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EVALUATION OF SOME BARLEY VARIETIES AGAINST MAJOR DISEASES IN THE NORTHWESTERN COASTAL REGION

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Abstract

Although a considerable effort has been made in developing resisant barley varieties, large losses often result from major diseases (Leaf rust, net blotch, powdery mildew, and stripe diseases) and a search for sources of such resistance is quite important for developing new resistant cultivars.

The reaction of these diseases were observed on 200 entries at both seedling and adult stages. Resistance to leaf rust was exhibited by 102 barley varieties and lines, 51 proved highly resistante to net blotch, 22 maintained high level of resistance to powdery mildew, and 125 showed considerable resistance to stripe disease.

Entries possessing good resistance might be expected to have considerable value in breeding progammes.

INTRODUCTION

In Egypt, barley fungal diseases account for great losses in yield and influencing quality of the grain. Survey revealed that leaf rust (*Puccinia hordei*), powdery mildew (*Erysiphe graminis hordei*), net blotch (*Drechslera teres*), and stripe disease (*D.graminea*) are the main diseases which attack barley during the growing season.

The ultimate means for controlling these diseases is through the use of resistant cultivars which exhibit a high level of resistance to all / or to most common

physiologic races of each causal organism even under adverse climatic conditions.

Varietal resistance to these diseases has been studiedy by many investigators, e.g. Newton and Cherewick (1947) and Moseman (1972) in the USA; Hermansen (1968) in Denmark; Caddel (1976) in Morocco, Ghobrial and Shafik (1982), Ghobrial *et al.* (1976, 1977, 1982 and 1984), Ghanem *et al.* (1984) and Rizk *et al.* (1984) in Egypt to assist barley breeders in selecting suitable materials for breeding programes.

The objective of this work was to study the resistance of barley genotypes under greenhouse and field conditions in the northwestern coastal region of Egypt.

MATERIALS AND METHODS

The materials tested in this study included 200 entries selected from local and exotic genotypes. In the greenhouse tests, grains of each genotype were grown in 1988/89 in 5-inch clay pots in four replicates. Seedlings (8 days old) were inoculated with a mixture of common physiologic races of each organism.

Field trials were conducted in 1988/89 at three locations (Nubaria, El-Kasr, and Abo-Lahow) where severe natural infection with these diseases was relied upon during the course of this study. Grains were grown in single 3.5 m long rows, 30 cm apart. Checks of local and commercial varieties were included through the nurseries and as borders to insure fungal infection.

Readings for leaf rust under greenhouse conditions were recorded 13-15 days following inoculation on a scale of 0-4 (Abdel-Hak *et al.*, 1975). In the field trials, reedings were recorded while the leaves were still green about three weeks after the majority of varieties headed as severity (quantity of infection as judged by percentage of leaf surface covered with infection) and as response (quality of phenotype of infection). Severity was recorded according to modified cobb scale (Peterson *et al.* 1948). The response of a variety was carried out as adopted by Newton et al. (1945) with slight modifications (Ghobrial *et al.* 1976).

Net blotch reaction under greenhouse conditions was observed during 8-12 days after inoculation by using a modification of the scale (0-4) adopted by Khan and Boyd (1969) where plants were rated according to the type of lesions that developed on leaves. In the field, readings were made about 2-3 weeks after the majority

of cultivars headed. Notes on late maturing varieties were recorded at complete flowering. The scroring was carried out using a scale of 0-9 (Saari and Prescott, 1975).

Infection types of powdery mildew under greenhouse conditions were recorded 7 days following inoculation on a scale of 0-4 (Moseman, 1956). For adult plants, disease assessment was based on a scale of 0-9 (Saari and Prescott, 1975). This is an estimate of the mean percentage of leaf surface covered with mycelia and leaf yellowing associated with mildew on the top three leaves at growth stage 10.5 on Feekes scale (Large, 1954).

Concerning stripe disease, percenrages of infection were based on count of both striped and healthy plants. Three infection classes were used (Ghobrial et al., 1982).

RESULTS AND DISCUSSION

Rigid screening resulted in elimination of susceptible types of each particular disease. Screening of 200 entries to leaf rust, net blotch, powdery mildew and stripe diseases showed the following results:

1. Leaf Rust :

The resistant entries of this collection (Table 1) were 102; two of them were resistant under greenhouse conditions (Nos 1 and 2), 18 were resistant at adult stage (Nos3-20), and 82 showed resistance during the two stages (Nos 21-102). Many of these varieties and lines showing resistance in the present study confirmed previous results found by Hermansen (1968), Ghobrial *et al.* (1982) and Ghanem *et al.* (1984).

