Egypt. J. Agric. Res., 73 (4), 1995.

SURVEY AND FIELD SCREENING OF APHIDS AFFECTING BARLEY

A.A. EL-SAYED[1], S.I. BISHARA[2], M.M. NOAMAN[1] AND G.M. EL-DEFRAWI[2]

1. *Field Crops Research Institute, Agricultural Research Centre, Giza, Egypt.*
2. *Plant Protection Research Institute, Agricultural Research Centre, Dokki, Egypt.*

(Manuscript received 20 September 1989)

Abstract

Survey of aphids infesting barley grown in nothwestern coastal region of Egyp, carried-out in March 1989 revealed the existence of the corn leaf aphid *Rhopalosiphum maidis* (Fitch) as the dominant cereal aphid. Three areas were surveyed being Nubaria, Borg El-Arab, and Marsa Matrouh. The highest aphid population existed in El-Kasr locality west of Marsa Matrouh.

Field screening of 158 barley genotypes for aphid resistance was carried out in three localities being Nubaria, El-Kasr (northwestern coast), and Mallawi (Middle Egypt). Levels of aphid infestion and damage rate were evaluated according to 5-category scale.

In Nubaria, aphid infestation was very low; only 45 entries out of 158 that harboured 1-3 aphid colonies per row.

In El-Kasr locality, most genotypes were infested with aphids but 10 entries were aphid-free and can be considered as sources of resistance.

In Mallawi, barley was exposed to high infestation with four species of aphids namely *Rhopalosiphum padi, R. maidis, Schizaphis graminum*, and *Sitobion avenae*. Ten entries were however, fairly resistant/ tolerant, exhibiting the lowest rate of infestation.

INTRODUCTION

Barley (*Hordeum vulgare L.*) and wheat (*Triticum aestivum L.*) grown in Middle Egypt have been found to be highly susceptible to infestation with four species of cereal aphids namely; *Rhopalosiphum padi* (L), Rhopalosiphum maidis (Fitch), *Schizaphis graminum* (Rondani), and *Macrosiphum (Sitobion) avenae* (Fab.) (EL-Hariry, 1979; Tantawi, 1985).

Aphids cause remarkable yield losses of cereals either by direct feeding on plants or by transmitting virus diseases such as barley yellow dwarf vrius (BYDV);

one of the main vectors being *Rhopalosiphum padi* (Foster et al., 1985).

Barley fields harboured much more aphid populations than the adjacent wheat fields in Shandawil (Upper Egypt) and this was more evident in low aphid seasons; the existence of a 2-yearly cycle of aphids outbreak on wheat and barley in Egypt has been mentioned by Bishara (1987).

In spring, the plants are highly susceptible to infestation with several species of aphids. Breeding for resistance is a powerful tool in an integrated pest management programme in order to avoid or to minimize the use of hazardous insecticides. Finding the source of resistance to aphids is the first step in a breeding programme, as emphasized by Painter (1951), which can be followed by biochemical and genetic studies. Some authors have dealt with screening barley genotypes for aphid resistance e.g. Starks et al. (1972) and Webster and Starks (1984).

The objectives of the present work are; 1) to conduct a survey for identification and to evaluate economic impact of aphid species infesting barley as a major crop in an area of Egypt not previously explored i.e. the northwesterm coast wich is a quite characteristic ecological region of the country being cool and humid, and barley is grown under low rain fed conditions in that area subjected to aphid infestation. 2) to evaluate and screen different breeding materials and introductions of barley in the field for aphid resistance in two different ecological zones to reveal sources of resistance/tolerance. This should ultimately be used to develop aphid resistant/ tolerant barley cutivars in order to minimize the use of hazardous insecticides for aphid control.

METHODOLOGY

Survey studies were carried-out twice during the month of March, which coincides with the peak aphid activity on barley in Egypt. Aphid samples were collected from plants and examined on the spot by means of a magnifying lens, and confirmed in the laboratory under the stereo-microscope to reveal the species of aphids available.

