BL 1	412	1993		93	120	2	
Giza 176/GZ 3709-7	421	1993		92	112	2	

Table 2. Performance of some promising anther culture derived lines during 1992 and 1993