II. Net Blotch :

The resistant entries to net blotch were 51 (Table 2). Out of these, 8 showed good resistance in seedling stage (Nos 1-8), 32 gave resistant reaction at adult stage (9-40), while 11 showed resistance in both stages (Nos 41-51).

Table 1. Barley varieties showed resistance to leaf rust at seedling and adult stages in the greenhouse and in the field at different locations, 1988/89.

Entry No	Name / Pedigree
	Resistant at seedling :
1.	Mzq-Benton x 2762 - Beecher 113.1.20. 6.3.
2.	Giza 121//Goliad-CI8099 1060 /10/4
3.	UC 566.
4.	[(Giza 117 x R.R.801) (Giza 118 x FAO 86)].
5.	Giza 119 x (CM67-Apam x Godiva).
6.	Giza 121 x W.W. Wing.
7.	Badia.
8.	Faiz.
9.	As46/Aths*2 Sel, 21-1AP-3AP-3AP-1AP-0AP.
10.	Nopal "S"-Ager x Wy 6005.18 CMB 79A - 342.
11.	(Aurore x Esp. L21. 1L) x P.276.
12.	DC 89 x CM 67-Apam x Godiva).
13.	L. 370.41. 1-Giza 121.
14.	M 25 (84) Attiki CYB 165 - 14A-2A-1Y-0A.
15.	Giza 117-Asse.
16.	L 366.13.1* Pro-U-Sask 1766 x Avt-Local D8 / Api-CM67xMinn 907.
17.	Martin-Hiproly Tc 73-68.
18.	DMR 27/WI 2197 4AP-3AP-3AP-1AP-1AP-0AP.
19.	F.B. 44. (11016.2 x Apm. IB65/DS-Apro x 11012.2 CMSWB-78A-123.
20.	CI 3909.2 x M 66.151. Manker / Vantmora CMB 79A-342.
	Resistant at both stages :
21.	Nopal "S"-Ager x 67D 1782-2 CMWB-79A - 345.
22.	L 366.13.1 / Ky 63-1294.
23.	81-DG-7431-20 Giza 121.
24.	DC 163*Avt - Local D8 x DL 70 CMB - 74A - 301-22B-1Y-1B-2Y-1Y-0Y.
25.	WI 2197// Esp.1.
26.	DC 29/C 63 ICB 18-0173-6AP-0AP.
27.	Deir Alle 106/Strain 205 ICB77-0099-1AP-0AP.
28.	DC 89.
29.	Giza 123.
30.	Giza 124.
31.	Sutter (2) - Numar UC 76227.
32.	Giza 121 / Puebla ICB-0249-1AP-1AP-1AP-0AP.

Table 1. (Cont.)

Entry No	Name / Pedigree
34.	L 366.13.1/APi-CM67.
35.	DC 163*Avt Local D8 x DL 70 CMB-74A-3010228-1Y-2Y-0M.
36.	Gloria "S" / Copal"S" CMB 81-295-30B-2Y-1M-2Y-0M.
37.	L. 264.4.8./ Nopal "S" ICB 79-420-10AP-1AP-2AP-0AP.
38.	Giza 121/L.366.13.2.
39.	Giza 121/ Strain 205 - Rexa 1L-5AP-0AP.
40.	L. 366.13.1 * CM67-U-Sask 1800 x Pro-CM67/M2q.
41.	Celaya-Cl 3902.2 x 2762-Beecher/Hulles 63.2.20.5.
42.	Prato.
43.	Giza 121/L.366.13.2.
44.	Nigrinudum.
45.	Plata-SV-Mari/Bonus.
46.	L.366.13.1/Badia. Bahtim*Giza 117/Behtim // Giza 118/FA086.
47.	Lignee 640/Badia 131 Suwon No 20// Avt/Aths ICB 82-462.
48.	Antares*2 / Arabic white ICB82-1013.
49.	A554. Tra. Cer*2. Avt*2. Avt*2//B214.vt 15L Pro 16/Lignee 640.
50.	Giza 117. Giza 121. W.W. Wing.
51.	Giza 119//5D729/Por. 2762-BC 10925-17L-5AP-0AP.
52.	Baladi Bahtim//5D 729-Pro/2762. BC.
53.	L. 289.53.2//Tequila. Arimar-2763.
54.	Pcho-P-Dulce "S" CMB83A - 14.
55.	Lignee 642-A557 CMB83A-295.
56.	Impala/Julia//Api ICB 78-1085-2AP-2AP-1AP-0AP.
57.	Cl-08887.Cl5761 SEA-0013-245-35-05.
58.	Harmal-04.
59.	Rihane-06.
60.	Rihane"S"-4.
61.	Rihane"S"-2.
62.	Harma-02//11012-2/CM67 ICB79-0556-3AP-0AP.
63.	DC 29/C 63 ICB78-0173-6AP-0AP.
64.	81-DG-7431-36 Sel-309.
65.	ROD586/Nopal "S" CMB76A-0549-3AP-1AP-2AP-1AP-0AP.
66.	N-Acc 4000-123-80.
67.	CR 115/Por//Strain 205 ICB 78-0049-2AP-1AP-1AP-2AP.
68.	Api/CM67//Mona /3/Dl//Assel/CM65 CMB 78A - 0238-2AP-3AP-0AP.
69.	WI 2269.
70.	Line 4741 Giza 121/Giza120.