Field screening of barley genotypes for aphid resistance was carried-out at two sites in the northwestern coast namely; Nubaria and El-Kasr, and one site in

Middle Egypt being Mallawi Research Station. 158 barley entries including local and exotic barley breeding materials (Table 1) were grown in single rows 3 m long and 30cm apart with two replications at each site. Rate of seeds was about 7 g/row which represents a density of about 150 plants per row.

Levels of aphid populations on the tested barley entries were evaluated according to the following scale :

1 = no or few individual aphids present.

2 = one small colony on one plant at least.

3 = few small scattered colonies in the plot.

4 = many scattered colonies on many plants in the plot.

5 = many undistinguishable colonies in practically all the plants in the plot.

A more detailed evaluation, however,was conducted at Mallawi, a hot spot for many cereal aphids, to reveal more accurately the mean number of aphids per plant and percentage of plants infested per row. Levels of infestation were evaluated according to the scale given by Way (1965) with some modifications as follows :

1 = Extremely light (E) : no or few individual aphids on the lower leaves.

2 = Light (L) : a small colony confined to the leaves on the lower one-third of the plant.

3 = Medium (M) : several aphid colonies on the stem and leaves on the lower two-thirds of the plant.

4 = Heavy (H) : aphids present in large numbers infesting large proportion of the leaves and stems, and

5 = Very heavy (V) : large numbers of aphids covering all parts of the plants.

Damage was evaluated according to the following scale :

1 = no apparent damage.

2 = slight damage : yellowing and some curling.

3 = moderate damage : honeydew present.

4 = high damage : more honeydew and spread of black fungus, and

5 = all plants are stunted and covered with hundreds of aphids, honeydew, and black fungus.

Table 1. Barley genotypes tested in 1988/89 and their name/pedigree.

Entry No	Name / Pedigree
1.	Uc 566.
2.	L.370.45.2 O[Giza 117xR.R. 801) (Giza 118xFAO 86)]
3.	L.682.8.4 Giza 119 (CM 67 - Apam x Godiva).
4.	L.547.1 Giza 121 - W.W. Wing.
5.	Badia.
6.	Faiz.
7.	As 46/Aths*2 Sel, 21-1AP-3AP-1AP-0AP.
8.	80 F2 SW262.3.20 Nopal"S"- Ager x WY 6005.18 CMB79A-342.
9.	L. 743.3.2 (Aurore X Esp. L21.1L) x P. 276.
10.	L. 711.16.4 OC 89 (CM 67-Apam x Godiva).
11.	L.G. 616.8.2.20 L. 370.41.1-Giza 121.
12.	M 25 (84) Attiki CyB 165-14A-2A-1Y-OA.
13.	L.272.3.4 Giza 117-Asse.
14.	L.366.13.1* Pro-U-Sask 1766 x Avt-Local D8/Api-CM67 x Minn 907
15.	Martin - Hiproly Tc 73-68.
16.	DMR 27/WI 2197 4AP-3AP-1AP-1AP-0AP.
17.	79 F2 SW 75.1.1 F.B. 44. (11016.2 x Apm. IB65/DS-Aprox 11012.2 CMSWB-78A-123
18.	Mzq-Benton x 2762-Beecher 113.1.20.6.3.
19.	80 F2 SW262.5.20 Nopal"S"-Ager x 76D 1782-2 CMSWB-79A-345.
20.	80 F2 SS126.2.20 F3 Bak Hip. Pl. 386540 CMB 79A - 317.
21.	Mzq-Benton x 2762 - Beecher 113.1.20.1.
22.	Rihane "S".
23.	L. 781.12.3 Giza 117-Asse.
24.	Assala "S"
25.	Iris-Nopal "S" CMB 77A - 0065-1AP-0AP.
26.	80 F2 SS141.1.20 CI 3909.2 x M66.151. Manker/VantomoraGMB 79A-349
27.	L 366.13.1 / Ky 63-1294.
28.	81-CD-7431-20 / Giza 121.
29.	DC 163* Avt - Local D8 x DL70 CMB - 74A-301 - 22B-1Y-1B-2Y-1Y-0Y
30.	WI 2197//Esp.1.
13.	DC 29/C 63 ICB 81-0173-6AP-0AP.
32.	L 366.13.1* [(Cn 100-D623/Fun x Fun)2 Tra] x 10925-17L-5AP-0AP.
33.	Pro-GvaxDL 70.
34.	Nomar.
35.	Deir Alla 106/Strain 205 ICB 77-0099-1AP-0AP.
36.	78F2SS269.3.32762-BC(CM67-U.Sask1800xPro-CM67/DL70)Cm77A-1361