Table 1. (Cont.)

Entry No	Name / Pedigree
71.	WI 2197 /CI13520 ICB77-0014-3AP-0AP.
72.	As 46/Aths*2 Sel, 2L, 1AP-3AP-Sel, 2AP-1AP-0APKC.
73.	Assala-04.
74.	Sm 442-Nackla x PYE "S".
75.	WI 2198/Emir CMB 77A-352-3AP-0AP.
76.	Roho/Masurka ICB 77-0170-4AP-5AP-0AP.
77.	Roho/Masurka ICB 77-0170-4AP-2AP-2AP-0AP.
78.	Roho/Delisa ICB 78-0165-2AP-3AP-3AP-1AP-3AP-4AP-0AP.
79.	Aths/4/Pro/Toll//Cer*2 / Toll/3/5/5106 ICB 79-0009-10AP-2AP-0AP.
80.	Cr. 264-4-8/Nopal "S" ICB 79-0420-10AP-1AP-2AP-0AP.
81.	WI 2291/Bags ICB 78-0672-6AP-0AP.
82.	Roho//Alger/Ceres, 362-1-1 ICB 79-1182-1AP-1AP-2AP-3AP-0AP.
83.	H272//WI 2198/ID601810 ICB 77-0014-1AP-2AP-1AP-1AP-0AP.
84.	WI 2197/CI 13520 ICB 77-0014-1AP-1AP-2AP-1AP-0AP.
85.	WI 2291/3/3309/ Attiki//Hva 33 ICB 78-0632-1AP-2AP-0AP.
86.	WI 2291 / Roho ICB 78-643-2AP-1AP-1AP-0AP.
87.	Legia.
88.	Roho/Delisa ICB 78-0165-2AP-6AP-1AP-0AP.
89.	Roho/KV ICB 77-0177-2AP-1AP-1AP-3AP-0AP.
90.	Roho//Alger/Ceres, 362-1-1 ICB 77-0487-1AP-2AP-3AP-4AP-2AP-0AP
91.	WI 2291/WI 2269 ICB 78-0594-10AP-4AP-2AP-1AP-0AP.
92.	WI 2291/WI 2269 ICB 78-0594-9AP-3AP-1AP-0AP.
93.	Pitayo/Cam//Avt/RM 1508/3/ID601810 ICB 78-00145-1AP-3AP-0AP.
94.	WI2291/4/11012-2/70-22425/3/APm/IB65/A16ICB78-0635-1AP-0AP.
95.	Soufara-03.
96.	OP/Zy//Alger/Union, 385-2-2 ICB 78-0976-1AP-2AP-0AP.
97.	Lth/3/Nopal//Pro/11012-2 CMSWB 78A-0044-3AP-6AP-1AP-0AP.
98.	WI 2269.
99.	Roho/Masurka ICB 77-0170-4AP-3AP-1AP-0AP.
100.	B-Volla/WI 2198 CMB 77A-1596-4AP-0SH-1AP-2AP-2AP-0AP.
101.	Mari / Coho// 847-Proctor/Emir.
102.	5819/1420//Aramir CMB 77A-1725-5AP-3AP-0AP.

Table 2 . Varieties showed resistance to net blotch at seedling and adult stages in the greenhouse and in the field at different locations, 1988/89.

Entry No	Name / Pedigree
	Resistant at seedling :
1.	Beecher x (B225xB106).
2.	Mzq-Benton x 2762 - Beecher 113.1.20. 6.2.
3.	Bamboxjo Gall/Api-CM67x11012.2- CMB-74A-1597-E-4B-1Y-1B-0B.
4.	Com 29/C ICB 78-0173-6AP-0AP.
5.	Giza 121/Puebla ICB-0249-1AP-1AP-1AP-0AP.
6.	Antares*2/Arabic white ICB82-1013.
7.	Harmal-04.
8.	Kenya Research /Harma-03 ICB78-0866-4AP-1AP-1AP-3AP-0AP.
	Resistant at adult :
9.	Mzq-Bentonx2762-Beecher 113.1.20.6.3.
10.	Iris-Nopal "S" CMB 77A-0065-1AP-0AP.
11.	81-DG-7431-20 Giza 121.
12.	WI 2197// Esp.1.
13.	L 366.13.1* [(Cn100-D623/FunxFun)2 Tra] x 10925-1-7L-5AP-0AP.
14.	Deir Alla 106/Strain 205 ICB 77-0099-1AP-0AP.
15.	2762H-BC (CM67-U. Sask 1800 x Pro - CM68//DL70) CM 77A-1361.
16.	Giza 124.
17.	Giza 121//Goliad-CI8099 1060/10/4.
18.	Arizona 5908 x Athenias.
19.	Giza 121/L.366.13.2.
20.	Giza 121/ Strain 205-Rexa 1L -5AP-0AP.
21.	L. 366.13.1*CM 67-U-Sask 1800 x Pro-CM67/M2q.
22.	Nigrinudum.
23.	L. 366.13.1/Badia. Bahtim*Giza 117/Bahtim //Giza 118/FA086.
24.	Harma-02//11012-2/CM67 ICB 79-0556-3AP-0AP
25.	81-DG-7431-22-Sel-62.
26.	81-DG-7431-7-Arrivat.
27.	ROD586/Nopal "S" CMB 76A-0549-3AP-1AP-2AP-1AP-0AP.
28.	APi/CM67//Mona/3/DI//Assel/CM65 CMB 78A-0238-2AP-3AP-0AP.
29.	Giza 121/Giza 120.
30.	As 46/Aths*2 Sel, 2L,1AP-3AP-Sel, 2AP-1AP-0APKC.
31.	81-DG - 7431-1.
32.	Bonus.
33.	SM 442-Nackla x PYE "S"

Table 2. (Cont.)

Entry No	Name / Pedigree
34.	Roho/Masurka ICB 77-0170-1AP-1AP-0AP.
35.	Roho/Masurka ICB 77-0170-4AP-0AP.
36.	Roho/Masurka ICB 77-0170-4AP-2AP-0AP.
37.	Roho/Delisa ICB 78-0165-2AP-3AP-1AP-3AP-4AP-0AP.
38.	WI 2291/Bags ICB 78-0672-6AP-0AP.
39.	Roho//Alger/Ceres,362-1-1 ICB 770187-1AP-2AP-3AP-0AP.
40.	Roho/KV ICB 77-0177-2AP-1AP-1AP-3AP-0AP.
	Resistant at both stages :
41.	Assala "S".
42.	Tequila x Arimar -2763 CMB 78A-100.
43.	DC 89.
44.	Giza 123.
45.	L366.13.1/APi-CM67.
46.	DC 163*Avt Local D8x DL 70 CMB-74A-3010228-1Y-1B2Y-1Y.0Y.
47.	Gloria "S" / Copal "S" CMB 81-295-30B-2Y-1Y-0M.
48.	Prato.
49.	2762.BC. (CM67-U.Sask-1800-Pro-CM67/DL70).
50.	Lignee 640/Badia 131 Suwon No 20//Avt/Aths ICB 82-462.
51.	WI 2198/Emir CMB 77A-352-3AP-0AP.

The same behaviour of some of these genotypes was previously recorded by other investigatiors (Khan and Boyd, 1969; Ghobrial et al., 1982 and Rizk *et al.*, 1984).