Table 1. (Cont.)

Entry No	Name / Pedigree
37.	Colhoum/L.366.13.1
38.	L.495.1.1 Giza 119-Apizaco.
39.	L.772.15.1.10 Beecher X B225 - B106.
40.	Mzq-Bentonx2762-Beecher 113.1.20.6.2.
41.	79F2 SS 29.5.2.20 Tequila x Arimar - 2763 CMB / 8A-100.
42.	DC 89.
43.	Giza 123.
44.	Giza 124.
45.	Giza 121// Goliad - CI 8099 1060 / 10/4.
46.	Bahtim / Gva CMB 74A - 0236 - 45 - 0 AP.
47.	Bambo x Jo Gall/Api-CM67 x 11012.2 CmB - 74A - 1597-E-4B-1Y-1B-0B.
48.	DC 29/C 63 ICB 78-0173 - 6 AP - 0AP.
49.	Sutter (2) - Nomar UC 76227.
50.	Giza 121 / Puebla ICB - 0249 - 1AP-1AP-0AP.
51.	Arizona 5908xAthenais.
52.	L 366.13.1// Api/ CM 67.
53.	DC 163* Avt Local D8 x DL 70 CMB - 74A - 3010228 - 1Y-1B2Y-1Y-0Y.
54.	Gloria "S"/Copal "S" CMB81-295-30B-2Y-1M-2Y-0Y.
55.	L. 264.4.8./Nopal "S" ICB79-420-1OAP-1AP-2AP-0AP.
56.	Giza 121/ L. 366.13.2.
57.	Giza 121/ Strain 205-Reka 1L-5AP-0AP.
58.	L. 366.13.* CM67-U-Sask 1800 x Pro-CM 7 / Mzq.
59.	Celaya-CI 3902.2 x 2762 - Beecher / Hulles 63.2.20.5.
60.	Prato.
61.	78 F2 269.3.3 2762.BC. (CM67-U. Sask-1800-Pro-CM67/DL70).
62.	Giza 121/L.366.13.2.
63.	Nigrinudum.
64.	Plata//Sv Mari / Bonus.
65.	L.366313.1/Plia. Bahtim*Giza 117/Bahtim/Giza 118/FA086.
66.	Lignee 640/Badia 131 Suwon No 20//Avt/Aths ICB 82-462.
67.	Antares*2/ Babic whit ICB82-1013.
68.	AS54/Tra//Cer*2. Avt*2//B214.vt 15L Pro16/Lignee 640.
69.	Giza 117/Giza121//W.W. Wing.
70.	Giza 119//5D729/Por.2762-BC 10925-1-7L-5AP-0AP.
71.	Baladi Bahtim/5D729-Por/2762. BC.
72.	L. 289.53.2//Tequila/Arimar-2763.
73.	Roho-P-Dulce "S" CMB83A-14.

Table 1. (Cont.)