III. Powdery Mildew :

Varieties and lines which exhibited good resistance at the two stages were 22 (Table 3). These entries included 19 resistant at seedling stage (Nos 1-19), one line was resistant at adult stage (No 20), while entries (Nos 21 and 22) showed good resistance at both stages.

Some of these resistant entries found in this study confirm previously recorded results by Hermansen (1968), Moseman (1972) and Ghobrial et al. (1977 and 1984).

Table 3 . Varieties showed resistance to net blotch at seedling and adult stages in the greenhouse and in the field at different locations, 1988/89.

Entry No	Name / Pedigree
	Resistant at seedling :
1.	WI 2198/ Emir CMB 77A-352-3AP-0AP.
2.	Roho/Julia ICB 77-0178-1AP-2AP-1AP-1AP-0AP.
3.	WI 2197/CI 1350 ICB 77-0014-1AP-2AP-1AP-1AP-0AP.
4.	WI 2291/3/3309/Attiki//Hva 33ICB 78-0632-1AP-2AP-0AP.
5.	WI 2291/Roho ICB 78-643-2AP-1AP-1AP-0AP.
6.	Legia.
7.	WI 2291/ WI 2269 ICB 78-0594-10AP-4AP-1AP-0AP.
8.	Pitayo/Cam/AvtRM1508/3/ID 601810 ICB78-0014-5AP-2AP-1AP-3AP-0AP
9.	WI 2291/4/11012-2/70-22425/3 APm/IB65ICB78-0653-1AP-0AP.
10.	Soufara-03.
11.	OP/ZY//Alger/Union, 385-2-2 ICB 78-0976-1AP-2AP-0AP.
12.	Lth/3/Nopal/Pro/11012-2CMSWB78A-0044-3AP-6AP-3AP-1AP0AP.
13.	Mari/Coho//847-Proctor / Emir.
14.	5819/1420//Aramir CMB77A-1725-5AP-3AP-0AP.
15.	Rupal.
16.	DC10.
17.	Auror/Esp//Alger/Cers, 362-1-1 LB-2L-5AP-0AP.
18.	Jerusalem a barbeslisses/CI 10836 ICB 77-0319-1AP-OSH-1AP-0AP.
19.	WI 2198/Harmal-02 ICB82-0833-1AP-1AP-0AP.
	Resistant at adult :
20.	L. 289.53.2//Tequila. Arimar-2763.
	Resistant at both stages :
21.	Roho/Delisa ICB 78-0165-2AP-6AP-1AP-0AP.
22.	Roho/Kv ICB 77-0177-2AP-1AP-1AP-3AP-0AP.

IV. Stripe Disease :

Results obtained indicated that 125 entries showed good resistance to this disease (Table 4), 17 were intermediate and 58 were susceptible. Some of these varieties and lines were previously recorded as resistant ones (Ghobrial et al., 1982 and Rizk et al. (1984).

The entries which remained highly resistant throughout tests were of sufficient merit to warrant them being used as resistant parents in breeding programmes for developing resistant cultivars.

Table 4 . Varieties showed resistance to net blotch at seedling and adult stages in the greenhouse and in the field at different locations, 1988/89.

Entry No	Name / Pedigree
1.	Uc 566.
2.	Giza 119x(CM67-Apam x Godiva).
3.	Giza 121 x W.W.Wing.
4.	Faiz.
5.	As46/Aths*2 Sel, 21-1AP-3AP-3AP-3AP-1AP-0AP.
6.	Nopal "S" - Ager x Wy 6005.18 CMB 78A-342.
7.	L.370.41.1-Giza 121.
8.	M 25 (84) Attiki CYB 165-14A-2A-1Y-0A.
9.	Giza 117-Asse.
10.	DMR 27/WI 2197 4AP-3AP-3AP-1AP-1AP-1AP-0AP.
11.	Mzq-Benton x 2762-Benton x 2762-Beecher 113.1.20.6.3.
12.	Nopal "S" - Ager x 67D 1782-2 CMSWB-79A-345.
13.	F3 Bak Hip.PI 386540 CMB 79A-317.
14.	Mzq-Benton x 2762-Beecher 113.1.20.1.
15.	Rihane "S".
16.	Giza 117x Asse.
17.	CI 3909.2 x M66.151. Manker / Vantomora CMB 79A-349.
18.	DC 29/C 63 ICB 18-0173-6AP-0AP.
19.	Pro-Gva x DL 70.
20.	Nomar.
21.	Deir Alla 106/Strain 205 ICB 77-0099-1AP-0AP.
22.	2762H-BC (CM 67-U. Sask 1800 x Pro-CM 67// DL 70) CM 77A-1361.
23.	Colhoum / L. 366.13.1.