Entry No	Name / Pedigree
74.	Lignee 642-As57 CMB 83A - 295.
75.	Impala/Julia//Api ICB 78-1085-2AP-2AP-1AP-1AP-0AP.
76.	CI-08887-CI5761 SEA - 0013 - 245-05.
77.	Harmal - 04.
78.	Rihane-06.
79.	Rihane "S" - 4.
80.	Rihane "S"-2.
81.	Harma - 02//11012-2/CM687 ICB79-0556-3AP-0AP.
82.	DC 29/ C 63 ICB78-0173-6AP-0AP.
83.	81-DG-7431-36 Sel - 309.
84.	Giza 121.
85.	Mahally EL-Goura.
86.	Sahrawi.
87.	81-DG-699-10-3.
88.	81-DG-699-18-4.
89.	81-DG-699-6-1.
90.	81-B-6233 MSFRS.
91.	81-DG-699-1-3.
92.	81-DG-7431-14-EC-6.
93.	Harmal.
94.	81-GD-7431-22-Sel-62.
95.	81-DG-7431-7-Arrivat.
96.	WI2291 / WI2269.
97.	ROD586/Nopal "S" CMB76A-0549-3AP-1AP-2AP-1AP-0AP.
98.	N-ACC 4000-123-80.
99.	Indian Dwarf/GM67//ASE/Nacta CMB77A-0699-2AP-0AP.
100.	CM72-8/CR48.
101.	CR 115/POR//STrain 205 icb78-0049-2AO-1AP-1AP-2AP.
102.	API/CM67//MONA/3/DI//ASSEL/CM65 CMB78A-0238-2AP-3AP-0AP
103.	WI2269.
104.	81-DG-7431-31 California Mariout.
105.	Line 4741 Giza 121/Giza 120.
106.	WI2197/CI 13520 ICB 77-0014-3AP-0AP.
107.	AS 46/Aths *2 Sel, 2L, 1AP-3AP-Sel, 2AP-1AP-0ARKC.
108.	Assala-04.
109.	WI2197/Arabische ICB77-0042-4AP-0SH-0AP.
110.	Deir Alla 106//7028/2759 ICB78-0333-5AP-1AP-1AP-0AP.

Table 1. (Cont.)

Entry No	Name / Pedigree
111.	M126/CM67//AS / PRO ICB78-0568-4AP-1AP-0AP.
112.	81-DG-7431-1.
113.	Bonus.
114.	SM 442-Nackla x PYE "S".
115.	WI 2198/Emir CMB77A-352-3AP-0AP.
116.	Roho/Julia ICB 77-0178-1AP-2AP-1AP-0AP.
117.	Roho/Mazurka ICB77-0170-1AP-1AP-0AP.
118.	Roho/Mazurka ICB77-0170-4AP-5AP-0AP.
119.	Roho/Mazurka ICB77-0170-4AP-2AP--2AP-0AP.
120.	Roho/Delisa ICB78-0165-2AP-3AP-1AP-3AP-4AP-0AP.
121.	Aths/4/Pro/Toll// Cer*2/Toll/3/5/5106 ICB 79-0009-10AP-2AP-0AP.
122.	Cr. 264-4-8/Nopal "S" ICB79-0420-10AP-1AP-2AP-0AP.
123.	WI2291/Bags ICB78-0672-6AP-1AP-2AP-0AP.
124.	Roho//Alger/Ceres, 362-1-1 ICB77-0187-1AP-2AP-3AP-0AP.
125.	H272//WI2198/ID601810 ICB79-1184-1AP-0AP.
126.	WI2197/CI2198/ID601810 ICB77-0014-1AP-2AP-1AP-1AP-0AP.
127.	WI2291/3/3309/Attiki//Hav 33 ICB78-0632-1AP-2AP-0AP.
128.	WI2291/Roho ICB78-643-2AP-1AP-1AP-0AP.
129.	Legia.
130.	Roho/Delisa ICB 78-0165-2AP-6AP-1AP-0AP.
131.	Roho/KV ICB77-0177-2AP-1AP-1AP-3AP-0AP.
132.	Roho//Alger/Ceres, 362-1-1ICB77-0487-1AP-2AP-3AP-4AP-2AP-0AP.
133.	WI2291/WI2269 ICB78-0594-10AP-4AP-2AP-1AP-0AP.
134.	WI2291/WI2269 ICB78-0594-9AP-3AP-1AP-1AP-0AP.
135.	Pitayo/Cam/Avt/RM1508/3/ID 601810 ICB78-0014-5AP-2AP-1AP-3AP-0AP
136.	WI2291/4/4/11012-2/70-22425/3/APm/IB65//A16ICB78-0635-0AP.
137.	Soufara-03.
138.	OP/ZY//ALGER/UNION, 385-2-2 ICB78-0976-1AP-2AP-0AP.
139.	Lth/3/Nopal/Pro/11012-2CMSWB78A-0044-3AP-6AP-3AP-3AP-0AP.
140.	WI2269.
141.	Roho/Mazurka ICB77-0170-4AP-1AP-3AP-1AP-0AP.
142.	B-Volla/W12198 CMB 77A-1725-5AP-3AP-0AP.
143.	Mari/Roho//847-Proctor/Emir.
144.	Aramir-Muller 4534 CMSWB 18A-408.
145.	5819/1420//Armir CMB 77A -1725-5AP-3AP-0AP.
146.	Rupal.
147.	DC 10.

Table 1. (Cont.)

Entry No	Name / Pedigree
148.	Emir.
149.	Emir//APm/MC 1905 ICB78-817-3AP-0AP.
150.	Harmal "S" Sel. 1AP-0AP.
151.	Roho/Delisa ICB77-166-2AP-3AP-0AP.
152.	Aurore/Esp//Alger/Ceres, 362-1-1 LB-2L-9L-5AP-0AP.
153.	Jerusalem a barbes lisses/Cl 10836 ICB77-0319-1AP-OSH-2AP-1AP-0AP.
154.	Harmal "S" Sel, 126-2AP-0APZZ.
155.	Beecher.
156.	Kenya Research/Harma-03 ICB 78-0866-4AP-1AP-1AP-3AP-0AP.
157.	5604/1025//Arabi Abiad ICB81-2010-1AP-4AP-0AP.
158.	WI2198/Harmal-02 ICB82-0833-1AP-1AP-0AP.

RESULTS AND DISCUSSION

1. Survey

Examination of aphid individuals collected from barley plants grown at different locations in the northwestern coastal region revealed the following :

(A) Nubaria Area :

Locality : Research Experiment Station of ARC.

Materials examined : Disease trap nursery of barley and some local and exotic barley genotypes.

No of genotypes examined : 158 local and exotic material + 48 local entries. Percentage of barley plants infested : About 5%.

Aphid species available	% of population.
Rhopalosiphum maidis (Fitch)	98 %
Schizaphis graminum (Rond.)	2 %

B) Borg El-Arb Area :

Locality : El Gharbaniat .

Materials examined : A farmer's barley field planted with his own local variety, the field was irrigated once at sowing time and it depended upon rainfall from then. It was a low rainfall season in that area.

Percentage of barley plants infested : About 5%.

Aphid species available : Rhopalosiphum maidis (Fitch).

C) Marsa Matrouh Area :

Locality : 1. El-Kasr Farm, about 5 km west of Marsa Matrouh .

Materials examined : Breeding lines including local and exotic materials. Percentage of barley plants infestd : About 20%.

Aphid species available	% of population.
Rhopalosiphum maidis (Fitch)	98 %
Rhopalosiphum padi (L.)	2 %

2. Abo-Lahow, about 35 km west of Marsa Matrouh.

Percentage of barley plants infested : About 1%.

Aphid species available	% of population.
Rhopalosiphum maidis (Fitch)	90 %
Schizaphis graminum (Rond.)	10 %

2. Field Screening of Barley Genotypes

Nubaria Locality :

Aphid infestation was very low in this locality during March 1989, possibly because it has been recently cultivated with wheat and barley, and creal aphids have not yet established themselves in this area. However, the existence of only one species of cereal aphids namely *Rhopalosiphum maidis* may be attributed to the fact that in the previous summer maize and sorghum, the most favourable hosts for this species, were grown in that area.