Table 4 . (Continued)

Entry No	Name / Pedigree
24.	L. 495.1.1 Giza 119-Apizaco.
25.	Beecher x (B225 x B106).
26.	Mzq-Benton x 2762-Beecher 113.1.20.6.2.
27.	Tequila x Arimar - 2763 CMB 78A-100.
28.	Giza 123.
29.	Giza 124.
30.	Bamboxjo Gall/Api-CM67x11012.2 - CMB-74A-1597-E-4B-1Y-1B-0B.
31.	Com 29/C 63 ICB 78-0173-6AP-0AP.
32.	Sutter (2) - Numar UC 76227.
33.	Giza 121/Puebla ICB - 0249-1AP-1AP-1AP-0AP.
34.	L 366.13.1/Api-CM67.
35.	DC 163* Avt Local Db x DL 70 CMB-74A-3010228-1Y-1B2Y-1Y-0Y.
36.	Gloria "S" / Copal "S" CMB81-295-30B-2Y-1Y-1M-2Y-0M.
37.	L. 264.4.8. / Nopal "S" ICB 79-420-10AP-1AP-2AP-0AP.
38.	Giza 121/Strain 205-Rexa 1L-5AP-0AP.
39.	Giza 121/L.366.13.2.
40.	Nigrinudm.
41.	Plata-SV-Mari/Bonus.
42.	Lignee 640/Badia 131 Suwon No 20//Avt/Aths ICB 82-462.
43.	Antares*2/Arabic white ICB 82-1013.
44.	A554. Tra. Cer*2. Avt*2//B214.vt 15L Pro16/Lignee 640.
45.	Giza 117.Giza 121.W.W.Wing.
46.	Giza 119//5D729/Pro. 2762-BC 10925-1-7L-5AP-0AP.
47.	L. 289.53.2//Taquila. Arimar - 2763.
48.	Pcho-P-Dulce "S" CMB 83A-14.
49.	Lignee 642-A557 CMB83A-295.
50.	Impala/Julia//Api ICB 78-1085-2AP-1AP-1AP-1AP-0AP.
51.	CI-08887.CI 5761 SEA-0013-245-35-0S.
52.	Harmal-04.
53.	Rihane-06.
54.	Rihane "S" -4.
55.	Rihane "S" -2.
56.	Harma-02//11012-2/CM67 ICB 79-0556-3AP-0AP.
57.	DC 29/C ICB 78-0173-6AP-0AP.

Table 4 . (Continued)

Entry No	Name / Pedigree
58.	81-DG-7431-36 Sel-309.
59.	Mahally El-Goura.
60.	81-DG-699-10-3.
61.	81-DG-699-18-4.
62.	81-DG-699-1-3.
63.	81-DG-7431-14-EC-6.
64.	Harmal.
65.	81-DG-7431-22-Sel-62.
66.	81-DG-7431-7-Arrivat.
67.	WI 2291/WI 2269.
68.	Indian Dwarf/CM67//Ase/Nacta CMB77A-0699-2AP-0AP.
69.	CR 115/Por//Strain 205 ICB78-0049-2AP-1AP-1AP-2AP.
70.	Api/CM67//Mona/3/DI//Assel/CM65 CMB78A-0238-2AP-3AP-0AP.
71.	WI 2269.
72.	81-DG-7431-31 California Mariout.
73.	Line 4741 Giza 121/Giza 120.
74.	WI 2197/CI 13520 ICB 77-0014-3AP-0AP.
75.	As 46/Aths*2 Sel, 2L 1AP-3AP-Sel, 2AP-1AP-0APKC.
76.	Assala-04.
77.	WI 2197/Arabische ICB77-0042-4AP-OSH-0AP.
78.	Deir Alla 106//7028/2759 ICB78-0568-4AP-1AP-0AP.
79.	M126/CM67//As/Pro ICB78-0568-4AP-1AP-0AP.
80.	81-DG-7431-1.
81.	Bonus.
82.	SM 442-Nackla x PYE "S".
83.	WI 2198/Emir CMB77A-352-1AP-2AP-1AP-0AP.
84.	Roho/Julia ICB 77-0178-1AP-2AP-1AP-0AP.
85.	Roho/Masurka ICB 77-0170-1AP-1AP-0AP.
86.	Roho/Masurka ICB 77-0170-4AP-5AP-0AP.
87.	Roho/Masurka ICB 77-0170-4AP-2AP--2AP-0AP.
88.	Roho/Delisa ICB 78-0165-2AP-3AP-1AP-3AP-1AP-3AP-4AP-0AP.
89.	Aths/4/Pro/Toll//Cer*2/Toll/3/5/5106 ICB 79-0009-10AP-2AP-0AP.
90.	Cr.264-4-8/Nopal "S" ICB 79-0420-10AP-1AP-2AP-0AP.
91.	WI 2291/Bags ICB 78-0672-6AP-0AP.

Table 4 . (Continued)

Entry No	Name / Pedigree
92.	Roho//Alger/Ceres, 362-1-1 ICB 770187-1AP-2AP-3AP-0AP.
93.	H272//WI 2198/ID601810 ICB79-1182-1AP-1AP-0AP.
94.	WI 2197/CI 13520 ICB 77-0014-1AP-2AP-1AP-1AP-0AP.
95.	WI 2291/3/3309/Attiki// Hva 33 ICB 78-0632-1AP-2AP-0AP.
96.	WI 2291/Roho ICB 78-643-2AP-1AP-1AP-0AP.
97.	Legia.
98.	Roho/Delisa ICB 78-0165-2AP-6AP-1AP-0AP.
99.	Roho/KV ICB 77-0177-2AP-1AP-1AP-3AP-0AP.
100.	Roho//Alger/Ceres, 362-1-1ICB 77-0487-1AP-2AP-3AP-4AP-2AP-0AP.
101.	WI 2291/WI 2269 ICB 78-0594-10AP-4AP-2AP-1AP-0AP.
102.	WI 2291/WI 2269 ICB 78-0594-9AP-3AP-1AP-1AP-0AP.
103.	Pitayo/Cam/Avt/RM1508/3/ID601810ICB78-0014-5AP-2AP-1AP-3AP-0AP.
104.	WI 2291/4/11012-2/70-22425/3/Apm/IB65//A16ICB 78-0635-1AP-0AP.
105.	Soufara-03.
106.	OP/Zy//Alger/Union, 385-2-2 ICB 78-0976-10AP-2AP-0AP.
107.	Lth/3/Nopal//Pro/11012-2 CMSWB 78A-0044-3AP-6AP-3AP-1AP-0AP.
108.	WI 2269.
109.	Roho/Masurka ICB 77-0170-4AP-1AP-3AP-1AP-0AP.
110.	B-Volla/WI 2198 CMB 77A - 1596-4AP-0SH-1AP-2AP-2AP-0AP.
111.	Mari/Coho//847-Proctor/Emir.
112.	Aramir-Muller 4534 CMWB 18A-408.
113.	5819/1420//Aramir CMB 77A-1725-5AP-3AP-0AP.
114.	Rupal.
115.	DC 10.
116.	Emir.
117.	Emir//Apm/MC 1905 ICB 78-817-3AP-0AP.
118.	Harmal "S" Sel. 1AP.0AP.
119.	Roho/Delisa ICB 77-166-2AP-3AP-0AP.
120.	Auror/Esp//Alger/Ceres, 362-1-1 LB-2L-9L-5AP-0AP.
121.	Jerusalem a barbeslisses/CI 10836 ICB 77-0319-1AP-0SH-2AP-1AP-0AP.
122.	Harmal "S" Sel, 126-2AP-0APZZ.
123.	Beecher.
124.	5604/1025//Arabi Abiad ICB 81-0210-1AP-4AP-0AP.
125.	WI 2198 / Harmal-02 ICB 82-0833-1AP-1AP-0AP.

REFERENCES

1 . Abdel-Hak, T., E. Ghobrial, and T. Sabet. 1975. Physiological races of *Puccinia hordei* Otth., the causal organism of leaf rust of barley in ARE. Agric. Res. Rev., 53, (2) :1-7.

2 . Caddel, J. L. 1976. Sources of resistance to powdery mildew in Morocco. Plant Dis. Report., 60:65-68.