The very low infestation level of several barley genotypes tested this season does not necessarily mean that they are resistant; in fact only 45 entries out of 158, harboured about one to three small colonies per row without any detectable damage.

El-Kasr Locality (Marsa Matrouh) :

This area has been cultivated with rainfed barley for hundreds of years by Bedouin inhabitants and the possibility of the presence of aphids is expected. The dominance of Rhopalosiphum maidis on barley may reflect the ability of this species to survive under the prevailing weather conditions characteristic of this ecological region being cool with high relative humidity, strong wind, and highest rainfall in the

country (about 200 mm or less) i.e. low rainfall area, ecologically speaking.

Most of the tested genotypes were infested with aphids, the levels ranging between grade 1 (i.e. no aphids) and grade 3 (moderate). A single genotype (No 1) exhibited grade 4 (high infestation) and one entry (No 2) was very highly susceptible (grade 5) while 10 entries (3-12) were free of aphid infestation (grade 1) (Table 2).

Mallawi Locality :

Infestation with aphids was very high in Mallawi during March, 1989. The dominant species were Rhopalosiphum maidis and R. padi occupying together about

Table 2. Barley entries, their name / pedigree,and their reaction to Rhopalosiphum maidis at El-Kasr, 1988/89.

Entry No	Name / Pedigree	Grade
1.	Harmal's Sel. 1 AP-OAP.	4
2.	Kenya Research/Harma-03 ICB 78-0866-4AP-1AP-3AP-OAP.	5
3.	UC 566	1
4.	Nomar.	1
5.	Sutter (2)- Nomar UC 76227.	1
6.	Giza 117/Giza 121/W.W. Wing.	1
7.	Giza 119// 5D 729 / por. 2762-BC 10925 -1-7L-5AP - OAP.	1
8.	Sahrawi.	1
9.	81-DG-7431-7 Arrivat.	1
10.	CM 72-8 / CR48.	1
11.	CR 115/por/ / Strain 205 ICB78-0049-2AP-1AP-2AP.	1
12.	Roho/Mazurka ICB 77-0170-1 AP-1AP-0AP.	1

85% of the total aphid population. The greenbug Schizaphis graminum formed about 12% and Sitobion avenae about 3% of the population. The rate of infestation ranged between grades one and 4. The least infested genotypes were 11 (Table 3). The most proming of these are Nos 4,6, and 9 on the basis of percentage of infestation per row as shown in table 3.

The number of genotypes showing grade 2 are 46, grade 3 are 76, and grade 4 are 61 (Data are not shown). The promising genotypes were surrounded with highly infested susceptible barley entries, so most probably they carry resistant characters which might be due to chemical nature or to some physical barriers against

aphids.

Table 3. Barley entries, mean aphids/plant, rate and percentae of infestation at Mallawi, 1988/89.

Entry No	Name / Pedigree	Mean aphids plant	Rate of damage	% infest. /row
1.	UC 566.	46	1	70
2.	Giza 117 Asse.	50	1	60
3.	L 366.13* Pro-U-Sask 1766 Xavt-Local D8/APi - CM 67 x Minn 907.	60	1	60
4.	Martin-Hiproly TC 73-68.	30	1	20
5.	Giza 121//Goliad-CI8099 1060/10/4.	60	1	50
6.	ROD586/Nopal's CMB76A-0549-3AP 1AP- 2AP-1AP-0AP.	80	1	40
7.	CM72-8/CR48.	55	1	50
8.	81-DG-7431-31 California Mariout.	50	1	50
9.	Line 4741 Giza 121/Giza 120.	50	1	40
10.	Kenya Research/Harma-03 ICB78-0866-4AP-1AP-3AP-0AP.	80	1	60
11.	WI2198/Harmal-02ICB82-0833-1AP-1AP-0AP	80	1	60

Further investigations are highly emphasized to reveal the biochemical or anatomical nature of the source of resistance .