3 . Ghanem, E.H., E. Ghobrial, R.A. Rizk, A.M. Abdel-Shafi, S. Sherif, and A.Ageez. 1984. Sources of resistance to leaf rust of barley (*Puccinia hordei*). Proceedings of EMCIP symposium, Vol. 2:220-226.

4 . Ghobrial, E., and I. Shafik, and A.M. Hammouda. 1982. Sources of resistance to barley Helminthosporiosis. Barley Newsletter, 25:64-67.

5 . Ghobrial, E., I. Shafik, and A.M. Hammouda. 1982. Sources of resistance to barley Helminthosporiosis. Barley Newsletter, 25:64-67.

6 . Ghobrial, E., L.R. Morsi, and T. Sabet. 1976. Sources of resistance to leaf rust of barley, Puccinia hordei hordei Otth. in ARE. Proceedings of the 2nd Phytopathology Conf., 671-682.

7 . Ghobrial, E., A.M. Hammouda, R. Abdel-Khalik, and E.E. Mostafa. 1977. Studies on the control of powdery mildew of barley in ARE. Agric. Res. Rev.. 55, (2) :31-38.

8 . Ghobrial, E. E. Ghanem, A.A. Bassioni, A. Gouda, M. S. Saleh, end E.E. Mostafa. 1984. Sources of resistance to powdery mildew of barley (*Erysiphe graminis* hordei Em. Marchal). Proceedings of EMCIP Symposiun, Vol. 2:189-203.

9 . Hermansen, J. E. 1968. Studies on the spread and survival of cereal rust and mildew diseases in Denmark. Contro. No. 87 of the Dep. Pl. Pathol. Veterinary and Agric. Coll., Copenhagen.

10 . Khan, T.W., and J. R. Boyd. 1969. Physiological specialization in Drechslera teres. Aust. J. Biol. Sci., 22 (5) : 1229 - 1235.

11 . Large, E.C. 1954. Growth stages of cereals. Plant pathology, 3:129-130.

12 . Moseman, J.G. 1956. Physiological races of Erysiphe graminis hordei in North America. Phytopathology, 46:318-322.

13 . Moseman, J.G. 1972. Isogenic barley lines for reaction to E.graminis f.sp. hordei. crop Sci., 12 (5) : 681 - 682.

14 . Newton, M., and W.J. Cherewick. 1947. Erysiphe graminis in Canada. Can. J. Res., 25 : 73-93.

15 . Newton, M., B. Peturson, and W.D.S. Meredith. 1945. The effect of leaf rust of barley on the yield and quality of barley varieties. Can. J. Res, 23:212-218.

16 . Peterson, R.F., A.B. Compbell, and A.E. Hanna. 1948. A diagrammatic scale for estimating rust intensity on leaves and stems of cereals. Can. J. Res., 26:496-500.

17 .Rizk, R.A., R. Mitkees, A. Gouda, M.E. Salem and M. M. El-Hadidi. 1984. Sources of resistance to Helminthosporium diseases. Proceedings of EMCIP Symposium, Vol. 2:204-219.

18 .Saari, E.E., and J.M. Prescott. 1975. A scale for apprasing the foliar intensity of wheat diseases. Pl. Dis. Report., 59:377-380.

تقييم بعض أصناف الشعير لمدى مقاومتها للأمراض الهامة التى تصيب المحصول فى الساحل الشمالى الغربى

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على الرغم من الجهود التى تبذل فى استنباط أصناف من الشعير عالية المحصول مقاومه للأمراض ، الا أن خسارة كبيره تسببها هذه الأمراض الأقتصاديه (صدأ الأوراق - التبقع الشبكى - البياض الدقيقى - التخطيط).

لهذا يلزم التوصل الى تراكيب وراثيه مقاومه للأمراض لاستعمالها كمصادر للمقاومه فى برامج التربية لانتاج اصناف جديدة مقاومه لهذه الأمراض.

وقد وجد من اختبار مدى مقاومه ٢٠٠ تركيب وراثى من الشعير لهذه الأمراض فى مرحلتى البادره والنبات الكامل أن ١٠٢ تركيب منها ذات مقاومه لمرض صدأ الأوراق وأن ٥١ تركيب وراثى مقاومه للتبقع الشبكى وكذلك ٢٢ تركيب وراثى مقاومه للبياض الدقيقى بالاضافة الى ١٢٥ تركيب وراثى تقاوم مرض التخطيط.