REFRENCES

1 . Bishara, S.I. 1987. Cereal Improvement Program in Egypt, ICARDA. Screening wheat and barley for aphid resistance. Ann. Rep. No 2, 1986/87.

2 . El-Hariry, M.A. 1979. Biological and ecological studies on aphids attacking corn and wheat in Egypt. M.Sc. Thesis, Ain Shams. Univ. Cairo, Egypt.

3 . Foster, J.E., S.S. Stamenkovic, J.E. Araya. 1985. A selected bibliography of the bird cherry-oat aphid, *Rhopalosiphum padi* (L.) with references on life history, damage, control, and barley yellow dwarf virus transmission.

4 . Painter, R.H. 1951. "Insect Resistance in Crop Plants". The Macmillan Co., New York.

5 . Starks, K.J., R. Muniappan, and R.D. Elikenbary. 1972. Interaction of plant resistance and parasitism against the greenbug in barley and sorghum. Ann. Entomol. Soc. Am. 68 : 650 - 655.

6 . Tantawi, A.M. 1985. Studies on wheat aphids in Egypt. I. Surveys. Rachis Vol. 4. No. 2 : 25 - 26.

7 . Way, M.J. 1968. Intra-specific mechanisms with special reference to aphid populations. In "Insect abundance" (T.R.E. Southwood, ed.) Royal Entomological Society, London.

8 . Webster, J.A., and K. J. Starks. 1984. Sources of resistance in barley to two biotypes of the greenbug *Schizaphis graminum* (Rondani). Homoptera :

حصر أنواع المن التى تصيب الشعير والتصفيه الحقليه لبعض التراكيب الوراثيه للشعير المقاوم للمن

عبد الفتاح أحمد أحمد السيد [١] ، صادق ابراهيم بشاره [٢] ،
ماهر نعمان محمد [١] ، جوده الدفراوى [٢]

١ قسم بحوث الشعير - معهد بحوث المحاصيل الحقلية - مركز البحوث الزراعيه - الجيزة
٢ معهد بحوث وقاية النبات - مركز البحوث الزراعيه - الدقى .

أظهر حصر لانواع المن التى تصيب نباتات الشعير بالساحل الشمالى الغربى بمصر والذى تم فى شهر مارس لعام ١٩٨٩ أن من الذره هو السائد ضمن الانواع الأخرى التى تصيب الحبوب - تمت الدراسة بثلاث مناطق هى النوباريه وبرج العرب ومرسى مطروح ، ووجدت أعلى اصابه لهذه الحشره بناحيه القصر (غرب مرسى مطروح).

وأجريت تجارب حقليه لتصفية ١٥٨ تركيب وراثى من الشعير لصفة المقاومه لحشرة المن بثلاث مناطق هى النوباريه ، القصر (بالساحل الشمالى الغربى) ، ملوى (بمصر الوسطى) قدرت مستويات الاصابه بالمن والضرر طبقا لمقياس يشتمل على خمس درجات .

أظهرت الدراسه أنخفاض الاصابه بالمن أنخفاضا ملحوظا بمنطقة النوباريه حيث لم يصب بالحشره سوى ٤٥ من ١٥٨ تركيب وراثى بمعدل ١ -٣ مستعمرات لكل خط . وفى منطقة القصر أصيبت معظم التراكيب الوراثيه بدرجات مختلفه فيما عدا عشرة تراكيب وجدت خاليه من الاصابه يمكن أعتبارها مصادر للمقاومه. وفى منطقة ملوى تعرض الشعير لإصابه عاليه بأربعة أنواع من المن هى من الشوفان ومن الذرة ومن القمح والمن الأنجليزى ومع ذلك ظهر أن عشرة تراكيب وراثية تقاوم وتتحمل الاصابة ووجد عليها أقل معدل إصابه بهذه الحشره.